CRCS SCHEME

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USN			2	1ARC14
		First Semester B.Arch.	Degree Examination, June/July 2025	5
			of Architecture – I	
Tin	1e: 3	hrs.	Max. Ma	arks: 100
1 111				
	11	oie: Answer any FIVE juit quest	tions, choosing ONE full question from each mod	iuie.
1		Explain the architectural features		(20 Marks)
2		Write short notes on any 2 of the	OR	
2	a.	Oval Hut	. following .	
	b.	Stone Henge		
	c.	Passage Graves and Gallery Graves	ves	(20 Marks)
			Module-2	
3			ne city of Mohenjodaro with respect to street pla	•
		housing.		(20 Marks)
			OR	
4		With the help of neatly labelled civilization.	d diagram explain the funerary architecture of N	lile Valley (20 Marks)
		CIVITIZATION.	.0"	(20 Marks)
_		E1-i 41 - 1 64 6 - 6	Module-3	(20.14 1)
5		Explain the key features of Chin	ese Architecture.	(20 Marks)
			OR	
6		Explain the key features of Japan	nese Architecture.	(20 Marks)
			Module-4	
7		With the help of neatly labelled	sketches explain the following:	
	a. b.	Lion Gate Treasury of Atreus	4 >	(20 Marks)
	4		25 ^y	(=0 1/111113)
8		Explain the key features of Palac	OR	(20 Marks)
o		Explain the key leatures of Farac	ce of reisepons	(20 Marks)
			Module-5	
9		Explain the features of spatial de	esign of settlements in desert region.	(20 Marks)
			OR	
10		Citing the example of any triba environment.	al culture, explain the influence of geography in	their built (20 Marks)



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	Secon	d Sen		Degree Examination, J f Architecture - II	une/July 2025
Time	e: 3 hrs.		_	0	Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

Discuss the two phases of Buddhist architecture. Elaborate on the construction and history of rock cut caves during that era with examples. (20 Marks)

OR

- Write short notes on:
 - i) Sanchi Stupa
 - ii) Chaitya halls at Karli
 - iii) Viharas at Elephanta caves.
 - iv) Stambha "Ashoka Pillar"

(20 Marks)

Module-2

3 a. Discuss the evolution of temple with sketches.

(10 Marks)

b. Why is the Gupta period referred to as the 'Golden Age' of Indian art and architecture.

(10 Marks)

OR

4 a. Explain and sketch the rock cut temples of Udayagiri.

(10 Marks)

b. Illustrate and explain the general architectural character of a typical Hindu temple of an early Hindu Gupta period. (10 Marks)

Module-3

Explain the space of Brihadeshawara Temple with sketches of plan and elevation, explain the architectural design features. (20 Marks)

OR

6 Discuss and sketch the plan and design of Meenakshi Temple.

(20 Marks)

Module-4

- What are the characteristics of Lingaraja temple. Explain and sketch the following:
 - i) Layout
 - ii) Structure

iii) Decoration

(20 Marks)

OR

- 8 Explain the features of Hoysala style temple architecture. Give examples of Keshvai Temple at Somnath. Explain its:
 - i) Layout
 - ii)Structure

iii)Decoration

(20 Marks)

Module-5

9 Explain the architectural style of Vijayanagara Dynasty. Elaborate salient features of Hazara Rama Temple, Hampi with sketches. (20Marks)

ΛR

Illustrate with sketches "Surya Temple style at Modhera, Gujarat" Explain its architectural style, which is an example of Rajputana group. (20 Marks)



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First/Second Semester B.E./B.Tech. Degree Examination, June/July 2025 Engineering Chemistry

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the construction, working and applications of Li-ion batteries. (06 Marks)
 - b. Define 'Ion selective electrodes'. Explain the construction, working of glass electrode.

(07 Marks)

c. For the cell Li|Li⁺(0.2m)||Z_n²⁺(0.45m)|Z_n, write the cell reactions and calculate the emf of the cell at 298 K, if standard electrode potentials of Z_n and Li electrodes are -0.76 and -3.04V respectively. (07 Marks)

OF

2 a. Briefly explain the direct recycling of Li – ion batteries.

(06 Marks)

- b. What is a 'reference electrode' Describe the construction, working and applications of calomel electrode. (07 Marks)
- c. Define 'Single Electrode Potential'. Calculate the electrode potential of Z_n electrode at 28°C, dipped in Z_nSO_4 solution of 0.055m. Given that standard electrode potential of Z_n is -0.76 V. (07 Marks)

Module-2

3 a. Distinguish between electroplating and electroless plating.

(06 Marks)

- b. Define 'corrosion'. Explain the electro-chemical theory of corrosion taking iron metal as an example. (07 Marks)
- c. What is 'Cathodic protection'? Briefly explain the sacrificial Anode method of cathodic protection. (07 Marks)

OR

4 a. What is 'Metal finishing'? mention any five technological importance.

(06 Marks)

- b. Explain the following factors affecting rate of corrosion:
 - i) Nature of corrosion product
 - ii) Ratio of anodic to cathodic areas
 - iii) Temperature.

(07 Marks)

c. What is 'electroless plating'? explain the electroless plating of copper.

(07 Marks)

Module-3

5 a. Explain the fullerenes with properties and applications.

(06 Marks)

b. Write a note on synthesis, properties and applications of polyurethanes.

(07 Marks)

c. What is a 'conducting polymer'? Explain the factors influencing the conduction in organic polymers.
 (07 Marks)

OR

- 6 a. Briefly explain the following size dependant properties of nano materials:
 - i) Surface area
 - ii) Catalytic properties.

(06 Marks)

- b. Define 'Biodegradable polymer'. Explain the synthesis and applications of polylactic acid. (07 Marks)
- c. What are 'Polymer composites'? Explain the synthesis and properties of Kevlar fibre.

(07 Marks)

Module-4

7 a. Briefly explain any six basic principles of green chemistry.

(06 Marks)

- b. Explain the production of hydrogen by photocatalytic water splitting method. (07 Marks)
- c. What are 'photovoltaic cells'? Brief on the construction, working and applications of photovoltaic cells. (07 Marks)

OR

- 8 a. Describe the construction and working of methanol oxygen fuel cell with H₂SO₄ as electrolyte. (06 Marks)
 - b. Explain the microwave synthesis with examples.

(07 Marks)

c. Describe the synthesis of paracetamol by conventional and green route from phenol.

(07 Marks)

Module-5

- 9 a. In a COD experiment, 28.5cm³ and 17.5cm³ of 0.025N FAS solutions were required for blank and sample titration respectively. The volume of test sample used was 25 cm³, calculate the COD of the sample.

 (06 Marks)
 - b. Explain the theory, instrumentation and applications of colorimetry.

(07 Marks)

c. Describe the principles and requirements of titrimetric analysis.

(07 Marks)

OR

- 10 a. Define the following units of a standard solution:
 - i) ppm
 - ii) Molarity
 - iii) Normality.

(06 Marks)

b. Explain the method of determination of hardness of water by EDTA titration.

(07 Marks)

c. Explain the theory, instrumentation and applications of potentiometry.

(07 Marks)

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2025 **Elements of Civil Engineering and Mechanics**

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Briefly explain the scope of following fields of civil engineering.
 - i) Earthquake engineering ii) Transportation engineering.

(10 Marks)

b. Write the requirements of good building stones. Explain the factors causing deterioration of stone work. (10 Marks)

OF

- 2 a. Explain the role of civil engineers in the development of country.
- (10 Marks) (10 Marks)

b. Explain briefly the field test conducted on bricks.

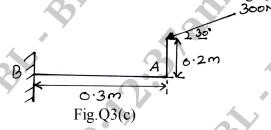
(10 Marks)

Module-2

- 3 a. List and explain concepts of idealization in engineering mechanics and explain the characteristics of force. (10 Marks)
 - b. Explain: i) Angle of friction ii) Cone of friction.

(04 Marks)

c. Find the moment of force 300 N about A and B as shown in Fig.Q3(c).



(06 Marks)

OR

4 a. State and prove Parallelogram law of forces.

(05 Marks)

b. Determine the resultant force acting on the structure at point 0 both in magnitude and direction in Fig.Q4(b).

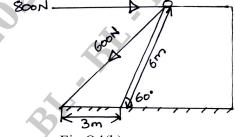
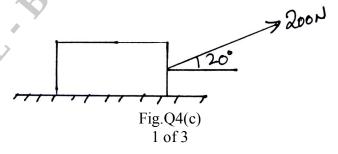


Fig.Q4(b)

(10 Marks)

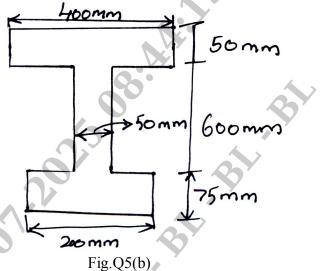
c. A block shown in Fig.Q4(c) is just moved by a force of 200N. The Weight of the block is 60N. Determine the co-efficient of static friction between the block and the floor. (05 Marks)



Module-3

Derive an expression for centroid of a right angled triangle from top from first principles. 5

Find the moment of inertia along the horizontal axis and vertical axis passing through the centroid of section shown in Fig.Q5(b).



(10 Marks)

- State and prove parallel axis theorem. 6
 - Calculate the centriod for Fig.Q6(b).

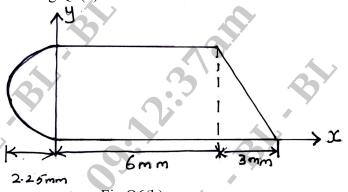


Fig.Q6(b) (12 Marks)

Module-4

Explain different types of support system for beams with neat sketch.

(08 Marks)

(08 Marks)

Determine the internal forces in each of the members for the truss shown in Fig.Q7(b).

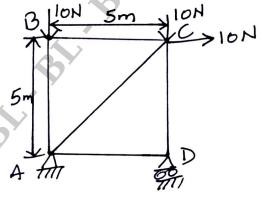
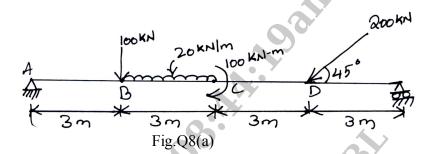


Fig.Q7(b)

(12 Marks)

8 a. Determine the support reaction at A and E for the beam shown in Fig.Q8(a).



b. Explain the procedure for solving a truss by method of joints.

(08 Marks)

(12 Marks)

Module-5

9 a. State and explain D-Alembert's principle of forces.

(08 Marks)

b. A police officer observes a car approaching at the unlawful speed of 60 kmph. He gets on his motocycle and starts chasing the car, just as it passes in front of him. After accelerating for 10 sec at a constant rate, the officer reaches his top speed of 75 kmph. How long does it take the officer to overtake the car from the time he started? (12 Marks)

OR

- 10 a. Explain:
 - i) Displacement
 - ii) Average velocity
 - iii) Instantaneous velocity
 - iv) Speed
 - v) Acceleration.

(10 Marks)

b. A stone is dropped from the top of the tower 50 m high. At the same time another stone is thrown up from the foot of the tower with a velocity of 25 m/s. At what distance from the top and after how much time the 2 stones cross each other. (10 Marks)

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2025 Elements of Civil Engineering and Mechanics

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Briefly explain the scope of following fields of civil engineering.
 - i) Earthquake engineering ii) Transportation engineering.

(10 Marks)

b. Write the requirements of good building stones. Explain the factors causing deterioration of stone work. (10 Marks)

OF

- 2 a. Explain the role of civil engineers in the development of country.
- (10 Marks) (10 Marks)

b. Explain briefly the field test conducted on bricks.

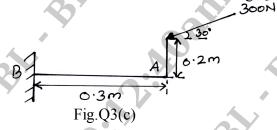
1 2

Module-2

- 3 a. List and explain concepts of idealization in engineering mechanics and explain the characteristics of force. (10 Marks)
 - b. Explain: i) Angle of friction ii) Cone of friction.

(04 Marks)

c. Find the moment of force 300 N about A and B as shown in Fig.Q3(c).



(06 Marks)

OR

4 a. State and prove Parallelogram law of forces.

(05 Marks)

b. Determine the resultant force acting on the structure at point 0 both in magnitude and direction in Fig.Q4(b).

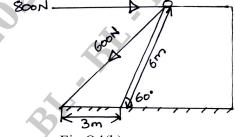
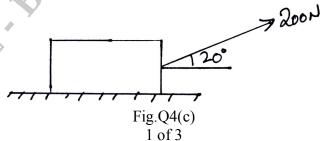


Fig.Q4(b)

(10 Marks)

c. A block shown in Fig.Q4(c) is just moved by a force of 200N. The Weight of the block is 60N. Determine the co-efficient of static friction between the block and the floor. (05 Marks)



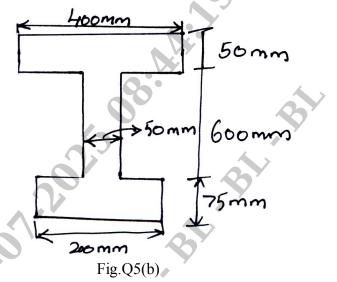
Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8=50, will be treated as malpractice. Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

Module-3

5 a. Derive an expression for centroid of a right angled triangle from top from first principles.

(10 Marks)

b. Find the moment of inertia along the horizontal axis and vertical axis passing through the centroid of section shown in Fig.Q5(b).



OR

6 a. State and prove parallel axis theorem.

(08 Marks)

(10 Marks)

b. Calculate the centriod for Fig.Q6(b).

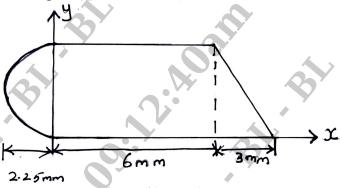


Fig.Q6(b)

(12 Marks)

Module-4

7 a. Explain different types of support system for beams with neat sketch.

(08 Marks)

b. Determine the internal forces in each of the members for the truss shown in Fig.Q7(b).

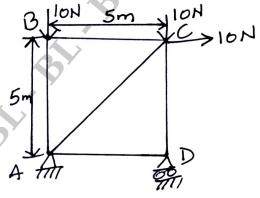
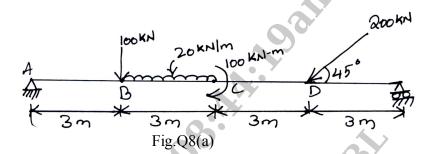


Fig.Q7(b)

(12 Marks)

8 a. Determine the support reaction at A and E for the beam shown in Fig.Q8(a).



b. Explain the procedure for solving a truss by method of joints.

(08 Marks)

(12 Marks)

Module-5

9 a. State and explain D-Alembert's principle of forces.

(08 Marks)

b. A police officer observes a car approaching at the unlawful speed of 60 kmph. He gets on his motocycle and starts chasing the car, just as it passes in front of him. After accelerating for 10 sec at a constant rate, the officer reaches his top speed of 75 kmph. How long does it take the officer to overtake the car from the time he started? (12 Marks)

OR

- 10 a. Explain:
 - i) Displacement
 - ii) Average velocity
 - iii) Instantaneous velocity
 - iv) Speed
 - v) Acceleration.

(10 Marks)

b. A stone is dropped from the top of the tower 50 m high. At the same time another stone is thrown up from the foot of the tower with a velocity of 25 m/s. At what distance from the top and after how much time the 2 stones cross each other. (10 Marks)

CBCS SCHEME

						ZIEGIII(נ
USN						Question Paper Version: A	

First Semester B.Arch./B.Plan. Degree Examination, June/July 2025 Communicative English

Time: 2 hr.] [Max. Marks: 100

INSTRUCTIONS TO THE CANDIDATES

- 1. Answer all the **hundred** questions, each question carries one mark.
- 2. Use only Black ball point pen for writing / darkening the circles.
- 3. For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.
- **4.** Darkening two circles for the same question makes the answer invalid.
- 5. Damaging/overwriting, using whiteners on the OMR sheets are strictly prohibited.
- 1. Which of the following is a benefit of effective intercommunication
 - a) Misunderstandings and conflicts
- b) Increased collaboration and innovation

c) Decreased productivity

- d) Decreased trust among team members
- 2. Which communication skill is particularly important for resolving conflicts in intercommunication
 - a) Active listening

b) Avoidance

c) Defensiveness

- d) Interrupting
- 3. In intracommunication, what does effective self-management entail?
 - a) Ignoring personal emotions and biases
 - b) Expressing emotions without restraint
 - c) Controlling one's emotions and reactions
 - d) Reacting impulsively to situations
- **4.** Which of the following is a characteristic of effective intercommunication?
 - a) Lack of transparency
 - b) Power struggles
 - c) Openness and honesty
 - d) Misinterpretation of messages
- 5. How does active listening contribute to both intercommunication and intracommunication?
 - a) By encouraging interrupting
 - b) By promoting understanding and empathy
 - c) By prioritizing speaking over listening
 - d) By discouraging collaboration

6.	Which of the following is NOT a component of effective communication a) Clarity b) Active Listening c) Interrupting d) Empathy
7.	What is the primary purpose of paraphrasing in communication? a) To confuse the listener b) To summarize the speaker's message in your own words c) To ignore the speaker's message d) To interrupt the conversion
8.	Which communication skill involves the ability to understand and share the feelings of another person a) Clarity b) Assertiveness c) Empathy d) Nonverbal communication
9.	When delivering a presentation, what is an effective way to engage the audience? a) Speak in a monotone voice b) Avoid eye contact c) Use complex jargon d) Tell stories and anecdotes
10.	Which form of communication is most appropriate for delivering complex instructions to a large group of people a) Verbal communication b) Written communication c) Nonverbal communication d) Visual communication
11.	Which type of communication barrier occurs when there is a misunderstanding due to different interpretations of words? a) Physical barrier b) Semantic barrier c) Cultural barrier d) Emotional barrier
12.	What does the acronym "I-messages" refer to in communication? a) Messages with incorrect information b) Messages sent over the internet c) messages that express the speaker's feelings and thoughts d) Messages delivered with anger or frustration
13.	Which communication skill involves the ability to express oneself clearly and effectively? a) Listening b) Empathy c) Clarity d) Patience
14.	What is the purpose of feedback in the communication process a) To distract from the main message b) To criticize the speaker c) To provide a response to the message d) To interrupt the conversation
15.	Which nonverbal cue is often associated with confidence and authority? a) Avoiding eye contact b) Slouching posture c) Firm handshake d) Fidgeting
16.	What is the primary purpose of communication a) To persuade others b) To exchange information and ideas c) To entertain d) To assert dominance
17.	Which of the following is a crucial element of effective communication? a) Speaking without listening b) Using complex language c) Being mindful of nonverbal cues d) Avoiding eye contact
18.	Which communication mode involves the sender encoding a message, transmitting it through a channel, and the receiver decoding it? a) Linear model b) Transactional model c) Interactive model d) Inferential model

19.	What is feedback in the communication process? a) The message transmitted by the sender b) The noise in the environment the disrupts communication c) The response or reaction to the message by the receiver d) The medium through which the message is transmitted
20.	Which of the following is a barrier to effective communication a) Active listening b) Clarity in expression c) Cultural differences d) Openness and honesty
21.	What is the study of speech sounds called? a) Phonology b) Syntax c) Morphology d) Semantics
22.	Which term refers to the individual speech sound that are the building blocks of spoken language? a) Phonemes b) Morphemes c) Graphemes d) Syntax
23.	Which of the following represents the physical properties and articulation of speech sounds? a) Phonology b) Phonetics c) Syntax d) Semantics
24.	What is the term for the smallest unit of sound in a language that can distinguish one word from another? a) Phoneme b) Allophone c) Morpheme d) Grapheme
25.	Which of the following refers to the study of how sounds function within a particular language or languages a) Phonology b) Morphology c) Syntax d) Semantics
26.	What is the term for the sounds produced without significant constriction or closure in the vocal tract? a) Vowels b) Consonants c) Nasals d) Semivowels
27.	What sound is commonly mispronounced in the word "February" a) The initial "F" sound b) The "br" cluster c) The medial "r" sound d) The final "y" sound
28.	Which sound is frequently mispronounced in the word "comfortable" a) The initial "c" sound b) The "for" cluster c) The medial "t" sound d) The final "ble" cluster
29.	What sound is often mispronounced in the word "library"? a) The initial "l" sound b) The "br" cluster c) The medial "r" sound d) The final "y" sound
30.	Which sound is frequently mispronounced in the word "Wednesday"? a) The initial "W" sound b) The "dn" cluster c) The medial "n" sound d) The final "y" sound
31.	What sound is commonly mispronounced in the word "nuclear"? a) The initial "n" sound b) The "cle" cluster c) The medial "k" sound d) The final "ar" cluster
32.	How many syllables are in the word "elephant"? a) 2 b) 3 c) 4 d) 5
33.	Which of the following words has a closed syllable structure? a) "Table" b) "Open" c) "Hidden" d) "Rainbow"

34.	What is the onset in the a) "S"	e word "splash" b) "Sp"	c) "Spl"	d) "Splash"
35.	Which of the following a) "Meet"	g words has a vowel di b) "Goat"	graph c) "Play"	d) "Ball"
36.	How many syllables are a) 2	e in the word "fantastic b) 3	2" c) 4	d) 5
37.	In English, where is the a) On the first syllable c) On the penultimate s		lly placed in a word b) On the last syllable d) On the antepenult	
38.	Which word has the pr a) "Refuse" (verb) c) "Present" (verb)	b	cond syllable? b) "Refuse" (noun) d) "Present (noun)	*
39.	What does intonation r a) The emphasis placed b) The rhythm and flow c) The rise and fall of p d) The clarity of pronur	on certain syllables w of speech itch in speech		
40.	Which intonation patte a) Falling intonation c) Steady intonation	ern typically indicates a	b) Rising intonation	
41.	In a sentence like "She speaker's uncertainty of a) On "She's"			typically rise to indicate the d) At the end of the sentence
42.	Which of the following a) Verb	g is a part of speech us b) Adjective	ed to name a person, c) Noun	place, thing, or idea? d) Adverb
43.	What part of speech requestions: how, when, when			erb and usually answers the d) Preposition
44.	Which part of speech is a) Conjunction	· ·	nrases, or clauses tog c) Preposition	ether? d) Verb
45.	What is the part of special Adjective	ech that replaces a nou b)Pronoun	n and functions simi c) Adverb	larly in a sentence? d) Verb
46.	Which part of speech of a) Adjective	lescribes or modifies a b) Conjunction	noun or pronoun? c) Interjection	d) Verb
47.	What part of speech exclamation mark? a) Adjective	expresses strong feel b) Conjunction	ings or emotions and c) Interjection	nd in often followed by an d) Noun
48.	Which part of speech s a) Noun		, ,	nce? d) Adverb

49.	What is the part of sprelationship between a a) Verb			ords and usually shows the tence? d) Interjection
50.	Which part of speech in a) Adjective	modifies or describes a b) Adverb	noun or pronoun c) Preposition	d) Conjunction
51	What part of speech is a) Verb	used to represent peop b) Noun	ole, places, things, or c)Adjective	ideas? d) Adverb
52	Which article is used ba) A	pefore a singular count b) An	able noun that begins c) The	with a consonant sound? d) No article needed
53	Which article is used ba) A	pefore a singular count b) An	able noun that begins c) The	with a vowel sound? d) No article needed
54	Which article is used ba) A	pefore a plural countab b) An	le noun? c) The	d) No article needed
55	In the sentence, "She va) A	wants to buy car," b) An	which article should c) The	fill the blank? d) No article needed
56	In the sentence, "I have a) A, an	e apple and o	range," which article c) An, the	s should fill the blanks? d) No articles needed
57	Which of the following a) On	g is a preposition of pla b) After	ace c) During	d) Between
58	Which preposition is u	used to indicates mover b) In	ment from one place c) To	to another d) With
59	In the sentence, "She sa) On	satthe chair," which	h preposition should c) At	fill the blank d) Between
60	simultaneously?			reen two events occurring
	a) Since	b) Before	c) During	d) Until
61	In the sentence, "The ba) In	b) On the table,"	which preposition sh c) At	ould fill the blank d) Under
62	What tem refers to wo a) Synonyms	rds that have similar m b) Antonyms	neanings to each othe c)Homonyms	r d) Homophones
63	What type of vocabular a) Academic vocabular b) Colloquial vocabular c) Technical vocabular d) Literary vocabulary	ry	elated to a specific fie	eld or subject area?
64	Which of the following a) Synonyms	g refers to words that h b) Antonyms	nave opposite meanin c) Homonyms	gs d) Homophones

65	What term describes sometimes different pr a) Synonyms		c) Homonyms	d) Homophones
66	What is the correct qual isn't it	estion tag for the state b) aren't you	ement; "You are comi c) are you	ng to the party,?" d) do you
67	What is the appropriat a) have they	te question tag for the b) haven't they	sentence: "They have c) did they	en't arrived yet,?" d) didn't they
68	Which of the following:	ng is the correct ques	tion tag for the sente	ence: "He can speak Spanish
	a) does he	b) isn't he	c) can't he	d) can he
69	Which question tag be a) isn't she	est fits the statement: 'b) is she	'She is your friend, _ c) does she	?" d) isn't it
70	What is the appropriat a) won't you	te question tag for the b) will you	sentence: "Your will c) can't you	be there on time,?" d) would you
71	What is the term for "a) Anthropology c) Paleontology	the study of ancient ci	ivilizations"? b) Archaeology d) Sociology	
72	What is the term for "a) Anarchy	a sudden overthrow o b) Oligarchy	f a government by a s c) Monarchy	mall group of people"? d) Coup
73	What is the term for "a) Lethargic	a person who is exces b) Apathetic	sively enthusiastic or c) Fanatic	zealous"? d) Stoic
74	What is the term for "a) Affidavit	a written declaration t b) Verdict		iven under oath is true"? d) Deposition
75	What is the term for "a) Charlatan	a person who pretends b) Imposter	s to be what he or she c) Liar	is not"? d) Hypocrite
76	What is the contractio a) they've	n of "they have" b) they're	c) they'd	d) they'll
77	Which of the followin a) we're	g is the contraction of b) we've	f"we will" c) we'd	d) we'll
78	What is the contractio a) can't	n of "cannot" b) couldn't	c) can've	d) can't've
79	What does the abbreva	iation "etc." stand for b) extra	? c) especially	d) et cetera
80	What does the abbreva	iation "i.e." stand for b) for example	c) that is	d) for instance
81	Which of the followin a) Mr	g is not an abbreviation b) etc	on? c) i.e	d) is
	BY BY		6 of 8	

82	What is the correct word pair for "give and	
	a) take and givec) take but give	b) take or give d) give or take
83	Which of the following is the word pair for a) ends and odds	b) odds or ends
	c) ends but odds	d) ends but also odds
84	What is the word pair for "first and foremos a) first or foremost b) first but foremost c) first and also foremost	st"?
	d) first or second	Y
85	Which of the following is the correct word p a) by but large b) by or large c) by and also large d) by and but large	pair for "by and large"?
86	Which tense is used to describe actions that a) Present continuous c) Present perfect	are currently happening? b) Past continuous d) Past perfect
87	What tense is used to describe actions that value a) Present simple c) Future simple	will happen in the future? b) Past simple d) Present continuous
88	Which tense is used to describe actions that a) Past perfect c) Past continuous	happened before a certain point in the past? b) Present perfect d) Future perfect
89	In the sentence, "She (to read) a book y a) reads b) is reading	resterday," which tense should fill the blank? c) read d) has read
90	What tense is used to describe actions that hat a) Past simple c) Future simple	nappened at an indefinite time in the past? b) Present simple d) Present perfect
91	Which of the following sentences demonstr a) She said that she will go to the parry b) She said that she is going to the party c) She said that she would go to the party d) She said that she goes to the party	ates correct sequence of tense?
92	In reported speech, if the reporting verb is shift the verb in the reported speech? a) Present tense b) Future tense	c) Past tense d) Present perfect tense
93	What is the correct sequence of tense when a) Present tense in the reporting clause, past b) Past tense in the reporting clause, past tense c) Present tense in the reporting clause, present d) Past tense in the reporting clause, present	tense in the reported clause use in the reported clause ent tense in the reported clause

94	a) She says that she went to the store yesteb) She said that she goes to the store yesteb. She says that she has gone to the store yesteb. She said that she went to the store yesteb.	erday erday yesterday	or tense?
95	In reported speech, if the reporting verb shift the verb in the reported speech? a) Present tense b) Future tense		what tense is typically used to d) Present perfect tense
96	Which sentence is in the correct order? a) I yesterday went to the park b) Yesterday I went to the park c) Went I yesterday to the park d) To the park I went yesterday		Y PAY
97	What is the subject of the sentence: "The a) Cat b) Chased	cat chased the mouse" c) Mouse	? d) The
98	Which of the following is a pronoun? a) Run b) Jump	c) They	d) House
99	What is the past tense of the verb "to swi a) Swum b) Swam	m"? c) Swimmed	d) Swimming
100		c) On	d) Or
	Ver	-A - 8 of 8	



USN											Question Paper Version :	A
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Second Semester B.Arch/B.Plan Degree Examination, June/July 2025 Professional Writing Skills in English

[Time: 2 hrs.] [Max. Marks: 100]

1110.	[Max. Maxs. 10
	INSTRUCTIONS TO THE CANDIDATES
1.	Answer all the hundred questions, each question carries one mark.
2.	Use only Black ball point pen for writing / darkening the circles.
3.	For each question, after selecting your answer, darken the appropriate circle
	corresponding to the same question number on the OMR sheet.
4.	Darkening two circles for the same question makes the answer invalid.
5.	Damaging/overwriting, using whiteners on the OMR sheets are strictly
	prohibited.
	Choose the suitable Verb to agree with the subjects:
1.	Either my mother or my father coming to the meeting. a) is b) are c) has d) none of these
2.	Everyone of those books fiction. a) are b) is c) was d) none of these
3.	The leader as well as his brothers to the tribe. a) belongs b) belong c) belonging d) none of these
4.	The students accompanied by the teacher gone on a picnic. a) has b) have c) were d) none of these
5.	A large sum of moneystolen. a) werestolen. c) has d) none of these
	Choose the suitable Pronoun to agree with the subjects:

	a) were	b) was	c) has	a) none or
	Choose the suitable	Pronoun to agree wi	th the subjects:	
6.	Mr. Banks and Ms. Ta) his	Tukler are selling b) theirs	_ stock in the construction c) her	on company. d) their
7.	Jane Roberts is my fi a) She's	riend and mentor , b) her	helps me at all times. c) she	d) her's
8.	A person needs to se a) his	e dentist twice a b) his / her	a year. c) her	d) theirs
		τ.	7am A 1 aCO	

9.	Both of the boys inher					1\	.1
	a) their	b)	them	c)	his	a)	theirs
10.	The Washington team		·		took advantage of e		
	a) It	D)	they	c)	them	a)	those
	Fill in the blanks with	h sui	itable tenses :		Q		7
11.	Suddenly she gave a lo	oud s	scream and	_ to	the ground.		
	a) fell	b)	had fallen	c)	has fallen	d)	fell
12.	After questioning he _		to go home.				
	a) allowed	b)	was allowed	c)	had allowed	d)	allowing
13.	Although they	defe	eated, they did no	t loc	se heart.		
	a) are	b)	has been	c)/	were	d)	had
14.	The teacher asked the	boys	whether they	Y	the problems.		
	a) solved	-	has solved	c)	solving	d)	had solved
15.	The room but	the r	police failed to fin	ıd ar	ything suspicious.		
	a) searched		was searched			d)	searching
	Fill in the blanks with	h sui	itable auxiliaries	: 🛦			>
1.0		0	Y		Y	7	
16.	You must have been ri a) must	_	can		ought be tired.	d)	were
		,		,		,	
17.	That be true. I a) wouldn't		ouldn't do someth		shouldn't	d)	mustn't
10	A .		10			,	
18.	a) should		up for a moment could		would	d)	can
10			3				
19.	I will go to Chicago af a) has		have finished n	10	ork here. had	d)	having
			*	-,			<u>8</u>
20.	a) Did		shmır? Have	c)	Had	d)	Has
)	
	Choose the part of th	e se	ntence that has a	n er	ror:		
21.	Suman could not went	_					
	a) (A)		(B)		(C)		(D)
22.	I couldn't find my tenn		* *				
	a) (A)	UJ	(B)	c_j	(C)	u)	(D)

23.	I found very easy to w	ork it out (C) no error			, ,	hat
	a) (A)	b) (B)	c) (C)	u)	(D)	
	Fill in the blanks with	n the correct option :	7,3			
24.	His arrogancea) brought about		c) brought over	d)	brought up	
25.	The publishers are plana) bring up	nning toa chea b) bring out	up edition of the book. c) bring in	d)	bring down	
26.	Okay, see you t a) at	the concert. b) in	c) for	d)	none of these	
27.	The children werea) thrilled	at having been info b) thrilling	ormed about a trip. c) thrills	d)	none of these	
28.	Don't narrate st	tories, they scare me. b) ghostly	c) ghosted	d)	all of these	
29.	Ten : Decimal : :	_	, c	ĺ		
30.	a) seven : septetA woman who lives un	b) Two: Binary	c) Four : Quarter	a)	Five : Quince	
50.	a) sophomore	b) sparkan	c) sphinx	d)	spinster	
31.	The synonym of the wa) Express	vord 'Articulate' is b) Agitate	c) Coherent	d)	Adulate	
32.	Choose the correct spe a) believe	elling: b) beleive	c) beleave	d)	beeleeve	
33.	The tougher the situatian metal	ion, the greater need for b) mettle	or you to prove your c) metals	<u>d)</u>	all of these	
34.	We could not select th a) with	e boy; he wasn't real b) in	ly good english. c) at	d)	from	
35.	We could not attend that a) in spite of	ne wedding rair b) despite	ned. c) as it	d)	because of	
36.	A sentence that introdu a) Topic sentence	uces the topic or the n b) Thesis statement	nain idea to the readers c) Both (a) & (b)		none of these	
37.	A paragraph which is a) Descriptive	written after analyzing b) Analytical	g a situation is called. c) Illustrative	d)	Narrative	
38.	An essay can be divide a) 3	b) 4	c) 5 A - 3 of 8	d)	6	

39.	Reproducing the authoral Summarising		in one's ow phrasing		ords is called : Essay writing	d)	None of these	
40.	A concluding paragrapa) True	oh should b) Fals	-	oduc	ee new points.			
41.	The important parts of a) Introduction	an essay b) Bod		c)	Conclusion	d)	All of these	
42.	refers to the us a) Coherence	se of voca b) Coh		_	nmatical structures : Punctuation		text. All of these	
43.	The following is not a a) (&)	punctuati b) (,)	on mark.	c)	("")	d)	(;)	
44.	Which among the folloa) Identifying a title c) Gathering informat	_	uld not be	b)	wed while writing a Identifying the ma Poor editing and r	in p	points	
45.	Which among the folloa) Letter	owing is a b) Mer			rt Business report	d)	Only (a) & (b)	
46.	Technical reports that a) permanent	are oral in b) ephe			formal	d)	written	
47.	This process of reading a) Pre - reading				e background of the During reading		ntral idea. none of these	
48.	meaning.		ere the readin	_			d every word for its	
49.	a) SkimmingThis proposal is draftea) Solicited proposal	<i>'</i>		dvert	4 >		Extensive reading	
	c) Super solicited pro	posal	4	ď)	All of these			
50.	Choose the sentence that does not have an error:a) Does he have any idea where he is going?b) Does he have any idea what he is going?c) Does they have any idea what they us going?d) Does he have any idea where he is going?							
	Re – write the senten	ce:						
51.	The bus station was lo a) A river made of re b) The red brick with c) The bus station ma d) None of these	d brick, w a river w	ras located as located a brick was l	at the	e bus station. bus station			

52.	You've paid the rent for July, yo a) haven't b) have you	u? c) wasn't	d) was not					
53.	Hurray! completed the project. a) we've b) I've	c) they've	d) all of these					
54.	You are right in saying so. a) quite b) quiet	c) quick	d) all of these					
55.	They are of his newly acquired ric a) zealous b) jealous	thes. c) gealous	d) none of these					
	Rearrange the sentence :							
56.	Our gratitude (a) / to show (b) / we have a) dabc b) cbad	e (c) / to them (d) c) abcd	d) adeb					
57.	If you park there, you will have toa) pay b) take	a fine.	d) paid					
58.	Weight loss is a challenging task, not a a) an easy option b) a difficult ta	bed of roses. The underlined sk c) a boring job						
59.	He spends his time drinking and watchi a) rags b) use	ng TV. His no to man c) shoulders	or beast. d) pie					
60.	Tippu became the <u>heir</u> to the throne a) feminine b) masculine	c) neuter	d) none of these					
	Convert the following sentences from	active to passive voice :						
61.	Who is creating this mess?	4.5						
	a) Who has been created this mess?c) By whom that mess is being created	b) By whom was this d) By whom is this m						
62.	 You need to clean your shoes properly. a) Your shoes are needed to clean properly b) You are needed to clean your shoes properly c) Your shoes need to be cleaned properly d) Your shoes are needed by you to clean properly. 							
63.	He is said to be very rich.	1) 11 11.	. 1					
	a) He said he is very richc) People say he is very rich	b) He said it is very rid) People say it is ver						
64.	James Watt discovered the energy of steam a) The energy of steam discovered James b) The energy of steam was discovered c) James Watt was discovered by the ed d) James Watt had been discovered en	nes Watt I by James Watt. energy of steam						

65.		b) I cannot be accepted by your offer d) Your offer must be accepted
	Convert the sentence from Direct to Indirect	ect speech :
66.	He said to his father, "Please increase my po a) He told his father, please increase the pool b) He pleaded his father to increase my pool c) He requested his father to increase his pool d) All of these	cket money. ket money
67.	She said to him, "why don't you go today"? a) She asked him why he did not go that day b) She asked him not to go that day c) She asked him why he went yesterday d) All of these	
68.	"Please don't go away", she said. a) She said to please her and go away c) She begged that I not go away	b) She begged me not to go away d) All of these
69.	"I am sorry", he said. a) He apologized that he was sorry c) He cried that he was to be sorry	b) He demanded that he was sorryd) All of these
70.	"I am feeling hungry", the little boy said to hat a) The mother told the boy that she was hur b) The little boy said to his mother that he will d) All of these	ngry was hungry
	Choose the right option :	Ry V
71.	Childhood is a time when there are good parents, he is fed, looked many, had, up b) few, has, after	
72.	Life is always new things to a child. A snow. His first visit the seaside is a man a) donating, sorrow, on c) displaying, pain, in	child finds in playing in the rain or in the rvelous adventure. b) presenting, happiness, to d) none of these
73.	fights against distractions and knows he a) Poor listener b) Low listener	ow to concentrate. c) Effective listener d) None of these
74.	Which among the following is a barrier to list a) Physical b) Emotional	tening? c) Psychological d) All of these

75.	An active reader reads content with critical ea) True	evaluation and questions in mind. b) False
76.	The date on a business letter should appear a a) True	after the salutation. b) False
77.	In order to have the desired effect on the recally in proper format and relevant	ipient, how should a formal letter be?b) Grammatically correctd) All of these
78.	In business letters a salutation is generally for a) True	bllowed by a comma or a colon. b) False
79.	This format of the letter has the heading, data right aligned. a) Block format c) Informal letter	eline, complementary closure and signature b) Modified / semi block format d) None of these
80.	Which among the following is not to be mera) Educational qualificationc) Work experience	tioned in a resume : b) Strengths d) Weakness
81.	A resume is usually longer than a bio – data a) True	b) False
82.	The format of resume lists your work and job title listed first. a) Historical b) Functional	history with dates, your most recent employer c) Chronological d) Combination
83.	BCC in an email refers to: a) British council c) Brand copy carbon	b) Blind carbon copyd) Booked carbon copy
84.	This document is a brief written message of easy communication. a) Memo b) Proposal	circulated within an organization for quick and c) Profile d) CV
85.	A blog is an online journal where individu thoughts. a) True	tals or groups present a record of activities of b) False
86.	The police found a <u>human body</u> in the forest a) Corpse b) Carcass	c) Caps d) No improvement
87.	The teacher asked him to copy the material value a) after b) before	word <u>for</u> work. c) by d) No improvement
88.	do things or is being His life is there a) restricted , punished c) none of these	she wishes; he is continually being not to fore not perfectly happy. b) forbidden, penalized d) all of these A - 7 of 8

89.	Listening as a process in a) Listener b	volves) Message	c)	Environment	d) All of these
90.	Which of the following sa) The position for whichb) Skills, qualificationsc) Your interest to workd) Details of problems y	ch you are applying and experience with the organization	ion		t.
91.	more persons.	direct, written or o		communication tha Extrapersonal	t occurs between two or d) None of these
92.	Which among the follow a) being arrogant	ing must not be foll) no eye contract			ating within a group? d) all of these
93.	In a group discussion, or a) Hostility			ith Long sentences	d) Knowledge
94.	Which among the follow a) Arriving late for thec) Being formally dress	interviews	b)	wed while appearing Knowing your rest Knowledge of the	ume
95.	Which among the follow a) Lie b	ing should not be for Use slang		ved in an interview Use profanity	? d) All of these
96.	When giving a presentata) Speak loud and clearc) Dress professionally		b)	Provide handouts in Do not look at the	if needed
97.	Information in your presa) True	entation should be o		nized False	
98.	While presenting, it is in a) True	nportant to articulate	e and b)	- 1	voice
99.	A GD checks and monito a) Leadership skills b		c)	Confidence	d) All of these
100.	Communication helps m performance positively. a) True	anagement to make		urate decisions and False	influence organizational



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Second Semester B.Arch/B.Plan Degree Examination, June/July 2025 **Professional Writing Skills in English**

[Max. Marks: 100] [Time: 2 hrs.]

INSTRUCTIONS TO THE CANDIDATES

1.	Answer all the hundred questions, each question carries one mark.
2.	Use only Black ball point pen for writing / darkening the circles.
3.	For each question, after selecting your answer, darken the app

- For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.
- Darkening two circles for the same question makes the answer invalid.
- Damaging/overwriting, using whiteners on the OMR sheets are strictly

_	2 willinging, o ter ti			value silvets the strictly
	prohibited.			
	Re – write the ser	ntence:		
		7		
1.	The bus station wa	s located by a river ma	de or red brick.	
		of red brick, was locate		85°
	b) The red brick	with a river was located	d at the bus station	*
	c) The bus station	n made of red brick was	s located by a river	•
	d) None of these	> . • .	7	
	45			
2.	You've paid the re	ent for July,you'	?	
	a) haven't	b) have you	c) wasn't	d) was not
		0.3	85°	
3.		mpleted the project.	Y	
	a) we've	b) I've	c) they've	d) all of these
. ,		A V.		
4.	You are rig			1) 11 0.1
	a) quite	b) quiet	c) quick	d) all of these
_	T) C1	. 1		
5.		nis newly acquired rich		d) mana af thasa
	a) zealous	b) jealous	c) gealous	d) none of these
	Rearrange the se	ntence:		
	9	Q ₂		
6.	Our gratitude (a) /	to show (b) / we have	(c) / to them (d)	
	a) dabc	b) cbad	c) abcd	d) adcb
7.	If you park there	, you will have to	_ a fine.	
	a) pay	b) take	c) have	d) paid
	4 >			

8.	Weight loss is a challenging task, not a <u>bed of roses</u> . The underlined idiom refers to a) an easy option b) a difficult task c) a boring job d) none of these
9.	He spends his time drinking and watching TV. His no to man or beast. a) rags b) use c) shoulders d) pie
10.	Tippu became the <u>heir</u> to the throne a) feminine b) masculine c) neuter d) none of these
	Convert the following sentences from active to passive voice :
11.	Who is creating this mess? a) Who has been created this mess? b) By whom was this mess been created? c) By whom that mess is being created? d) By whom is this mess being created?
12.	You need to clean your shoes properly. a) Your shoes are needed to clean properly b) You are needed to clean your shoes properly c) Your shoes need to be cleaned properly d) Your shoes are needed by you to clean properly.
13.	He is said to be very rich. a) He said he is very rich b) He said it is very rich c) People say he is very rich d) People say it is very rich
14.	James Watt discovered the energy of steam. a) The energy of steam discovered James Watt b) The energy of steam was discovered by James Watt. c) James Watt was discovered by the energy of steam d) James Watt had been discovered energy by the steam.
15.	I cannot accept your offer. a) Your offer cannot be accepted by me b) I cannot be accepted by your offer c) The offer can be accepted by me d) Your offer must be accepted
	Convert the sentence from Direct to Indirect speech:
16.	He said to his father, "Please increase my pocket – money". a) He told his father, please increase the pocket money. b) He pleaded his father to increase my pocket money c) He requested his father to increase his pocket – money d) All of these
17.	She said to him, "why don't you go today"? a) She asked him why he did not go that day b) She asked him not to go that day c) She asked him why he went yesterday d) All of these

18.	"Please don't go away", she said.	
	a) She said to please her and go away	b) She begged me not to go away
	c) She begged that I not go away	d) All of these
19.	"I am sorry", he said.	62
	a) He apologized that he was sorry	b) He demanded that he was sorry
	c) He cried that he was to be sorry	d) All of these
20	"I f - 1: 1 4h - 1:441 - 1	this words on
20.	"I am feeling hungry", the little boy said	
	a) The mother told the boy that she wasb) The little boy said to his mother that 1	
	c) The little boy said to his mother that he	
	d) All of these	will be feeling number
	a) The or these	→
	Choose the right option:	
		**
21.		responsibilities to make life difficult. If a child
	good parents, he is fed, looked	
	a) many, had, up b) few, has, after	er c) little, have, at d) none of these
	T.O. 1	
22.		A child finds in playing in the rain or in the
	snow. His first visit the seaside is a	
	a) donating, sorrow, on	b) presenting, happiness, to
	c) displaying, pain, in	d) none of these
23.	fights against distractions and know	vs how to concentrate
20.		c) Effective listener d) None of these
	4, 1001 110011101	a) Tions of these
24.	Which among the following is a barrier to	o listening?
	a) Physical b) Emotional	c) Psychological d) All of these
	, ,	
25.	An active reader reads content with critic	*
	a) True	b) False
•		
26.	The date on a business letter should appe	
	a) True	b) False
27.	In order to have the desired effect on the	recipient how should a formal letter he?
41.	a) In proper format	b) Grammatically correct
	c) To the point and relevant	d) All of these
	c) To the point and Televant	a) Thi of these
28.	In business letters a salutation is generally	y followed by a comma or a colon.
	a) True	b) False
	*	
29.	——————————————————————————————————————	dateline, complementary closure and signature
	right aligned.	
	a) Block format	b) Modified / semi block format
	c) Informal letter	d) None of these

30.	Which among the following is not to be mentioned in a resume: a) Educational qualification b) Strengths c) Work experience d) Weakness
31.	A resume is usually longer than a bio – data. a) True b) False
32.	The format of resume lists your work history with dates, your most recent employer and job title listed first. a) Historical b) Functional c) Chronological d) Combination
33.	BCC in an email refers to : a) British council b) Functional c) Chronological d) Combination b) Blind carbon copy
	c) Brand copy carbon d) Booked carbon copy
34.	This document is a brief written message circulated within an organization for quick and easy communication.
	a) Memo b) Proposal c) Profile d) CV
35.	A blog is an online journal where individuals or groups present a record of activities of thoughts. a) True b) False
36.	The police found a <u>human body</u> in the forest.
JU.	a) Corpse b) Carcass c) Caps d) No improvement
37.	The teacher asked him to copy the material word <u>for</u> work. a) after b) before c) by d) No improvement
38.	A child has his pains; he is not free to do as he wishes; he is continually being not to do things or is being His life is therefore not perfectly happy. a) restricted, punished b) forbidden, penalized c) none of these d) all of these
39.	Listening as a process involves
	a) Listener b) Message c) Environment d) All of these
40.	 Which of the following should not be included in a cover letter? a) The position for which you are applying b) Skills, qualifications and experience c) Your interest to work with the organization
	d) Details of problems you have had with the employers in the past.
41.	communication is direct, written or oral communication that occurs between two or more persons.
	a) Intrapersonal b) Interpersonal c) Extrapersonal d) None of these
42.	Which among the following must not be followed while communicating within a group? a) being arrogant b) no eye contract c) lack of gestures d) all of these

43.	In a group discussion, one must communica) Hostility b) Ignorance	cate with c) Long sentences d) Knowledge
44.	Which among the following should not be a) Arriving late for the interviews c) Being formally dressed	b) Knowing your resumed) Knowledge of the company
45.	Which among the following should not be a) Lie b) Use slang	c) Use profanity d) All of these
46.	When giving a presentation in front of ana) Speak loud and clearc) Dress professionally	audience you should do all of the following exeptb) Provide handouts if neededd) Do not look at the audience
47.	Information in your presentation should be a) True	e organized b) False
48.	While presenting, it is important to articul a) True	ate and use of loud, clear voice b) False
49.	A GD checks and monitors a) Leadership skills b) Listening abilit	y c) Confidence d) All of these
50.	Communication helps management to male performance positively. a) True	ke accurate decisions and influence organizational b) False
	Choose the suitable Verb to agree with	the subjects:
51.		ming to the meeting. c) has d) none of these
52.	a) is b) are Everyone of those books fiction.	c) has d) none of these
32.	a) are b) is	c) was d) none of these
53.	The leader as well as his brothersa) belongs b) belong	to the tribe. c) belonging d) none of these
54.	The students accompanied by the teacher	gone on a picnic. c) were d) none of these
	a) has b) have	c) were d) none of these
55.	A large sum of money stolen. a) were b) was	c) has d) none of these
	Choose the suitable Pronoun to agree w	rith the subjects:
	W D 1 90 m 1 m	
56.	Mr. Banks and Ms. Tukler are selling a) his b) theirs	stock in the construction company. c) her d) their

57.	Jane Roberts is my fri	end a	and mentor,	hel	lps me at all times.		
	a) She's	b)	her	c)	she	d)	her's
58.	A person needs to see		dentist twice a	yea	r.		
	a) his	b)	his / her	c)	her	d)	theirs
59.	Both of the boys inher	ited	mother's red	d ha	ir.		
	a) their	b)	them	c)	his	d)	theirs
60.	The Washington team	was	opportunistic.		took advantage of	ever	v break.
	a) It	b)	they		them		those
	Fill in the blanks wit	h sui	table tenses :				
61.	Suddenly she gave a le	oud s	cream and	to	the ground.		
	a) fell		had fallen			d)	fell
62.	After questioning he		to go home.		Y		
	a) allowed			c)	had allowed	d)	allowing
63.	Although they	defe	eated they did no	t loc	ose heart		
	a) are	b)	has been	c)	were	d)	had
64.	The teacher asked the	hovs	whether they		the problems		
01.	a) solved		has solved			d)	had solved
65.	The room but	the r	volice failed to fin	d ar	nything cuenicious	7	
03.	a) searched		was searched			d)	searching
	Fill in the blanks wit	h sui	table auxiliaries	:	8		
66.	You must have been r	idine	continuously. Yo	ou	be tired.		
	a) must					d)	were
67.	That be true. 1	Нели	ouldn't do sometl	nino	like that		
07.	a) wouldn't		can't	c)	shouldn't	d)	mustn't
	()			>	2)	
68.	you mind stan	ding	up for a moment	?			
	a) should	b)	could	c)	would	d)	can
(0	I: 11 4- Clab	Ω I	Cwigh ad m		vault la aus		
69.				บง	vork nere.		
	I will go to Chicago a			-		4)	havina
	a) has		have have	-	had	d)	having
70.		b)	have	-		d)	having
	a) has	b) to Ka	have	c)			having Has
	a) has you ever been t	b) to Ka b)	have shmir? Have	c) c)	had		-
	a) has you ever been to a) Did	b) to Ka b) te sei	have shmir? Have ntence that has a	c) n e	had Had rror :	d)	Has

Ver - B - 6 of 8

72.	I couldn't find my ter	nnis racket (A) so I a	sked (B) to use hers (C) no error (D)	
	a) (A)	b) (B)	c) (C)	d) (D)	
73.	We discussed about t I found very easy to v	-		of the examination (B) that	at
	a) (A)	b) (B)	c) (C)	d) (D)	
	Fill in the blanks wi	th the correct option	ı.		
74.	His arrogancea) brought about	his ruins. b) brought out	c) brought over	d) brought up	
75.	The publishers are plant a) bring up	anning to a che b) bring out	eap edition of the book c) bring in	d) bring down	
76.	Okay, see youa) at	the concert. b) in	c) for	d) none of these	
77.	The children werea) thrilled	at having been in b) thrilling	formed about a trip. c) thrills	d) none of these	
78.	Don't narrates a) ghaskly	stories, they scare me b) ghostly	c) ghosted	d) all of these	
79.	Ten: Decimal::a) seven: septet	b) Two : Binary	c) Four : Quarter	d) Five : Quince	
80.	A woman who lives u a) sophomore		her life. c) sphinx	d) spinster	
81.	The synonym of the va) Express	word 'Articulate' is b) Agitate	c) Coherent	d) Adulate	
82.	Choose the correct sp a) believe	b) beleive	c) beleave	d) beeleeve	
83.	The tougher the situa a) metal	tion, the greater need b) mettle	for you to prove your c) metals	d) all of these	
84.	We could not select to a) with	he boy; he wasn't rea b) in	ally good english c) at	h. d) from	
85.	We could not attend to a) in spite of	the wedding rab) despite	c) as it	d) because of	
86.	A sentence that introd a) Topic sentence		main idea to the reader nt c) Both (a) & (b)	rs is d) none of these	
87.	A paragraph which is a) Descriptive	written after analyzinb) Analytical	ng a situation is called. c) Illustrative	d) Narrative	

88.	An essay can be divide a) 3	ed into parts. b) 4	c) 5	d) 6
89.	Reproducing the autho a) Summarising	r's ideas in one's own b) Paraphrasing	n words is called: c) Essay writing	d) None of these
90.	A concluding paragrap a) True	b) False	oduce new points.	
91.	The important parts of a) Introduction	an essay are: b) Body	c) Conclusion	d) All of these
92.	refers to the us a) Coherence	se of vocabulary and g b) Cohesion	grammatical structures c) Punctuation	in a text. d) All of these
93.	The following is not a a) (&)	punctuation mark. b) (,)	c) ("")	d) (;)
94.	Which among the folloa) Identifying a title c) Gathering informat	_	b) Identifying the mad) Poor editing and r	ain points
95.	Which among the folloa) Letter	owing is an informal r b) Memo	report c) Business report	d) Only (a) & (b)
96.	Technical reports that a) permanent	are oral in nature are b) ephemeral	: c) formal	d) written
97.	This process of reading a) Pre - reading	g helps to connect with b) While reading	th the background of the c) During reading	e central idea. d) none of these
98.	is a reading str meaning. a) Skimming	rategy where the read b) Intensive reading	er pays attention to each	h and every word for it d) Extensive reading
99.	This proposal is drafted a) Solicited proposal c) Super solicited pro		lvertisement or demand b) Unsolicited propo d) All of these	
100.	b) Does he have any ic) Does they have any	nat does not have an edidea where he is going idea what he is going y idea what they us going where he is going idea where he is going idea.	g? ? oing?	



USN											Question Paper Version:	C
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Second Semester B.Arch/B.Plan Degree Examination, June/July 2025 Professional Writing Skills in English

[Time: 2 hrs.] [Max. Marks: 100]

	INSTRUCTIONS TO THE CANDIDATES
1.	Answer all the hundred questions, each question carries one mark.
2.	Use only Black ball point pen for writing / darkening the circles.
3.	For each question, after selecting your answer, darken the appropriate circle
	corresponding to the same question number on the OMR sheet.
4.	Darkening two circles for the same question makes the answer invalid.
5.	Damaging/overwriting, using whiteners on the OMR sheets are strictly
	prohibited.
	Choose the right option :
1.	Childhood is a time when there are responsibilities to make life difficult. If a child good parents, he is fed , looked and loved. a) many , had , up b) few , has , after c) little , have , at d) none of these
2.	Life is always new things to a child. A child finds in playing in the rain or in the snow. His first visit the seaside is a marvelous adventure. a) donating, sorrow, on b) presenting, happiness, to
	a) donating, sorrow, onb) presenting, happiness, toc) displaying, pain, ind) none of these
3.	fights against distractions and knows how to concentrate. a) Poor listener b) Low listener c) Effective listener d) None of these
4. 4	Which among the following is a barrier to listening? a) Physical b) Emotional c) Psychological d) All of these
5.	An active reader reads content with critical evaluation and questions in mind. a) True b) False
,	The data on a haring at 1 Manufaculti anness of a site as betation

6. The date on a business letter should appear after the salutation.

a) True

b) False

7. In order to have the desired effect on the recipient, how should a formal letter be?

a) In proper format

b) Grammatically correct

c) To the point and relevant

d) All of these

8.	In business letters a salutation is generally for a) True	llowed by a comma or a colon. b) False
9.	This format of the letter has the heading, dat right aligned. a) Block format c) Informal letter	b) Modified / semi block format d) None of these
10.	Which among the following is not to be men a) Educational qualification c) Work experience	tioned in a resume : b) Strengths d) Weakness
11.	A resume is usually longer than a bio – data. a) True	b) False
12.	and job title listed first.	history with dates, your most recent employer c) Chronological d) Combination
13.	BCC in an email refers to: a) British council c) Brand copy carbon	b) Blind carbon copyd) Booked carbon copy
14.	This document is a brief written message ceasy communication. a) Memo b) Proposal	irculated within an organization for quick and c) Profile d) CV
15.	A blog is an online journal where individu thoughts. a) True	als or groups present a record of activities or b) False
16.	The police found a <u>human body</u> in the forest a) Corpse b) Carcass	c) Caps d) No improvement
17.	The teacher asked him to copy the material va) after b) before	vord <u>for</u> work. c) by d) No improvement
18.	A child has his pains; he is not free to do as do things or is being His life is therefa) restricted, punished c) none of these	
19.	Listening as a process involves a) Listener b) Message	c) Environment d) All of these
20.	Which of the following should not be included. a) The position for which you are applying b) Skills, qualifications and experience c) Your interest to work with the organization d) Details of problems you have had with the Verience.	on

21.		ation is direct, written	or oral communic	ation that o	occurs between two or
	more persons.			Y	
	a) Intrapersonal	b) Interpersonal	l c) Extraperso	nal d) None of these
22.	Which among the	following must not be	e followed while co	mmunicati	no within a oroun?
22.	a) being arrogant		act c) lack of ges) all of these
	u) comg un cgun	o) no eje comun	0) 01 800		, •••• ••••••
23.	In a group discuss	ion, one must commu	nicate with		
	a) Hostility	b) Ignorance	c) Long sente	ences d) Knowledge
	,		, 0		,
24.		following should not	be followed while	appearing f	or an interview?
		for the interviews	b) Knowing	5 /	
	c) Being formall	y dressed	d) Knowledg	ge of the co	mpany
25	W/1.:-1 41	C-11	1		
25.		following should not) All of these
	a) Lie	b) Use slang	c) Use profar	iity u) All of these
26.	When giving a pre	esentation in front of a	n audience vou sho	ould do all o	of the following exept
20.	a) Speak loud an		b) Provide h		
	c) Dress professi		d) Do not loo		
		,	,		
27.	Information in yo	ur presentation should	be organized		
	a) True	~~	b) False		

28.		it is important to artic		id, clear vo	oice
	a) True	25	b) False		
29.	A GD checks and	monitors			
<i>29</i> .		lls b) Listening abi	lity c) Confidence	e d) All of these
	u) Zuuurisiip sii	e) Estima	(Communication	5	, 1111 01 111000
30.	Communication h	elps management to n	nake accurate decis	ions and in	fluence organizational
	performance posit	ively.			
	a) True		b) False		
			*		
	Re - write the se	ntence :	4 >		
31.	The bus station w	as located by a river n	ade or red brick		
J1.	/	of red brick, was locat	7	n	
	· /	with a river was locate			
		n made of red brick w			
	d) None of these		us recurred by write	-	
32.	You've paid the re	ent for July, you	u?		
	a) haven't	b) have you	c) wasn't	d) was not
22	TT 1	1 . 1 . 1			
33.		ompleted the project.	a) than?	1) all of these
	a) we've	b) I've	c) they've	a) all of these
34.	You are rig	tht in saying so.			
J-T.	a) quite	b) quiet	c) quick	d) all of these
	") 1	-/ 1	Vor C 3 of Q	u	,

35.	They are of his n	ewly acquired riches				
•	a) zealous	b) jealous	c)	gealous	d) n	one of these
	Rearrange the senten	co :		2		
	Real range the senten					
36.	Our gratitude (a) / to sl	how (b) / we have (c)) / to	them (d)	_	
	a) dabc	b) cbad	(c)	abcd	d) a	adeb
27	TC	711.1.				
37.	If you park there, you a) pay	b) take		ne. have	d) p	aaid
	a) pay	b) take	C)	Have	u) ļ	Jaiu
38.	Weight loss is a challe	nging task, not a bed	of r	oses. The underlined	d idioi	m refers to
	_	b) a difficult task				one of these
20	TT 1.1.	1. 1 . 1 5	DX 7		,	
39.	He spends his time dri				or bea	
	a) rags	b) use		shoulders	u) p	nie
40.	Tippu became the heir	to the throne	Y			
	a) feminine	b) masculine	c)	neuter	d) r	none of these
		A	_			
	Convert the following	g sentences from act	ive	to passive voice:		
41.	Who is creating this m	ess?				
71.	a) Who has been crea		b)	By whom was this	mess	been created?
	c) By whom that mes		d)			
		Y	2			
42.	You need to clean your	1 1 -		4 >		
		eded to clean properly		25		
		clean your shoes pro be cleaned properly		y		
		eded by you to clean		erly.		
		0.3		Q ₂		
43.	He is said to be very ri			**		
	a) He said he is very		b)	He said it is very r		
Ó	c) People say he is ve	тупсп	u)	People say it is ver	y HCH	1
44.	James Watt discovered	I the energy of steam				
	a) The energy of steam	m discovered James	Wat	t		
	A 45/	m was discovered by				
		scovered by the energy				
	d) James Watt had be	en discovered energy	y by	me steam.		
45.	I cannot accept your of	ffer.				
~ •	a) Your offer cannot		b)	I cannot be accepted	ed by	your offer
	c) The offer can be ac	ccepted by me	d)	Your offer must be	accep	ted

Convert the sentence from Direct to Indirect speech:

46.	He said to his father, "Please increase my pocket – money". a) He told his father, please increase the pocket money. b) He pleaded his father to increase my pocket money c) He requested his father to increase his pocket – money					
	d) All of these			4,		
47.	She said to him, "why a) She asked him why			S)		
	b) She asked him not		·,			
	c) She asked him why		So ^y			
	d) All of these		Y			
		^*	4			
48.	"Please don't go away		1) 0001			
	a) She said to please		b) She begged me	not to go away		
	c) She begged that I r	not go away	d) All of these			
49.	"I am sorry", he said.					
77.	a) He apologized that	he was sorry	b) He demanded t	hat he was sorry		
	c) He cried that he wa		d) All of these			
50.	"I am feeling hungry",	-				
		e boy that she was hu		A .		
	-	to his mother that he				
	c) The little boy toldd) All of these	his mother that he wi	in be leeling nungry			
	d) All of these					
	Fill in the blanks with	the correct option				
	25 ⁷					
51.	0	his ruins.	•			
	a) brought about	b) brought out	c) brought over	d) brought up		
52.	The publishers are plan	nning to a ches	ap edition of the bool	ζ.		
<i>52</i> .	a) bring up		c) bring in	d) bring down		
	") 8 ")	<i>a)</i>		
53,	Okay, see you t	he concert.	Y			
	a) at	b) in	c) for	d) none of these		
54.	The children were	at having been inf	_	1) (1)		
	a) thrilled	b) thrilling	c) thrills	d) none of these		
55.	Don't narrate st	ories, they scare me.				
55.		b) ghostly	c) ghosted	d) all of these		
	u) glastiy	o) ghostij	c) Briested	a) an or mose		
56.	Ten: Decimal::	_				
	a) seven : septet	b) Two: Binary	c) Four : Quarter	d) Five : Quince		
57.	A woman who lives un			: (
	a) sophomore	b) sparkan	c) sphinx	d) spinster		
		V	ver - C - 5 of 8			

58.	The synonym of the value a) Express	vord 'Articulate' is b) Agitate	c) Coherent	d) Adulate
59.	Choose the correct spea) believe	elling : b) beleive	c) beleave	d) beeleeve
60.	The tougher the situat a) metal	ion, the greater need b) mettle	for you to prove your c) metals	d) all of these
61.	We could not select that a) with	ne boy; he wasn't rea b) in	ally good english.	d) from
62.	We could not attend to a) in spite of	he wedding ra b) despite	ined. c) as it	d) because of
63.	A sentence that introd a) Topic sentence		main idea to the readers nt c) Both (a) & (b)	is d) none of these
64.	A paragraph which is a) Descriptive	written after analyzii b) Analytical	ng a situation is called. c) Illustrative	d) Narrative
65.	An essay can be divid a) 3	ed into parts.	c) 5	d) 6
66.	Reproducing the authoral Summarising	*	wn words is called : c) Essay writing	d) None of these
67.	A concluding paragra a) True	ph should always into b) False	roduce new points.	Q '
68.	The important parts o a) Introduction	f an essay are : b) Body	c) Conclusion	d) All of these
69.	refers to the u a) Coherence	se of vocabulary and b) Cohesion	grammatical structures c) Punctuation	in a text. d) All of these
70.	The following is not a a) (&)	punctuation mark. b) (,)	c) (" ")	d) (;)
71.	Which among the foll a) Identifying a title c) Gathering informa	20	followed while writing a b) Identifying the ma d) Poor editing and r	ain points
72.	Which among the foll a) Letter	owing is an informal b) Memo	report c) Business report	d) Only (a) & (b)
73.	Technical reports that a) permanent	are oral in nature are b) ephemeral	e: c) formal	d) written
74.	This process of reading a) Pre - reading	b) While reading	rith the background of th c) During reading Ver - C - 6 of 8	e central idea. d) none of these

75.	is a reading streaming.	rategy where the reade	er pays attention to each	and every word for its
	a) Skimming	b) Intensive reading	g c) Scanning	d) Extensive reading
76.	This proposal is drafte a) Solicited proposal c) Super solicited pro		lvertisement or demand. b) Unsolicited propos d) All of these	sal
77.	c) Does they have an		g? ? ping?	
	Choose the suitable \	Verb to agree with th	e subjects:	
78.	Either my mother or n a) is	ny father comi b) are	ing to the meeting. c) has	d) none of these
79.	Everyone of those boo a) are	b) is fiction.	c) was	d) none of these
80.	The leader as well as labelongs	his brothers to b) belong	the tribe. c) belonging	d) none of these
81.	The students accompa a) has	nied by the teacher b) have	gone on a picnic	d) none of these
82.	A large sum of money a) were	stolen. b) was	c) has	d) none of these
	Choose the suitable I	Pronoun to agree wit	h the subjects:	
83.	Mr. Banks and Ms. Tu	ıkler are selling	stock in the construction	on company
3.	a) his	b) theirs	c) her	d) their
84.	Jane Roberts is my frie			
	a) She's	b) her	c) she	d) her's
85.	A person needs to see a) his	dentist twice a b) his / her	year. c) her	d) theirs
86.	Both of the boys inher a) their	ited mother's reb b) them	d hair. c) his	d) theirs
87.	The Washington team a) It	was opportunistic, b) they	took advantage of e	every break. d) those

Fill in the blanks with suitable tenses:

88.	Suddenly she gav	ve a loud so	cream and	to	the ground.		
			had fallen			d)	fell
89.	After questioning	o he	to go home		,		
0,	a) allowed	b)	was allowed	c)	had allowed	d)	allowing
90.	Although they	defe	ated they did no	ot loa	se heart	B,	
	a) are	b)	has been	c)	were	d)	had
91.	The teacher asked	d the boys	whether they		the problems.		
	a) solved	b)	has solved	c)	solving	d)	had solved
92.	The room	but the po	olice failed to fi	nd aı	nything suspicious	S.	
	a) searched	b)	was searched	c)	had searched	d)	searching
	Fill in the blank	s with suit	able auxiliarie	s :			
93.	You must have b	een riding	continuously Y	7011	he tired		
<i>,</i> .	a) must	b)	can	c)	ought	d)	were
94.	That be t	rue He wo	ouldn't do some	thing	like that		
, . .	a) wouldn't					d)	mustn't
05		1 -4 40	<u> </u>	40	, Y '		>
95.	a) should		up for a momen could		would	4)	can
	a) should	<i>(</i>)	Could		Would	u)	cuii
96.	I will go to Chica			my w	ork here.		
	a) has	b)	have	c)	had	d)	having
97.	you ever b	seen to Kas	hmir?		A .		
<i>71</i> .		b)		c) /	Had	d)	Has
		C	V				
	Choose the part	of the sen	tence that has	an e	ror:		
98.	Suman could not	went (A)	to picnic beca	nse (B) his mother wa	as sick	(C) no error (D)
	a) (A)		(B)	c)			(D)
99.	I couldn't find m	v tennis ra	cket (A) so Las	sked i	(B) to use hers (C	7) no	error (D)
<i>,</i>	a) (A)	b)			(C)	-	(D)
	7		*		·		•
100.	We discussed abo	out the pro	blem so thorou	ghly	(A) on the eve of	f the e	examination (B) that
	I found very easy						,
	a) (A)	b)	(B)	c)	(C)	d)	(D)



USN										Question Paper Version:	D
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Second Semester B.Arch/B.Plan Degree Examination, June/July 2025 Professional Writing Skills in English

[Time: 2 hrs.] [Max. Marks: 100]

INSTRUCTIONS TO THE CANDIDATES

- 1. Answer all the hundred questions, each question carries one mark.
- 2. Use only Black ball point pen for writing / darkening the circles.
- 3. For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.
- 4. Darkening two circles for the same question makes the answer invalid

4.	Darkening two chees for	the same questi	ion i	nakes me	answei	mvam	J.	
5.	Damaging/overwriting,	using whiten	ers	on the	OMR	sheets	are	strictly
	prohibited.							
	Fill in the blanks with th	e correct option	:		Y			
_	***					4		
1.	His arrogance his a) brought about b)		c)	brought o	over	d) b	rought	up
2.	The publishers are planning	ng to a chea	an eo) lition of th	ne book	,		
2.	-	bring out	-		10 000K.	d) bi	ring do	wn
3.	Okay, see you the c	concert.			•			
	3 ,	in	c)	for		d) no	one of	these
4	TI NII			Q ₂	, .			
4.		at having been inf thrilling		ed about a thrills	ı trip.	d) no	one of	these
	a) uniffication	unimig	>	tili ilis		u) III		inose
5.	Don't narrate storie	es, they scare me.						
	a) ghaskly b)	ghostly	c)	ghosted		d) al	l of the	ese
6.	Ten: Decimal::							
0.		Two: Binary	c)	Four · Ou	arter	d) F	ive : Q	uince
	<i>a) bo (an , bop (a)</i>	* * * * * * * * * * * * * * * * * * *	•,	1001. 20		•••)	.,	
7.	A woman who lives unma							
	a) sophomore b)	sparkan	c)	sphinx		d) s	pinster	
8.	The synonym of the word	'Articulate' is						
.			c)	Coherent		d) A	dulate	
		_						
9.	Choose the correct spellin	~	`	1 1		1) 1	1	
	a) believe b)	beleive		beleave 1 of 8		a) be	eeleeve	;
		v C1 -	υ-	1 01 0				

10.	The tougher the situat a) metal	ion, the greater need f b) mettle	for you to prove your _ c) metals	d) all of these
11.	We could not select that a) with	ne boy; he wasn't real b) in	lly good english.	d) from
12.	We could not attend that in spite of	ne wedding raii b) despite	ned. c) as it	d) because of
13.	A sentence that introd a) Topic sentence		main idea to the readers t c) Both (a) & (b)	is d) none of these
14.	A paragraph which is a) Descriptive	written after analyzin b) Analytical	g a situation is called. c) Illustrative	d) Narrative
15.	An essay can be divid a) 3	ed into parts. b) 4	c) 5	d) 6
16.	Reproducing the authoral Summarising	or's ideas in one's ow b) Paraphrasing	/	d) None of these
17.	A concluding paragrapa) True	ph should always intro b) False	oduce new points.	
18.	The important parts of a) Introduction	f an essay are : b) Body	c) Conclusion	d) All of these
19.	refers to the u a) Coherence	se of vocabulary and b) Cohesion	grammatical structures c) Punctuation	in a text. d) All of these
20.	The following is not a a) (&)	punctuation mark. b) (,)	c) ("")	d) (;)
21.	Which among the followal Identifying a title c) Gathering information		followed while writing a b) Identifying the ma d) Poor editing and n	ain points
22.	Which among the folloa) Letter	owing is an informal ab) Memo	report c) Business report	d) Only (a) & (b)
23.	Technical reports that a) permanent	are oral in nature are b) ephemeral	: c) formal	d) written
24.	This process of readin a) Pre - reading		th the background of th c) During reading	e central idea. d) none of these
25.		rategy where the read	er pays attention to eac	h and every word for it
	meaning. a) Skimming	b) Intensive reading	g c) Scanning	d) Extensive reading

26.	This proposal is drafted in respo			
	a) Solicited proposalc) Super solicited proposal		Unsolicited proposal All of these	
	, .			
27.	Choose the sentence that does not a) Does he have any idea where b) Does he have any idea what c) Does they have any idea what d) Does he have any idea where	the is going? he is going? t they us going?		<i>></i>
	Choose the suitable Verb to ag	ree with the sub	jects:	
28.	Either my mother or my father _a) is b) are	coming to c)		none of these
29.	Everyone of those books a) are b) is	fiction.	was d)	none of these
30.	The leader as well as his brother a) belongs b) belong			none of these
31.	The students accompanied by the a) has b) have	teacherc) v	gone on a picnic. were d)	none of these
32.	A large sum of money stole a) were b) was	n.	has d)	none of these
	Choose the suitable Pronoun to	agree with the	subjects:	
33.	Mr. Banks and Ms. Tukler are sea) his b) their		k in the construction cher d)	ompany. their
34.	Jane Roberts is my friend and m a) She's b) her	entor, helps		her's
			,	IICI S
35.		tist twice a year. her c) h		theirs
36.	Both of the boys inheriteda) theirb) them	mother's red hair c) h		theirs
37.	The Washington team was oppoa) It b) they	tunistic,t		ry break. those
	Fill in the blanks with suitable	tenses :		
38.	Suddenly she gave a loud scream a) fell b) had to			fell

39.	After questioning he			
	a) allowed b)	was allowed	c) had allowed	d) allowing
40.	Although they def	eated, they did no	t loose heart.	
		has been	c) were	d) had
41.	The teacher asked the boy a) solved b)	s whether they has solved	the problems. c) solving	d) had solved
42.	The room but the a) searched b)			d) searching
	Fill in the blanks with su	itable auxiliaries	:	
43.	You must have been riding a) must b)	g continuously. Yo	ou be tired.	d) were
44.	That be true. He was a) wouldn't b)		hing like that. c) shouldn't	d) mustn't
45.	you mind standing a) should b)	g up for a moment could	? c) would	d) can
46.	I will go to Chicago after I a) has b)	finished n	ny work here. c) had	d) having
47.	you ever been to Ka	ashmir? Have	c) Had	d) Has
	Choose the part of the se	entence that has a	nn error :	
48.	Suman could not went (A) a) (A) b)			
49.	I couldn't find my tennis r a) (A) b)	acket (A) so I ask (B)	ced (B) to use hers (C) c) (C)	no error (D) d) (D)
50.	We discussed about the property of the propert			the examination (B) that
	a) (A) b)	(B)	c) (C)	d) (D)
	Choose the right option:			
51.	Childhood is a time when good parents, he is fo		-	e life difficult. If a child
	a) many, had, up b)	few, has, after	c) little, have, at	d) none of these
52.	Life is always new to snow. His first visit to a) donating , sorrow , on	_		
	c) displaying, pain, in	¥ 7	d) none of these	

53.	fights against d a) Poor listener	istractions and know b) Low listener	s how to concentrate c) Effective list	
54.	Which among the fol a) Physical	lowing is a barrier to b) Emotional	o listening? c) Psychologica	d) All of these
55.	An active reader read a) True	,		,
56.	The date on a busines a) True	ss letter should appea	ar after the salutation b) False	n. •
57.	In order to have the day In proper format	lesired effect on the	25	
	c) To the point and	relevant	d) All of these	ny concer
58.	In business letters a s a) True	alutation is generally	followed by a com b) False	ma or a colon.
59.	right aligned.	ter has the heading,		ntary closure and signature
	a) Block formatc) Informal letter	8	d) None of these	emi block format e
60.	Which among the fol a) Educational quali c) Work experience		b) Strengths d) Weakness	ne:
61.	A resume is usually la) True	onger than a bio – d	b) False	>
62.	The format of and job title listed fir a) Historical		ork history with dat c) Chronologica	es, your most recent employer al d) Combination
63.	BCC in an email refe a) British council c) Brand copy carbo		b) Blind carbord) Booked carb	1.0
64.	This document is a leasy communication.		e circulated within	an organization for quick and
	a) Memo	b) Proposal	c) Profile	d) CV
65.	A blog is an online thoughts. a) True	journal where indiv	iduals or groups pr b) False	resent a record of activities or
66.	The police found a h	iman hody in the for	,	
vv.	a) Corpse	b) Carcass	c) Caps	d) No improvement

67.	The teacher asked him a) after	to copy the material b) before	word <u>for</u> wo c) by	ork.	d) No improver	nent
68.	A child has his pains do things or is being a) restricted, punish c) none of these	His life is there	fore not per	fectly happy lden, penaliz		_ not to
69.	Listening as a process a) Listener	involves b) Message	c) Enviro	nment	d) All of these	
70.		which you are applying ons and experience ork with the organizat	tion	,	i.	
71.	communication more persons. a) Intrapersonal	b) Interpersonal	oral commu		d) None of thes	
72.	Which among the foll a) being arrogant	owing must not be fol b) no eye contract	All and a second		ating within a gro d) all of these	up?
73.	In a group discussion, a) Hostility	one must communica b) Ignorance		entences	d) Knowledge	
74.	Which among the foll a) Arriving late for c) Being formally dr	the interviews	b) Know	ile appearing ing your resu ledge of the o	ime	?
75.	Which among the foll a) Lie	owing should not be f b) Use slang			d) All of these	
76.	When giving a presen a) Speak loud and cl c) Dress professiona	ear	b) Provid	should do all le handouts is t look at the	f needed	g exept
77.	Information in your p a) True	resentation should be	organized b) False			
78.	While presenting, it is a) True	important to articulat	te and use of b) False		voice	
79.	A GD checks and mo a) Leadership skills	nitors b) Listening ability	c) Confide	ence	d) All of these	
80.	Communication helps performance positivel a) True	y.	b) False D - 6 of 8		influence organiz	zational

Re – write the sentence:

81.	 The bus station was located by a river mad a) A river made of red brick, was located b) The red brick with a river was located c) The bus station made of red brick was d) None of these 	at the bus station. at the bus station	
	d) None of these	Y	
82.	You've paid the rent for July, you?		
	a) haven't b) have you	c) wasn't	d) was not
83.	Hurray! completed the project.	25	Y
	a) we've b) I've	c) they've	d) all of these
84.	You are right in saying so.		
	a) quite b) quiet	c) quick	d) all of these
85.	They are of his newly acquired riches	Š.	
	a) zealous b) jealous	c) gealous	d) none of these
	Rearrange the sentence :		
0.0) / 4 11 (1)	
86.	Our gratitude (a) / to show (b) / we have (c a) dabc b) cbad	c) / to them (d) c) abcd	d) adcb
	a) dabe b) coad	c) abcu	u) auco
87.	If you park there, you will have to	a fine	
	a) pay b) take	c) have	d) paid
) I
88.	Weight loss is a challenging task, not a bec	d of roses. The und	erlined idiom refers to
	a) an easy option b) a difficult task	c) a boring job	d) none of these
00			1 ,
89.	He spends his time drinking and watching		
	a) rags b) use	c) shoulders	d) pie
90.	Tippu became the heir to the throne		
<i>,</i> 0.	a) feminine b) masculine	c) neuter	d) none of these
	S' A' &	•	,
	Convert the following sentences from ac	tive to passive voi	ice:
Λ1	Why is an disc this way?		
91.	Who is creating this mess? a) Who has been created this mess?	b) By whom w	as this mess been created?
	c) By whom that mess is being created?	-	this mess being created?
	e) By whom that mess is being created.	a) by whom is	tins mess being created.
92.	You need to clean your shoes properly.		
	a) Your shoes are needed to clean properly	ly	
	b) You are needed to clean your shoes pro	• •	
	c) Your shoes need to be cleaned properly		
	d) Your shoes are needed by you to clean	properly.	

- 93. He is said to be very rich. b) He said it is very rich a) He said he is very rich c) People say he is very rich d) People say it is very rich James Watt discovered the energy of steam. 94. a) The energy of steam discovered James Watt b) The energy of steam was discovered by James Watt. c) James Watt was discovered by the energy of steam d) James Watt had been discovered energy by the steam. 95. I cannot accept your offer.
- - a) Your offer cannot be accepted by me
- b) I cannot be accepted by your offer
- c) The offer can be accepted by me
- d) Your offer must be accepted

Convert the sentence from Direct to Indirect speech:

- He said to his father, "Please increase my pocket money". 96.
 - a) He told his father, please increase the pocket money.
 - b) He pleaded his father to increase my pocket money
 - c) He requested his father to increase his pocket money
 - d) All of these
- She said to him, "why don't you go today"? 97.
 - a) She asked him why he did not go that day
 - b) She asked him not to go that day
 - c) She asked him why he went yesterday
 - d) All of these
- 98. "Please don't go away", she said.
 - a) She said to please her and go away
 - c) She begged that I not go away
- b) She begged me not to go away
- d) All of these

- 99. "I am sorry", he said.
 - a) He apologized that he was sorry
 - c) He cried that he was to be sorry
- b) He demanded that he was sorry
- d) All of these
- **100.** "I am feeling hungry", the little boy said to his mother.
 - a) The mother told the boy that she was hungry
 - b) The little boy said to his mother that he was hungry
 - c) The little boy told his mother that he will be feeling hungry
 - d) All of these



USN 21E	ENG2
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Second Semester B.Arch. Degree Examination, June/July 2025 **Building Structure - I**

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

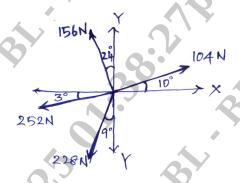
- a. What is concrete? What are properties of concrete. What are the advantages and disadvantages of concrete? (10 Marks)
 - b. Explain briefly the various types of load act on a structure with neat sketch. (10 Marks)

OF

- 2 a. A RCC beam of size 300mm × 450mm and a length of 10m having unit weight of RCC 25 KN/m³, calculate the dead load. (06 Marks)
 - b. Differentiate between wind load and seismic load. (06 Marks)
 - c. Write important properties of wood, aluminium, glass and steel. (08 Marks)

Module-2

- 3 a. What is a force? What are the characteristics of force. (10 Marks)
 - b. Determine the resultant in magnitude and direction for the forces shown in fig. Q.3(b).



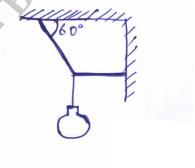
(10 Marks)

Fig. Q.3(b)

OK

4 a. Explain free body diagram with 3 examples.

- (10 Marks)
- b. A lamp weighing 5N is suspended from the ceiling by a chain. It is pulled aside by a horizontal cord until the chain makes an angle of 60° with ceiling as shown in fig. Q 4(b). Find the tensions in the chain and the cord.



(10 Marks)

Fig. Q.4 (b)

5 a. Explain a couple. List the characteristics of couple.

(10 Marks)

b. Find the resultant of the force system shown in fig. Q.5(b) in magnitude direction and position with respect to A.

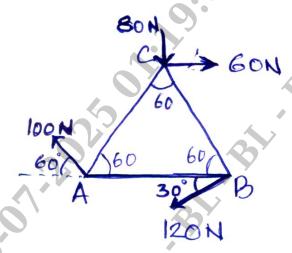


Fig. Q.5(b)

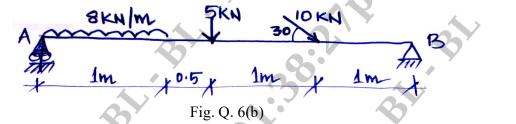
(10 Marks)

ØR

6 a. Explain the different types of support, load and beam.

(10 Marks)

b. Determine the support reaction for the beam shown in fig. Q. 6(b)



Module-4

- 7 a. Explain the following terms
 - i) Center of gravity
 - ii) Centroid
 - iii) Axis of symmetry
 - iv) Radius of gyration

(08 Marks)

(10 Marks)

b. Find the centroid of T –section shown in fig. Q.7(b).

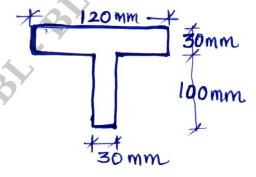


Fig. Q. 7 (b)

(12 Marks)

OR

- 8 a. State parallel axis theorem and perpendicular axis theorem with neat sketch and formula.
 - b. Find the moment of inertia of the given session about the horizontal centroidal axis.

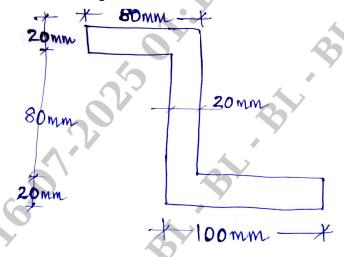


Fig. Q.8(b)

(12 Marks)

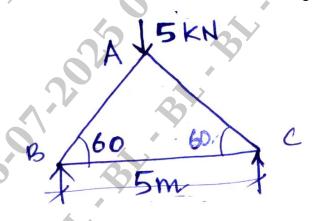
Module-5

- 9 a. Explain with neat sketch.
 - i) Perfect frame
 - ii) Deficient frame
 - iii) Redundant frame

(06 Marks)

(04 Marks)

- b. What are the assumptions made in the analysis of truss.
 - Find the forces in the members AB, AC, BC of truss shown in fig. Q.9(c)



(10 Marks)

Fig. Q.9 (c)

10 a. Explain with neat sketch method of joints.

(10 Marks)

b. Determine the forces in all members of the truss shown in fig. Q. 10(b).

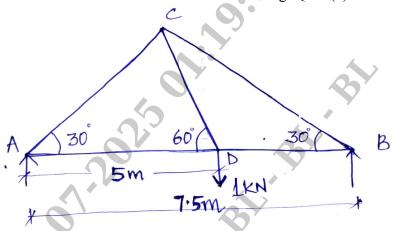


Fig. Q.10(b)

(10 Marks)

4 of 4

CBCS SCHEME

USN						Question Paper Version:	A

First Semester B.Arch./B.Plan. Degree Examination, June/July 2025 Innovation and Design Thinking

Time: 1 hr.] [Max. Marks: 50

	INSTRUCTIONS TO THE CANDIDATES
1.	Answer all the fifty questions, each question carries one mark.
2.	Use only Black ball point pen for writing / darkening the circles.
3.	For each question, after selecting your answer, darken the appropriate circle
	corresponding to the same question number on the OMR sheet.
4.	Darkening two circles for the same question makes the answer invalid.
5.	Damaging/overwriting, using whiteners on the OMR sheets are strictly
	prohibited.
1.	Design thinking typically helps in a) Innovation b) Financial planning c) Data analytics d) Operational efficiency
2.	Design thinking is a process of a) Thinking about design b) Designing ways in which people think c) Asking users to solve problems d) Defining, framing and solving problems from users perspective.
3.	Which of the following is best suited to produce more innovative design solutions? a) Mono disciplinary and untrained teams b) Mono disciplinary and trained teams c) Multidisciplinary and untrained teams d) Multidisciplinary and trained teams
4.	To empathize, one has to a) Observe b) Engage c) Listen d) All of these
5.	When defining a problem, your problem statement should include a solution? a) True b) False c) Do not know d) None of these
6.	The second step in design thinking process is to a) Test b) Define c) Ideate d) Prototype
7.	The final step in design thinking process is to a) Test b) Define c) Ideate d) Prototype
8.	Design thinking involves a) Result based approach c) Technology based approach d) Solution based approach d) Business based approach

9.	Which of the following is part of the tool k a) Tabulation b) Story telling	t of a Design Thinker? c) Derivation d) Calculation	
10.	Prototype can be built for a) Products b) Financial services	c) Urban projects d) All of these	
11.	Preparing and representing project informa a) Journey mappingc) Prototyping	ion in the form of stories, map and imag b) Visualization d) Value chain analysis	ge is
12.	"Innovation begins with the eye" indicates a) Ability to draw c) Ability to observe	which quality of Design Thinker. b) Ability to think d) Sharp eyesight	
13.	What does Teamwork indicates? a) Collective ownership c) Hierarchy in the system	b) Collaborative efforts d) Both (a) & (b)	
14.	The first step of customer journey mapping a) Define b) Negotiate	is c) Compare d) Select	
15.	"Experience Economy" has resulted in a) Passive consumption c) Minimum consumption	b) Active participationd) No participation	
16.	Innovation in an organization should be a) Technology driven c) Organization driven	b) Customer drivend) Economics driven	
17.	Disruptive innovation results due to a) Lack of technology application c) Lack of human centered analysis	b) Substandard quality / serviced) Lack of investment	
18.	Agile methodology involved a) Sprints b) No iteration	c) Profit d) None of thes	se
19.	approach is used for designing compa) Scenario based prototyping c) Both (a) & (b)	lex software systems. b) BPM d) None of these	
20.	is type of collaboration where partogether to reach a certain GOAL. a) Cloud computing c) Distributed collaboration	ticipants regardless of their location , b) Off-line class d) None of these	work
21.	Which of the following is not tools of Designal Co-creation b) Prototyping	gn thinking? c) Mind mapping d) On-line mark	ceting
22.	Value chain analysis examines how an org new offerings. a) Produce b) market	anization interacts with value chain partn c) distribute d) all of these	iers to

23.	 A hypothesis is a) Statement indicating the profitability of co b) The delivery time of a product c) Conjecture of background support origina d) None of these 	03
24.	In value – chain analysis client activity includ a) Order - taking c) Software development	es : O) Scheduling O) All of these
25.	Which of the following give functional appear a) Prototype b) 3D model co	rance of a product? d) Drawings
26.	, 1	tell about them". The phrase indicates the User experience I) Importance of narration
27.	/ 11	is statement emphasizes.) Standardization l) Product development
28.	Product Installation, Repair and maintenance a) Inbound logistics b) Operations	are part of Outbound logistics d) Services
29.	The 3 dimensions of collaboration in Agile are a) Awareness, Articulation, Appropriation b) Articulation, Annotation, Awareness	
30.	1	llowing: Distributors Both (a) & (b)
31.	"The willingness to try something by building a) Story telling b) prototyping contains a story telling by prototyping by prototyping by building a story telling by prototyping by building a story telling by prototyping by building a story telling by building by building by building by building a story telling by building	it is the evidence of experimentation".) Mind mapping d) Conceptualizing
32.	Narrating design with time as sequence of eve a) Mind mapping b) Journey mapping of	
33.	doing it". Stated by	y is found not in finishing an activity but in Paul Rand d) Tim brown
34.	Non – verbal communication includes a) Facial expression b) Visual Gaze) Bodily movements d) All of these
35.	Business challenge : : Growth : : Design think a) Sensing b) Story telling co	cing approach : Strategic foresight d) Humanization
36.	,	ber EATS, is an example of) Horizontal Market expansion) Franchising

a) Growth b) Sensing c) Humanization d) Value redefinition 38. Why does Business need strategic foresight? a) To help to prevent or prepare for surprises. b) To positively influence and support innovation c) To empower and engage d) All of these 39. Rapid prototyping is a unique technique to for the development of new products. a) Reduce the lead time b) To reduce costs c) Both (a) & (b) d) None of these 40. Rapid prototyping encompasses of a) Prototype b) Review c) Refine and Iterate d) All of these 41. Expand TBPM. a) Tangible Business Process Modelling b) Towards Business Process Modelling c) None of these 42. BPM replaced the organisations previous effective packages. a) Time and Movement Study b) Total Quality Management c) Both (a) and (b) d) None of these 43. Agile methods are so popular in a) Software Industry b) Textile Industry c) Manufacturing Industry d) Cement Industry 44. Which of the following is not an activity in the planning stage during the design thinking work shop? a) Learning Goals b) Pre - meeting c) Prototyping d) Development 45. Collecting is an important portion of testing a prototype in the test stage of design thinking. a) Pictures b) Money c) Feedback d) E - mails 46. Which of the firm mentioned is associated the most with design thinking? a) I Kea b) I deo c) I dea d) Ikei 47. Design thinking process can be applied in any profession / any area / any field. a) True b) False c) Cannot say d) None of these 48. Which of the following is an example of innovation? a) Paper Art b) Giant wheel c) Telephone d) All of these 49. What is design considerations not linked with? a) Products b) Services c) Business d) Computers 50. Design thinking supports in developing product features to improve the services to the customers. a) Yes b) No c) Cannot say d) None of these	37.		and every strategy ne		-		
a) To help to prevent or prepare for surprises. b) To positively influence and support innovation c) To empower and engage d) All of these 39. Rapid prototyping is a unique technique to a) Reduce the lead time c) Both (a) & (b) 40. Rapid prototyping encompasses of a) Prototype b) Review c) Refine and Iterate d) All of these 41. Expand TBPM. a) Tangible Business Process Modelling c) None of these d) Both (a) & (b) 42. BPM replaced the organisations previous effective packages. a) Time and Movement Study c) Both (a) and (b) d) None of these 43. Agile methods are so popular in a) Software Industry d) Cement Industry e) Manufacturing Industry d) Cement Industry 44. Which of the following is not an activity in the planning stage during the design thinking work shop? a) Learning Goals b) Pre - meeting c) Prototyping d) Development 45. Collecting is an important portion of testing a prototype in the test stage of design thinking. a) Pictures b) Money c) Feedback d) E - mails 46. Which of the firm mentioned is associated the most with design thinking? a) I Kea b) I deo c) Idea d) Ikei 47. Design thinking process can be applied in any profession / any area / any field. a) True b) False c) Cannot say d) None of these 48. Which of the following is an example of innovation? a) Paper Art b) Giant wheel c) Telephone d) All of these 49. What is design considerations not linked with? a) Products b) Services c) Business d) Computers 50. Design thinking supports in developing product features to improve the services to the customers.		a) Growth	b) Sensing	c)	Humanization	d)	Value redefinition
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	50.	customers.	1 2 1		-		



USN 21MAT11

First Semester B.E./B.Tech. Degree Examination, June/July 2025 Calculus and Differential Equations

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. With usual notations prove that $\tan \phi = r \frac{d\theta}{dr}$. (06 Marks)
 - b. Show that the curves $r = a(1 + \sin \theta)$ and $r = a(1 \sin \theta)$ intersect each other orthogonally. (07 Marks)
 - c. Find the radius of curvature of the curve $\sqrt{x} + \sqrt{y} = 4$ at point (4, 4). (07 Marks)

OF

- 2 a. Find the angle between the radius vector and the tangent for the curve $r^{m} = a^{m} (\cos m\theta + \sin m\theta)$ (06 Marks)
 - b. Find the pedal equation of the curve

$$\frac{2a}{r} = 1 + \cos\theta. \tag{07 Marks}$$

c. Show that the radius of curvature of the curve $r^n = a^n \cos \theta$. (07 Marks)

Module-2

3 a. Obtain the Maclaurin's expansion of " $\log(1 + e^x)$ " upto fourth degree terms. (06 Marks)

b. If
$$u = f\left(xz, \frac{y}{z}\right)$$
 prove that $x\frac{\partial u}{\partial x} - y\frac{\partial u}{\partial y} - z\frac{\partial u}{\partial z} = 0$. (07 Marks)

c. Show that $f(x, y) = x^3y^2(1 - x - y)$ for x, y # 0 is maximum at the point $\left(\frac{1}{2}, \frac{1}{3}\right)$ and find maximum value. (07 Marks)

OR

- 4 a. Evaluate: i) $\lim_{x\to 0} (1+\sin x)^{\cot x}$ ii) $\lim_{x\to 0} \left(\frac{1}{x}\right)^{\tan x}$ (06 Marks)
 - b. Find the total derivative of u = xy + yz + zx where $x = t \cos t$, $y = t \sin t$, z = t. (07 Marks)

c. If
$$u = x^2 + y^2 + z^2$$
, $v = xy + yz + zx$, $w = x + y + z$.
Find $\frac{\partial (u, v, w)}{\partial (x, y, z)}$. (07 Marks)

5 a. Solve
$$\frac{dy}{dx} + \frac{y}{x} = y^2x$$
. (06 Marks)

- b. Find the orthogonal trajectory of Cardioids $r = a (1 \cos \theta)$. (07 Marks)
- c. Solve $p^2 + py x (x + y) = 0$. (07 Marks)

6 a. Solve
$$(6x^2 + 4y^3 + 12y)dx + 3x(1 + y^2) = 0$$
 (06 Marks)

- b. A cup of coffee at 80°C is placed in a room with temperature 20°C and it cools to 50°C in 5 minutes. Find its temperature after a further interval of 5 minutes.
- c. Show that the equation $xp^2 + px py + 1 y = 0$ is Clairaut's equation and general solution. (07 Marks)

7 a. Solve
$$\frac{d^3y}{dx^3} + 2\frac{d^2y}{dx^2} + \frac{dy}{dx} = 3e^{-x}$$
. (06 Marks)

b. Solve
$$(D^2 + 4D + 8)y = x + 1$$
. (07 Marks)

c. Using method of variation of parameters solve (07 Marks)

8 a. Solve
$$\frac{d^2y}{dx^2} + 3\frac{dy}{dx} + 2y = \cos 2x$$
 (06 Marks)

b. Solve
$$4y'' - y = e^{2x}$$
. (07 Marks)

c. Solve the Cauchy's differential equation
$$x^2y'' + xy' + 9y = \sin(3 \log x)$$
. (07 Marks)

Find the rank of the matrix (06 Marks)

b. Test for consistency and solve

$$5x_1 + x_2 + 3x_3 = 20$$

 $2x_1 + 5x_2 + 2x_3 = 18$

$$3x_1 + 2x_2 + x_3 = 14$$

(07 Marks)

21MAT11

c. Solve the system of equations

$$5x + 2y + z = 12$$

$$x + 4y + 2z = 15$$

$$x + 2y + 5z = 20$$

Using Gauss – Seidel iteration method. Carryout four iterations taking (1, 0, 3) as initial approximate root. (07 Marks)

- 10 a. Find the rank of the matrix $\begin{bmatrix} 1 & 0 & 2 & -2 \\ 2 & -1 & 0 & -1 \\ 1 & 0 & 2 & -1 \\ 4 & -1 & 3 & -1 \end{bmatrix}$ (06 Marks)
 - b. Solve the system of equations

$$2x + 5y + 7z = 52$$

$$2x + y - z = 0$$

$$x + y + z = 9$$

using Gauss – Jordan method.

(07 Marks)

c. Find the dominant eigen value and the corresponding eigen vector of $A = \begin{bmatrix} 2 & -1 & 0 \\ -1 & 2 & -1 \\ 0 & -1 & 2 \end{bmatrix}$

by using Rayleigh's power method, taking initial vector as $[1, 1, 1]^T$

(07 Marks)



USN 21MAT21

Second Semester B.E./B.Tech. Degree Examination, June/July 2025 Advanced Calculus and Numerical Methods

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Evaluate:

$$\int_{0}^{2} \int_{0}^{6} \int_{0}^{4-x^{2}} dz dy dx$$
 (06 Marks)

- b. Change the order of integration and hence evaluate $\int_{0}^{1} \int_{\sqrt{x}}^{1} (1+y) dy dx$ (07 Marks)
- c. Define Beta and Gama function. Prove that $\beta(\frac{1}{2}, \frac{1}{2}) = \pi$ (07 Marks)

Find the area between the parabolas y^2

 $y^2 = 4ax$ and $x^2 = 4ay$, using double integration. (06 Marks)

b. Derive the relation between Beta and Gama function. (07 Marks)

c. Find the volume of the tetrahedron in the first octant bounded by 4x + 2y + z = 8, using

double integration. The tetranedron in the first octant bounded by 4x + 2y + z = 8, using the double integration.

Module-2

3 a. A fluid motion is given by $\vec{v} = (y\sin z - \sin x)\hat{i} + (x\sin z + 2yz)\hat{j} + (xy\cos z + y^2)\hat{k}$ show that the motion is irrotational. (06 Marks)

b. Find div(\vec{v}) and curl(\vec{v}) of $\vec{v} = (xyz)\hat{i} + (3x^2y)\hat{j} + (xz^2 - y^2z)\hat{k}$ at (2, -1, 1) (07 Marks)

Find the directional derivative of the function $\phi = x^2 - y^2 + 2z^2$ at the point P(1, 2, 3) in the direction of the vector $4\hat{i} - 2\hat{j} + \hat{k}$ (07 Marks)

OR

- 4 a. If a force $\vec{F} = 2x^2y\hat{i} + 3xy\hat{j}$ displays a particle in the xy-plane from (0, 0) to (1, 4) along the curve $y = 4x^2$. Find the work done. (06 Marks)
 - b. Using Green's theorem, evaluate $\int_C (xy x^2) dx + x^2 y dy$ where C is bounded by y = 0, x = 1 and y = x.
 - c. Evaluate $\int_{C} \vec{F} \cdot \vec{dr}$ by Stoke's theorem, where $\vec{F} = (x^2 + y^2)\hat{i} 2xy\hat{j}$ and C is the boundary of the rectangle $x = \pm a$, y = 0 and y = b. (07 Marks)

- 5 a. Form partial differential equation by eliminating the arbitrary function from $z = f(x^2 + y^2)$. (06 Marks)
 - b. Solve $\frac{\partial^2 z}{\partial y^2} + \frac{\partial z}{\partial y} 6z = 0$, given that z = x and $\frac{\partial z}{\partial y} = 0$, when y = 0. (07 Marks)
 - c. With usual notations derive a one-dimensional heat equation. (07 Marks)

OR

- 6 a. Solve: z = yq xp (06 Marks)
 - b. Form the partial differential equation from Z = f(y + 2x) + g(y 3x) (07 Marks)
 - c. Solve: $\frac{\partial^2 z}{\partial x \partial y} = x^2 y$ subject to the conditions $z(x, 0) = x^2$ and $z(1, y) = \cos y$. (07 Marks)

Module-4

- 7 a. Find a real toot of $x \tan x = -1$ in (2.5, 3) by Regula-Falsi method in four iterations. (06 Marks)
 - b. Apply Newton's general interpolation formula to find u_x . Given that $u_0 = 8$, $u_1 = 11$, $u_4 = 68$, $u_5 = 123$. (07 Marks)
 - c. Evaluate $\int_{0}^{3} x^{4} dx$ by Simpson's $\left(\frac{1}{3}\right)^{rd}$ rule. (take n = 6). (07 Marks)

OR

- 8 a. Using Newton-Raphson method, find real root of $4x e^x = 0$ which is near to 2. (06 Marks)
 - b. Using Simpson's $\left(\frac{3}{8}\right)^{th}$ rule, evaluate $\int_{0}^{0.3} \sqrt{1-8x^3} dx$ (n=6) (07 Marks)
 - c. In the following table, values of y are consecutive terms of a series of which 23.6 is the 6th term. Find the first and tenth terms of the series:

			III S C CCI	ici (Ciii		o or the	BOUTOR
X	3	4	5	6	7	8	9
у	4.8	8.4	14.5	23.6	36.2	52.8	73.9

(07 Marks)

Module-5

- 9 a. Employ Taylor's series method, to find y(0.1) from $\frac{dy}{dx} = y + e^{2x}$ with y(0) = 1 upto 3^{rd} degree term. (06 Marks)
 - b. Apply the Runge-Kutta method of 4th order find y at x = 0.1. Given that $\frac{dy}{dx} = y + x^3$; y(0) = 1, (h = 0.1) (07 Marks)

c. Find y(0.4) using Milne's predictor-corrector method, given $y' = \frac{(1+x^2)y^2}{2}$; y(0) = 1, y(0.1) = 1.06, y(0.2) = 1.12, y(0.3) = 1.21 (07 Marks)

OR

10 a. Use Tayler's series method to find y(0.1).

Given
$$\frac{dy}{dx} = y + \sin x$$
: $y(0) = 1$ up to the term containing x^3 . (06 Marks)

b. Using Modified Euler's method find y(0.1), taking h = 0.05, given that

$$\frac{dy}{dx} = x^2 + y : y(0) = 1$$
 (07 Marks)

c. Given $\frac{dy}{dx} = \frac{y-x}{y+x}$: y(0) = 1, find y(0.2) taking h = 0.2, using Runge Kutta 4th order method. (07 Marks)

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First/Second Semester B.E./B.Tech. Degree Examination, June/July 2025 **Engineering Physics**

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

- 2. Draw neat sketches wherever necessary.
- 3. Physical Constants: Speed of light $C = 3 \times 10^8 \text{ ms}^{-1}$,

 Boltzmann constant $K = 1.38 \times 10^{-23} \text{ J/K}$, Planck's constant $h = 6.625 \times 10^{-34} \text{ JS}$, Acceleration due to gravity g = 9.8 m/s, Permittivity of free space $\epsilon_0 = 8.854 \times 10^{-12} \text{ Fm}^{-1}$, $e = 1.6 \times 10^{-19} \text{ C}$

- Define simple harmonic motion and mention any two examples. Derive the differential equation using Hooke's law.
 - b. With a neat diagram, explain the construction and working of Reddy shock tube. Mention any three applications of shock waves.
 - For a particle executing SHM, its acceleration is found to be 15 cm/s² when it is at 3 cm from its mean position. Calculate time period. (04 Marks)

OR

- What are damped oscillations? Discuss the theory of damped oscillations. 2 (09 Marks)
 - What is a shock wave? Mention the properties of shockwaves.

(07 Marks)

The distance between the two pressure sensors in a shock tube is 150 mm. The time taken by a shock wave to travel this distance is 0.3 ms. If the velocity of sound under the same condition is 340 m/s. Find the Mach number of the shock wave. (04 Marks)

Module-2

- State the assumptions of Planck's radiation law. Show how Planck's law could be reduced to 3 Wien's law and Rayleigh – Jeans law.
 - State Heisenberg's uncertainty principle. Show that electron doesn't exist inside the nucleus by this principle. (07 Marks)
 - c. An electron is bound in an one dimensional potential well of width 1Å, but of infinite wall height. Find its energy values in the ground state also in the first two excited states.

(04 Marks)

- Assuming the time independent Schrodinger's wave equation discuss the solution for a particle in one dimensional potential well of infinite height and hence obtain the normalized wave function. (10 Marks)
 - b. Explain the nature of black body radiation spectrum with neat diagram.
 - c. A particle having mass 0.5 Mev/c² has a kinetic energy of 100 eV. Calculate the de-Broglie wavelength, where C is the velocity of light. (04 Marks)

- 5 a. Explain the construction and working of semiconductor laser with the help of necessary neat diagram. (08 Marks)
 - b. Describe different types of optical fibers with neat diagrams. Mention any two advantages of optical fiber communication. (08 Marks)
 - c. The ratio of population of two energy levels is 1.059×10^{-30} . Find the wavelength of light emitted by spontaneous emissions at 330 K. (04 Marks)

OF

- 6 a. Derive an expression for energy density of radiation under equilibrium, in terms of Einstein's coefficients. (09 Marks)
 - b. With neat diagram, explain the working of intensity based displacement sensor using optical fiber. (07 Marks)
 - c. Estimate the attenuation in an optical fiber of length 500 m when a light signal of power 100 mW emerges out of fiber with a power 90 mW. (04 Marks)

Module-4

- 7 a. Mention any four assumptions of classical free electron theory and discuss the success of quantum free electron theory. (10 Marks)
 - b. Describe in brief the various types of polarization mechanisms. (06 Marks)
 - c. The intrinsic charge carrier concentration of germanium is $2.4 \times 10^{19}/\text{m}^3$, calculate its resistivity if mobility of electrons and holes respectively are $0.39\text{m}^2/\text{vs}$ and $0.19\text{m}^2/\text{vs}$.

(04 Marks)

OR

- 8 a. What is Hall effect? Obtain the expression for the Hall coefficient. (08 Marks)
 - b. Deduce the expression for electrical conductivity of a conductor using the quantum free electron theory of metals. (08 Marks)
 - c. The dielectric constant of sulphur is 3.4. Assuming a cubic lattice for its structure, calculate the electronic polarizability of sulphur (given, density of sulphur = 2.079/cc and atomic weight = 32.07). (04 Marks)

Module-5

- 9 a. Explain the construction and working of X-ray diffractometer. Mention the applications.
 (10 Marks)
 - b. Explain briefly nanocomposite with example and applications.

c. Determine the wave length of X-rays for crystal size of 1.188×10^{-6} m, peak width is 0.5° and peak position 30° for a cubic crystal. Given Scherrer's constant K = 0.92. (05 Marks)

OR

- 10 a. With a neat diagram, explain the principle construction and working of atomic force microscope. (10 Marks)
 - b. Define nano material and classify the nanomaterials on the dimensional constraints.

(05 Marks)

(05 Marks)

c. First order Bragg reflection occurs when a monochromatic beam of X-rays of wavelength 0.675A° is incident on a crystal at a glancing angle of 4°51'. What is the glancing angle for third order Bragg reflection to occur? (05 Marks)

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First/Second Semester B.E./B.Tech. Degree Examination, June/July 2025 **Engineering Physics**

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

- 2. Draw neat sketches wherever necessary.
- 3. Physical Constants: Speed of light $C = 3 \times 10^8 \text{ ms}^{-1}$,

 Boltzmann constant $K = 1.38 \times 10^{-23} \text{ J/K}$, Planck's constant $h = 6.625 \times 10^{-34} \text{ JS}$, Acceleration due to gravity g = 9.8 m/s, Permittivity of free space $\epsilon_0 = 8.854 \times 10^{-12} \text{ Fm}^{-1}$, $e = 1.6 \times 10^{-19} \text{ C}$

- Define simple harmonic motion and mention any two examples. Derive the differential equation using Hooke's law.
 - b. With a neat diagram, explain the construction and working of Reddy shock tube. Mention any three applications of shock waves.
 - For a particle executing SHM, its acceleration is found to be 15 cm/s² when it is at 3 cm from its mean position. Calculate time period. (04 Marks)

OR

- What are damped oscillations? Discuss the theory of damped oscillations. 2 (09 Marks)
 - What is a shock wave? Mention the properties of shockwaves.

(07 Marks)

The distance between the two pressure sensors in a shock tube is 150 mm. The time taken by a shock wave to travel this distance is 0.3 ms. If the velocity of sound under the same condition is 340 m/s. Find the Mach number of the shock wave. (04 Marks)

Module-2

- State the assumptions of Planck's radiation law. Show how Planck's law could be reduced to 3 Wien's law and Rayleigh – Jeans law.
 - State Heisenberg's uncertainty principle. Show that electron doesn't exist inside the nucleus by this principle. (07 Marks)
 - c. An electron is bound in an one dimensional potential well of width 1Å, but of infinite wall height. Find its energy values in the ground state also in the first two excited states.

(04 Marks)

- Assuming the time independent Schrodinger's wave equation discuss the solution for a particle in one dimensional potential well of infinite height and hence obtain the normalized wave function. (10 Marks)
 - b. Explain the nature of black body radiation spectrum with neat diagram.
 - c. A particle having mass 0.5 Mev/c² has a kinetic energy of 100 eV. Calculate the de-Broglie wavelength, where C is the velocity of light. (04 Marks)

- 5 a. Explain the construction and working of semiconductor laser with the help of necessary neat diagram. (08 Marks)
 - b. Describe different types of optical fibers with neat diagrams. Mention any two advantages of optical fiber communication. (08 Marks)
 - c. The ratio of population of two energy levels is 1.059×10^{-30} . Find the wavelength of light emitted by spontaneous emissions at 330 K. (04 Marks)

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- 6 a. Derive an expression for energy density of radiation under equilibrium, in terms of Einstein's coefficients. (09 Marks)
 - b. With neat diagram, explain the working of intensity based displacement sensor using optical fiber. (07 Marks)
 - c. Estimate the attenuation in an optical fiber of length 500 m when a light signal of power 100 mW emerges out of fiber with a power 90 mW. (04 Marks)

Module-4

- 7 a. Mention any four assumptions of classical free electron theory and discuss the success of quantum free electron theory. (10 Marks)
 - b. Describe in brief the various types of polarization mechanisms. (06 Marks)
 - c. The intrinsic charge carrier concentration of germanium is $2.4 \times 10^{19}/\text{m}^3$, calculate its resistivity if mobility of electrons and holes respectively are $0.39\text{m}^2/\text{vs}$ and $0.19\text{m}^2/\text{vs}$.

(04 Marks)

OR

- 8 a. What is Hall effect? Obtain the expression for the Hall coefficient. (08 Marks)
 - b. Deduce the expression for electrical conductivity of a conductor using the quantum free electron theory of metals. (08 Marks)
 - c. The dielectric constant of sulphur is 3.4. Assuming a cubic lattice for its structure, calculate the electronic polarizability of sulphur (given, density of sulphur = 2.079/cc and atomic weight = 32.07). (04 Marks)

Module-5

- 9 a. Explain the construction and working of X-ray diffractometer. Mention the applications.
 (10 Marks)
 - b. Explain briefly nanocomposite with example and applications.
 - c. Determine the wave length of X-rays for crystal size of 1.188×10^{-6} m, peak width is 0.5° and peak position 30° for a cubic crystal. Given Scherrer's constant K = 0.92. (05 Marks)

OR

- 10 a. With a neat diagram, explain the principle construction and working of atomic force microscope. (10 Marks)
 - b. Define nano material and classify the nanomaterials on the dimensional constraints.

(05 Marks)

(05 Marks)

c. First order Bragg reflection occurs when a monochromatic beam of X-rays of wavelength 0.675A° is incident on a crystal at a glancing angle of 4°51'. What is the glancing angle for third order Bragg reflection to occur? (05 Marks)

* * * * *

CBCS SCHEME

21SFH29

US	N												Ç	Quest	tion F	aper V	/ersi	on : A	4
Se	econd	l Se	me	ste	r B	. A 1	rch	./B	.Pla	ın.	Deg	gree .	Exa	ımir	atio	n, Ju	ne/J	uly 20	025
				,	Sc	ier	ntii	fic	F	ur	nda	tio	n o	f H	eal	th	>		
Tim	ne: 1 h	r.								4						N	Лах.	Marks	s: 50
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	INSTRUCTIONS TO THE CANDIDATES																		
				_						_					,				
1.	Ans	swe	r all	the	fift	y qı	ıest	ions	, ea	ch q	uest	ion ca	irries	s one	mark	ζ.			
2.	Use	e on	ly B	lac	k ba	ıll p	oin	t pe	n fo	r wı	riting	g / dar	rken	ing tl	ne cir	cles.			
3.	For	r ea	ch c	ques	stio	n, a	fter	sel	ecti	ng y	our	answ	er,	dark	en th	e appr	opri	ate cir	cle
	cor	resj	pon	dinş	g to	the	sar	ne q	ues	tion	nui	nber	on t	he C	MR	sheet.			
4.	Da	rken	ing	two	cir	cles	for	the	sam	ie qi	uesti	on ma	akes	the a	nswe	r inval	id.		
5.	Da	mag	ging	/ove	erw	ritiı	ng,	usi	ng	wh	itene	ers o	n t	he	OMR	sheet	s ar	e stri	etly
	pro	hibi	ted.										A	6,		_			
1.	Obesity	is c	aus	ed b	y an	inc	reas	e in					57			00			
a	a) adip	osity	I		-	b) (epid	osity	7		c)	edipo	sity		d)	apidosi	ty		
2. V	Which	of tl	he fo	ollov	ving	g hea	alth	com	proi	nisiı	ng st	yle ma	akes	use o	of the	patient'	's kno	wledg	e and
	experie					Y	: .	_4:	_					4	6				
	i) Doci o) Patie				- 7				1	0	7				7				
c) Prac	titio	ner -	- cer					atio	n				>					
d	l) Non	e of	thes	e				9	<i>></i>			<i>*</i>	Y	*					
3. V	Which	yea	ır di	id t	he '	worl	ld h	ealtl	1 01	gan	izatio	n firs	st ex	xpres	ses tl	ne right	t to	health	as a
	iundan i) 1946		ıl hu	man	rig		1952	,			2	1007			47	2000			
					C	()					C)	1987			a)	2000			
	The wo			th da	ay is					,	·	cth o	. 4 . 1.		1)	10th D	1.		
a	1) 1 st M	ıarcı	n		>	b)	/ P	pril	R	,	c)	6 th O	ctobe	er	a)	10 th De	cemb	er	
	Cleanli		, ph	ysic	al ex			7	,						10	.			
a	ı) Hyg	iene				b) .	Phys	sical	hyg	iene	e c)	Socia	al hy	giene	d)	Persona	al hyg	giene	
	Which				llov	ving	is a	n un	heal	thy									
	ı) Shar	_			4							Bath	_		•	سے او	da.		
C	c) Drin	KIII g	, 001	iea v	wate	1					a)	caun	ig Wi	ıııoul	wasn	ing han	us		
	Which				ving	con	npon	ents	are	maj									
	ı) Carb	•				1_						Lipid			teins				
С	e) Vita	mins	anc	ı mı	nera	IS					a)	All o	r the	se					

8.	Which of the following human body? a) Proteins	g food components is b) Vitamins	required for the gro c) Minerals	wth and maintenance of the d) Both a and b	
9.	Which of the following a) Milk	g food products are the b) Egg	best sources of anima	al proteins? d) All of these	
10.	Egg is a rich source of a) Proteins	b) Minerals	c) Vitamins	d) All of these	
11.	Guava, Lemon, Orange a) Vitamin A	and Tomato are rich i b) Vitamin B	nc) Vitamin C	d) Vitamin D	
12.	The most significant an a) Iron	nd essential mineral req b) Sodium	uired for our body is c) Calcium	d) All of these	
13.	Alcohol consumption h a) Liver cirrhosis c) Stroke	as been linked to	b) High blood pleas d) All of these	sure	
14.	Which of the following a) Food environment c) Individual psycholog	^	nt in explaining obes b) Physical activity d) All of these		
15.	Communication is a pa a) Soft	rt of skills b) Hard	c) Rough	d) Technical	
16.	Having good mental health means that you a) Can deal appropriately with sadness b) Can deal and solve problems with little trouble c) Show respect for other people always d) Share your true feelings with your friends always				
17.	Mindfulness is the only a) Mental health	technique that increas b) Physical health		d) All of these	
18.	Health enables people a) Achieve physical fits b) Enjoy life and feel co c) Fight with diseases d) All of these	ness	Sy Sy		
19.	Health plays an importa	ant role in feeling b) Happy	c) Anger	d) Ok	
20.	Mindfulness simply me a) Past	eans playing attention t b) Present	o c) Future	d) all of these	
21.	The term means a) Social health	keeping clean to preve b) Wellness	ent the spread of disea c) Hygiene	ase. d) Refusal skills	
22.	To achieve good health a) Regular exercises b) Consume appropriat c) Eat regularly health d) All of these	e amount of water meals	ould do $A - 2$ of 4		

22	DMI stand for						
23.	BMI stand for	1) D. 1. M T. 1					
	a) Body Material Index	b) Body Mass Index	•				
	c) Body Mass Indicator	d) None of these					
2.4	E . ' 1' 1						
24.	Eating disorders are	1) 5, 11					
	a) Anorexia Nervoasa	b) Bulimia Nerevoas	sa				
	c) Binge Eating Disorder	d) All of these					
			^				
25.	Fruits are rich in		Q ₂ ^y				
	a) More sugar more fibre	b) Less sugar less fil					
	c) Less sugar more fibre	d) More sugar less fi	ibre				
26.	Advantages of using more water is	Q 5	Y				
	a) Regulating body temperature						
	b) Maintaining electrolyte balance						
	c) Carrying nutrients and oxygen to your cells						
	d) All of these	25					
		Y					
27.	Body mass index is calculated by taking	*					
	a) Height and Weight of the body						
	b) Only weight of the body	O'					
	c) Only height of the body	7					
	d) None of these						
28.	Reasons for lung cancer is						
	a) Drinking Alcohol b) Smoking	c) Sleeping	d) Exercise				
	4 >	0. 7					
29 .	Health is a goal and is the active proces	_	45 ′				
	a) Health b) Wellness	c) Fitness	d) Physical				
• •	(TTTT-01)	2	× .				
30.	"WHO" stands for						
	a) World Hormany Organization	,*)				
	b) Wellness and Health Organization						
	c) Wellness and Health Office						
	d) World Health Organization						
31.	1 1	or good health					
	a) Junk b) Gobi-Manchuri	c) Proteins	d) Species				
22	3370 24 1 4 1 111 14 14 14 1	1 1: 0					
32.	What helps to build and maintain bones, musc		D.D.				
	a) Food b) Water	c) Air	d) Proteins				
22	Esting of at least aroung of fruits and us	actables man day madu	your the might of NCD's (Non-				
33.			ices the risk of NCD's (Non				
	Communicable Diseases) and helps to ensure						
	a) 200 b) 300	c) 400	d) 500				
34.	Salt intake to the recommended level of less th	nan grams per	day				
J4.		c) 15					
	a) 5 b) 10	C) 13	d) 20				
35.	An apple a day						
<i>JJ</i> .	a) Keeps the doctor away						
	b) Keeps all your trouble away						
	c) Keeps your family away						
	d) Keeps you awake whole day	2 of 1					
	Ver-A-3 of 4						

36.	Which vitamin is good a) Vitamin D	for eyes? b) Vitamin K	c) Vitamin A	d) Vitamin B	
37.	The interpretation of th a) Coding	e message is b) Decoding	c) Recoding	d) Ecoding	
38.	Which Vitamin is good a) Vitamin A	for bones? b) Vitamin C	c) Vitamin K	d) Vitamin D	
39.	Wearing seat belts, banning of smoking, avoiding drugs, heroin, cocaine, alcohol are examples for				
	a) Social Engineeringc) Software Engineerin	g 07,3	b) Civil Engineerin d) Hardware Engin		
40.	All addictions are part (a) Physical	of disorders b) Personal	c) Mental	d) General	
41.	SUD's means a) Substance Use Disor c) Societal Used Disor		b) Social Disorders d) Substance Under		
42.	Addiction is a complex a) Lungs	, but treatable disease b) Heart	that affects fu c) Kidney	nction and behaviour d) Brain	
43.	Anxiety, depression, cognitive dysfunction, a) Physical			s due to substance abuse, h issues d) General	
44.	${a) \text{ Virus}}$ are one celled on	eganisms that can be se b) Bacteria	een only with a micro c) Fungi	scope d) All of these	
45.	diseases are defined broadly as conditions that last for one year or more and required ongoing medical attention				
16	a) Acute	b) Chronic	c) Short term	d) General	
46.	components ofa) Quality of life	b) Quantity of life	c) Chronic life	disease or treatment are the d) Acute life	
47.	Health is a state ofa) Well being	b) Good for nothing	c) Well for none	d) disease	
48.	Alcohol and drugs redu a) Self – control	and increase b) dependency	risky behaviours c) disease	d) failure	
49.	or country			erson, community, company	
50.	a) HealthWhich diseases are calla) Inherited	b) Wellnessed as inborn diseases?b) Infected	c) Wealthc) Contagious	d) Fitness d) Congenital	

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					2	21SFH29
USN				Que	stion Paper Ve	rsion : B
Sec	ond Seme	ster B.Arch	./B.Plan. D	egree Exami	nation, June	 /July 2025
Sec				lation of H	-	oury 2020
					00	
Time	: 1 hr.		6		Max	x. Marks: 50
		INSTR	UCTIONS T	TO THE CAN	DIDATES	
					*	
1.	Answer all t	the fifty quest	ions, each que	estion carries one	e mark.	
2.	Use only Bl	ack ball poin	t pen for writi	ing / darkening t	he circles.	
3.	For each qu	uestion, after	selecting you	ur answer, darl	ken the approp	riate circle
	correspond	ling to the sai	ne question n	umber on the C	OMR sheet.	
4.	Darkening t	wo circles for	the same que	stion makes the	answer invalid.	
5.	Damaging/	overwriting,	using white	eners on the	OMR sheets	are strictly
	prohibited.	3,				•
1	Fill a quarter	of your plate w	ith food	s for good health	A .	
	a) Junk		obi-Manchuri	c) Proteins	d) Species	
2	What helps to	build and mai	ntain bones, m	uscles and skin?	*	
	a) Food	b) V	Vater	c) Air	d) Proteins	3
3	Eating of at le			vegetables per da	•	
	(Non Commu	unicable Diseas	ses) and helps	to ensure an ade	quate daily intak	e of dietary
	a) 200	b) 3	00	c) 400	d) 500	
4	Salt intake to	the recommen	ded level of les		ns per day	
	a) 5	b) 1	0	c) 15	d) 20	
5	An apple a da					
	a) Keeps the	doctor away our trouble aw	0.17			
		r family away	ay			
	d) Keeps you	awake whole o	lay 🗸			
6	Which vitami	in is good for e	ves?			
	a) Vitamin D		itamin K	c) Vitamin A	d) Vitamir	ı B
7	The interpreta	ation of the me	ssage is _			
	a) Coding		Decoding	c) Recoding	d) Ecoding	5

Which Vitamin is good for bones?
a) Vitamin A
b) Vitamin

8

9	Wearing seat belts, ba examples for a) Social Engineering c) Software Engineering		oiding drugs, heroin b) Civil Engineerin d) Hardware Engine	_
10	All addictions are part of a) Physical	of disorders b) Personal	c) Mental	d) General
11	Obesity is caused by an a) adiposity	increase inb) epidosity	c) ediposity	d) apidosity
12	Which of the following and experience? a) Doctor – centered comb) Patient centered comb) Practitioner – centered d) None of these	mmunication munication	style makes use of t	he patient's knowledge
13	Which year did the w fundamental human rig a) 1946		on first expresses the c) 1987	ne right to health as a d) 2000
14	The world health day is a) 1 st March	celebrated on b) 7 th April	c) 6 th October	d) 10 th December
15	Cleanliness, physical exa) Hygiene	kercise, rest and sleep a b) Physical hygiene		d) Personal hygiene
16	Which one of the followa) Sharing food c) Drinking boiled water		abit? b) Bathing twice a d d) Eating without w	
17	Which of the following a) Carbohydrates c) Vitamins and minera	O y	b) Lipids and protein d) All of these	
18	Which of the following the human body? a) Proteins	g food components is a	required for the grov	wth and maintenance of d) Both a and b
19 🗸	Which of the following	food products are the	best sources of anima	al proteins?
	a) Milk	b) Egg	c) Cheese	d) All of these
20	Egg is a rich source of a) Proteins	b) Minerals	c) Vitamins	d) All of these
21	SUD's means a) Substance Use Disord c) Societal Used Disord		b) Social Disorders d) Substance Under	
22	Addiction is a complex a) Lungs	, but treatable disease t b) Heart	hat affects fur c) Kidney	nction and behaviour d) Brain
23	Anxiety, depression, so cognitive dysfunction, pa) Physical	-	c are the health	ue to substance abuse, h issues d) General

24		rganisms that can be se	-	-
	a) Virus	b) Bacteria	c) Fungi	d) All of these
25	require ongoing medica	al attention		one year or more and
	a) Acute	b) Chronic	c) Short term	d) General
26	Physical functioning, p the components of	sychological status, so	cial functioning and	disease or treatment are
	a) Quality of life	b) Quantity of life	c) Chronic life	d) Acute life
27	Health is a state ofa) Well being	b) Good for nothing	c) Well for none	d) disease
28	Alcohol and drugs redua) Self – control	and increase b) dependency	risky behaviours c) disease	d) failure
29	What measures the vaccompany or country a) Health	alue of all the assets b) Wellness	of worth owned by	a person, community, d) Fitness
30	Which diseases are cal a) Inherited	<i>'</i>	c) Contagious	d) Congenital
31	The term means a) Social health	keeping clean to preve b) Wellness	ent the spread of dise c) Hygiene	ease. d) Refusal skills
32	To achieve good health a) Regular exercises b) Consume appropriat c) Eat regularly health d) All of these	te amount of water	ould do	
33	BMI stand fora) Body Material Index c) Body Mass Indicator		b) Body Mass Inde d) None of these	×x
34	Eating disorders are a) Anorexia Nervoasa c) Binge Eating Disord	ler	b) Bulimia Nerevo d) All of these	asa
35 A	Fruits are rich in a) More sugar more fib c) Less sugar more fib		b) Less sugar less t d) More sugar less	
36	Advantages of using ma) Regulating body ten b) Maintaining electrol c) Carrying nutrients and All of these	nperature lyte balance	5	
37	Body mass index is cal a) Height and Weight of b) Only weight of the b c) Only height of the b	of the body body		

38	Reasons for lung cancer a) Drinking Alcohol	b) Smoking	c) Sleeping	d) Exercise
39	Health is a goal and a) Health	b) Wellness	c) Fitness	d) Physical
40	"WHO" stands fora) World Hormany Org b) Wellness and Health c) Wellness and Health d) World Health Organ	Organization Office		1999
41	Guava, Lemon, Orange a) Vitamin A	and Tomato are rib) Vitamin B	ch in C) Vitamin C	d) Vitamin D
42	The most significant an a) Iron	d essential mineral b) Sodium	required for our body is c) Calcium	d) All of these
43	Alcohol consumption h a) Liver cirrhosis c) Stroke	as been linked to	b) High blood plea d) All of these	sure
44	Which of the following a) Food environment c) Individual psycholog		ortant in explaining obes b) Physical activity d) All of these	•
45	Communication is a para) Soft	t of skills b) Hard	c) Rough	d) Technical
46	Having good mental he a) Can deal appropriate b) Can deal and solve p c) Show respect for othe d) Share your true feeling	ly with sadness roblems with little er people always	trouble	,
47	Mindfulness is the only a) Mental health	technique that inc b) Physical health		d) All of these
48	Health enables people (a) Achieve physical fits (b) Enjoy life and feel (c) Fight with diseases (d) All of these	ness omfortable	8	
49	Health plays an importa a) Sad	nt role in feeling _ b) Happy	c) Anger	d) Ok
50	Mindfulness simply me a) Past	ans playing attenti b) Present	on toc) Future	d) all of these
	BY	* *	* * *	
	B	Ver-B	-4 of 4	
4	2			

21SFH29

USN							273	Questi	ion P	aper \	Versi	on	: C
						<u>.</u>							

Second Semester B.Arch./B.Plan. Degree Examination, June/July 2025 Scientific Foundation of Health

Time: 1 hr. Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the fifty questions, each question carries or	one mark.
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- 2. Use only Black ball point pen for writing / darkening the circles.
- 3. For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.
- 4. Darkening two circles for the same question makes the answer invalid.
- 5. Damaging/overwriting, using whiteners on the OMR sheets are strictly prohibited.

	45°	
1	The term means keeping clean to	prevent the spread of disease.
	a) Social health b) Wellness	c) Hygiene d) Refusal skills
		20°
2	To achieve good health and well being of	one should do
	a) Regular exercises	
	b) Consume appropriate amount of water	er 💮
	c) Eat regularly health meals	25 ^y
	d) All of these	Y
3	BMI stand for	
	a) Body Material Index	b) Body Mass Index
	c) Body Mass Indicator	d) None of these
4	Eating disorders are	
	a) Anorexia Nervoasa	b) Bulimia Nerevoasa
	c) Binge Eating Disorder	d) All of these
5	Fruits are rich in	
3		h) Logg gugan logg fibra
	a) More sugar more fibre	b) Less sugar less fibre
	c) Less sugar more fibre	d) More sugar less fibre
6	Advantages of using more water is	
U	a) Regulating body temperature	_
	, , , , ,	
	b) Maintaining electrolyte balance	m oo11a
	c) Carrying nutrients and oxygen to you	rcens
	d) All of these	

7	Body mass index is cal a) Height and Weight of b) Only weight of the b c) Only height of the b d) None of these	of the body body	2.769	Y
8	Reasons for lung cance a) Drinking Alcohol	r is b) Smoking	c) Sleeping	d) Exercise
9	Health is a goal and a) Health	is the active proce b) Wellness	ss of achieving it c) Fitness	d) Physical
10	"WHO" stands for a) World Hormany Org b) Wellness and Healtl c) Wellness and Healtl d) World Health Organ	n Organization n Office	837	<i>></i>
11	SUD's means a) Substance Use Disor c) Societal Used Disor		b) Social Disorders d) Substance Unde	
12	Addiction is a complex a) Lungs	, but treatable disease b) Heart	that affects fu c) Kidney	nction and behaviour d) Brain
13	Anxiety, depression, s cognitive dysfunction, a) Physical			lue to substance abuse, h issues d) General
14	are one celled or	ganisms that can be se	een only with a micro	oscope
	a) Virus	b) Bacteria	c) Fungi	d) All of these
15	diseases are de require ongoing medica a) Acute		ditions that last for c) Short term	one year or more and d) General
16	Physical functioning, p the components ofa) Quality of life	sychological status, so b) Quantity of life	*	disease or treatment are d) Acute life
17 🗸	Health is a state of a) Well being	b) Good for nothing	c) Well for none	d) disease
18	Alcohol and drugs redu a) Self – control	b) dependency	e risky behaviours c) disease	d) failure
19	What measures the vaccompany or country a) Health	b) Wellness	of worth owned by	a person, community,d) Fitness
20	Which diseases are call a) Inherited	ed as inborn diseases? b) Infected	c) Contagious	d) Congenital
21	Fill a quarter of your pla) Junk	ate with foods : b) Gobi-Manchuri	for good health c) Proteins	d) Species

22	What helps to build an a) Food	d maintain bones, mus b) Water	cles and skin? c) Air	d) Proteins
23	(Non Communicable I fibre.	_ 0	ensure an adequate	duces the risk of NCD's daily intake of dietary
	a) 200		c) 400	<i>*</i>
24	Salt intake to the recor a) 5	nmended level of less to b) 10	than grams per c) 15	r day d) 20
25	An apple a day a) Keeps the doctor aw c) Keeps your family a		b) Keeps all your to d) Keeps you awak	•
26	Which vitamin is good a) Vitamin D	for eyes? b) Vitamin K	c) Vitamin A	d) Vitamin B
27	The interpretation of that a) Coding	b) Decoding	c) Recoding	d) Ecoding
28	Which Vitamin is good a) Vitamin A	l for bones? b) Vitamin C	c) Vitamin K	d) Vitamin D
29	Wearing seat belts, be examples for a) Social Engineering c) Software Engineering		voiding drugs, heroi b) Civil Engineerin d) Hardware Engin	
30	All addictions are part a) Physical	of disorders b) Personal	c) Mental	d) General
31	Guava, Lemon, Oranga) Vitamin A	e and Tomato are rich b) Vitamin B	in c) Vitamin C	d) Vitamin D
32	The most significant as a) Iron	nd essential mineral red b) Sodium	quired for our body is c) Calcium	d) All of these
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35	Communication is a pa a) Soft	ort of skills b) Hard	c) Rough	d) Technical
36	Having good mental he a) Can deal appropriat b) Can deal and solve c) Show respect for oth d) Share your true feel	ely with sadness problems with little tro ner people always		

37	Mindfulness is the onl a) Mental health	y technique that increa b) Physical health	uses c) Social health	d) All of these
38	Health enables people a) Achieve physical fir b) Enjoy life and feel of c) Fight with diseases d) All of these	iness		
39	Health plays an impor a) Sad	tant role in feeling b) Happy	c) Anger	d) Ok
40	Mindfulness simply m a) Past	eans playing attention b) Present	to c) Future	d) all of these
41	Obesity is caused by a a) adiposity	n increase in b) epidosity	c) ediposity	d) apidosity
42	Which of the followin and experience? a) Doctor – centered c b) Patient centered cor c) Practitioner – centered d) None of these	ommunication nmunication	g style makes use of	the patient's knowledge
43	Which year did the v fundamental human riga) 1946		tion first expresses t	he right to health as a d) 2000
44	The world health day in a) 1st March	s celebrated on b) 7 th April	c) 6 th October	d) 10 th December
45	Cleanliness, physical ea) Hygiene	exercise, rest and sleep b) Physical hygiene		d) Personal hygiene
46	Which one of the folloa) Sharing food c) Drinking boiled war		nabit? b) Bathing twice a d) Eating without v	3
47	Which of the followin a) Carbohydrates c) Vitamins and miner		or nutrients in our foo b) Lipids and prote d) All of these	
48	0.	g food components is	required for the grov	wth and maintenance of
40	the human body?	h) Witaming	a) Minarala	d) Doth a and h
49		b) Vitamins g food products are the b) Egg	c) Minerals e best sources of anim c) Cheese	d) Both a and b hal proteins? d) All of these
	the human body? a) Proteins Which of the following	g food products are the b) Egg	e best sources of anim	nal proteins?

CDCS SOTISME

		5 21SFH29
USN	N .	Question Paper Version: D
Sec	cond Semester B.Arch./B.Plan. Degree	Examination, June/July 2025
~~~	Scientific Foundation	7
Timo	e: 1 hr.	Max. Marks: 50
1 11116		<b>Y</b>
	INSTRUCTIONS TO T	HE CANDIDATES
1.	Answer all the fifty questions, each question of	carries one mark.
2.	Use only Black ball point pen for writing / d	arkening the circles.
3.	For each question, after selecting your ans	wer, darken the appropriate circle
	corresponding to the same question numbe	r on the OMR sheet.
4.	Darkening two circles for the same question n	nakes the answer invalid.
5.	Damaging/overwriting, using whiteners	on the OMR sheets are strictly
	prohibited.	
1		Social Disorders Substance Under Diseases
2	Addiction is a complex, but treatable disease that a) Lungs b) Heart c) l	affects function and behaviour Kidney d) Brain
3	Anxiety, depression, schizophrenias, organic me cognitive dysfunction, personality disorder etc are a) Physical b) Social c) I	
4	are one celled organisms that can be seen of a) Virus b) Bacteria c) I	nly with a microscope Fungi d) All of these
5	diseases are defined broadly as condition require ongoing medical attention a) Acute b) Chronic c) S	ns that last for one year or more and Short term d) General
6	Physical functioning, psychological status, social the components of a) Quality of life b) Quantity of life c) Quantity of life b)	functioning and disease or treatment are  Chronic life d) Acute life
7	Health is a state of a) Well being b) Good for nothing c) \( \text{Conditions of the conditions} \)	,
8	Alcohol and drugs reduce and increase risk	y behaviours

What measures the value of all the assets of worth owned by a person, community, 9 company or country

a) Health

a) Self – control

b) Wellness

b) dependency

c) Wealth

c) disease

d) Fitness

d) failure

10	Which diseases are cal a) Inherited	led as inborn diseases? b) Infected	c) Contagious	d) Congenital
11	Fill a quarter of your pa	late with foods b) Gobi-Manchuri	for good health c) Proteins	d) Species
12	What helps to build an a) Food	d maintain bones, mus b) Water	cles and skin? c) Air	d) Proteins
13	Eating of at least(Non Communicable I fibre.			duces the risk of NCD's daily intake of dietary
	a) 200	b) 300	c) 400	d) 500
14	Salt intake to the recona) 5	nmended level of less to b) 10	chan grams per	day d) 20
15	An apple a daya) Keeps the doctor aw b) Keeps all your troub c) Keeps your family a d) Keeps you awake w	le away way		
16	Which vitamin is good a) Vitamin D	for eyes? b) Vitamin K	c) Vitamin A	d) Vitamin B
17	The interpretation of the a) Coding	b) Decoding	c) Recoding	d) Ecoding
18	Which Vitamin is good a) Vitamin A	l for bones? b) Vitamin C	c) Vitamin K	d) Vitamin D
19	examples for	anning of smoking, a		n, cocaine, alcohol are
	<ul><li>a) Social engineering</li><li>c) Software Engineering</li></ul>	g O	b) Civil Engineerin d) Hardware Engin	
20	All addictions are part a) Physical	of disorders b) Personal	c) Mental	d) General
21	Guava, Lemon, Orango a) Vitamin A	e and Tomato are rich b b) Vitamin B	n c) Vitamin C	d) Vitamin D
22	The most significant an a) Iron	nd essential mineral red b) Sodium	quired for our body is c) Calcium	d) All of these
23	Alcohol consumption ha) Liver cirrhosis c) Stroke	nas been linked to	b) High blood pleas d) All of these	sure
24	Which of the following a) Food Environment c) Individual psychological p		unt in explaining obes b) Physical activity d) All of these	-

25	Communication is a pa a) Soft	rt of skills b) Hard	c) Rough	d) Technical
26	Having good mental he a) Can deal appropriate b) Can deal and solve p c) Show respect for oth d) Share your true feeli	ely with sadness problems with little tro er people always		<b>&amp;</b> >
27	Mindfulness is the only a) Mental health	technique that increase b) Physical health	ses c) Social health	d) All of these
28	Health enables people a) Achieve physical fitt b) Enjoy life and feel co c) Fight with diseases d) All of these	ness		>
29	Health plays an importa	ant role in feeling b) Happy	c) Anger	d) Ok
30	Mindfulness simply me a) Past	eans playing attention b) Present	c) Future	d) all of these
31	Obesity is caused by an a) adiposity	b) epidosity	c) ediposity	d) apidosity
32	Which of the following and experience?  a) Doctor – centered comb Patient centered comb Practitioner – centered d) None of these	ommunication nmunication	g style makes use of t	he patient's knowledge
33	Which year did the w fundamental human rig a) 1946		ion first expresses the c) 1987	ne right to health as a d) 2000
34	The world health day is a) 1 st March	s celebrated on b) 7 th April	c) 6 th October	d) 10 th December
35	Cleanliness, physical es a) Hygiene c) Social hygiene	xercise, rest and sleep	are part of b) Physical hygiene d) Personal hygiene	
36	Which one of the followa) Sharing food b) Bathing twice a day c) Drinking boiled wated) Eating without wash	er	abit?	
37	Which of the following a) Carbohydrates c) Vitamins and minera		r nutrients in our food b) Lipids and prote	

38	Which of the following the human body?	g food components is	required for the grov	wth and maintenance of
	a) Proteins	b) Vitamins	c) Minerals	d) Both a and b
39	Which of the following a) Milk	food products are the b) Egg	best sources of anim c) Cheese	al proteins? d) All of these
40	Egg is a rich source of a) Proteins	b) Minerals	c) Vitamins	d) All of these
41	The term means a) Social health	keeping clean to prev b) Wellness	ent the spread of dise c) Hygiene	ase. d) Refusal skills
42	To achieve good health a) Regular exercises b) Consume appropriat c) Eat regularly health d) All of these	e amount of water	nould do	
43	BMI stand fora) Body Material Index c) Body Mass Indicator		b) Body Mass Inde d) None of these	x
44	Eating disorders are a) Anorexia Nervoasa c) Binge Eating Disord	er er	b) Bulimia Nerevo d) All of these	asa
45	Fruits are rich in a) More sugar more fib c) Less sugar more fibr		b) Less sugar less f d) More sugar less	
46	Advantages of using m a) Regulating body tem b) Maintaining electrol c) Carrying nutrients an d) All of these	nperature yte balance	S S	>
47	Body mass index is cal a) Height and Weight o c) Only height of the bo	of the body ody	b) Only weight of t d) None of these	he body
48	Reasons for lung cance a) Drinking Alcohol		c) Sleeping	d) Exercise
49	Health is a goal anda) Health	is the active proce b) Wellness	ess of achieving it c) Fitness	d) Physical
50	"WHO" stands fora) World Hormany Org b) Wellness and Healtl c) Wellness and Healtl d) World Health Organ	n Organization n Office		

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USN					

COLLEGE OF ENGINEERING 105H

First Semester B.E./B.Tech. Degree Examination, June/July 2025 Introduction to Internet of Things (IoT)

Time: 3 hrs.

Max. Marks: 100

Note: I. Answer any FIVE full questions, choosing ONE full question from each module. 2. M: Marks , L: Bloom's level , C: Course outcomes.

		Module - 1	M	L	<u>C</u>
Q.1	a.	With necessary sketches, explain the classification of computer networks	10	L2	CO1
		with respect to the following parameters.			
		i) Type of connections			
		ii) Physical Topology			
	b.	Illustrate networked communication between two hosts with a neat	10	L3	CO1
		diagram. Also explain seven layers of OSI model.	1		
		OR 🙏			
Q.2	a.	Explain six broad categories of IOT networking components along with a	10	L2	CO ₁
		neat diagram			
	b.	Differentiate between following:	10	L3	CO ₁
		i) M2M versus IoT			
		ii) IoT versus CPS			
		iii) IoT versus WoT			
		Module – 2	_		
Q.3	a.	Explain the classification of sensor based on the	10	L2	CO ₂
		i) Power requirements			
		ii) Sensor output			
		iii) Property to be measured			
	b.	Describe the different sensing types divided in to four different categories.	10	L2	CO2
		A .		4.1	
		OR OR			
Q.4	a.	Define Actuator and its mechanism. Explain different types of actuators.	10	L2	CO2
	b.	the state of the state of semantic in ICVI borned	10	L3	CO2
		sensing solution.			
		Module -3		1	
Q.5	a.	Explain the types of data involved in IoT systems based on the following	10	L2	CO3
۷,۰		parameters.			
		i) Based on data Format			1
		ii) Based on processing urgency	-		
	b.	In detail explain the two types processing topologies mentioned below:	10	L2	CO
		i) Onsite processing	A		
		ii) Off site processing			
		A			
		OR			
Q.6	a.	With a typical outline diagram of an IoT deployment, briefly explain the	10	) L2	CO
Q.u	a.	classification of offload location types.			
	1	Explain the important factors considered for IOT device design and	1 10	) L2	CO
	b.	selection considerations.			
	1	celection considerations.			

Q.7	T	Modulo			
0.7	1 000	Module - 4			105H
V.,	a.	Define virtualization. Discuss the advantages of virtualization from the perspective of end-user and CSP with suitable examples.	10	L3	CO ₄
19.04	b.	Explain service model and deployment model with respect to cloud model.	10	L2	CO ₄
		OR	-		
Q.8	a.	What is service level agreement? Explain the importance of SLA with its different metrics.	10	L2	CO4
	b.	Write a short note on: i) Cloud Sim ii) Cloud Analyst	10	L2	CO4
		Module – 5			
Q.9	a.	Explain the architecture of vehicular IOT and its sublayers and components.	10	L2	CO5
	b.	Briefly explain the architectural layers and components of healthcare IoT.	10	L2	CO5
		OR			
Q.10	a.	Discuss the advantages and challenge of machine learning.	10	L2	CO5
	b.	With a neat sketch explain the architecture of Ambusens system and its hardware.	10	L2	CO5

USN

Time: 3 hrs.

First Semester B.E./B.Tech. Degree Examination, June/July 2025

**Introduction to Python Programming** 

Max. Marks: 100 Note: 1. Answer any FIVE full questions, choosing ONE full question from each module. 2. M : Marks , L: Bloom's level , C: Course outcomes.

0:	Т	Module - 1	M	L	C
Q.1	а.	Explain the different data types supported in Python with syntax and examples.	6	L2	COI
	b.	Develop a program in Python to find the sum of n natural numbers. Read the number from user.	6	L3	COI
,	c.	Define Exception and illustrate the concept of exception handling in Python using suitable example.	8	L2	CO1
		OR			<u></u>
Q.2	a.	Define the rules to develop a user-defined function in Python and define a function called exchange() to swap two numbers, show the output.	6	L2	CO1
	b.	Develop a program to find the largest among the three numbers.	6	L3	CO1
	c.	Explain the syntax and example of the following statements i) for loop ii) While loop iii) if-elif-else.	8	L2	CO1
		Module – 2			
Q.3	a.	List out the augmented operators and give the examples to illustrate the same.	7	L1	CO2
	b.	Write a program to show the traversing of key-value pairs in dictionaries.	7	L3	CO2
	c.	Explain the random choice and random shuffle function with lists.	6	L2	CO2
7		OR			
Q.4	a.	Describe Lists in Phython and examples to create list, list concatenation and replication.	7	L1	CO2
1	b.	"inventory" and display it like the following: Inventory:	7	L3	CO2
		12 arrow, 42 gold coin, 1 rope, 6 torch, 1 dagger, Total number of items: 62.	7.	, j	7
	c.	Explain with an example slicing, in and not in operator with strings.	6	L2	CO2
		Module – 3			
2.5	a.	Write a program to accept string and display total number of alphabets.	8	L3	CO3

ř	· · · · ·		BPI	LCK	(105E
The state of the s	*		6	L2	CO.
4'0		c. Differentiate between absolute and relative paths in specifying file paths.	6	L2	CO.
		OR			
Q.	6	Write a program in Python to perform reading and writing operations on files.	8	L3	CO:
		List the string methods to analyze strings. Explain any four with syntax and examples.	6	L2	CO:
		Explain how to save and retrieve variables with the Shelve module.	6	L2	CO:
		Module – 4			
Q.7	:	Discuss how shutil module helps to perform the operations such as copy, move, rename and delete files.	8	L2	CO3
	t	What is logging? Explain the logging levels to categorize the log messages in Python.	6	L2	CO3
	C	Write an algorithm for implementation of multi-clipboard functionality.	6	L3	CO3
		OR			Mary.
Q.8	a		8	L2	CO
	b	Describe how Raise exception is done using an example.	6	L2	CO
	c.	Differentiate between Step over, Step In and Step Out buttons in the debugger.	6	L3	CO3
		Module – 5			
Q.9	a.	Differentiate between the class method and instance method with suitable program examples.	8	L3	CO4
	b.	Define a function which takes TWO objects representing complex numbers and returns new complex number with a addition of two complex numbers. Define a suitable class 'Complex' to represent the complex number. Develop a program to read N ( $N > = 2$ ) complex numbers and to compute the addition of N complex numbers.	8	L3	CO4
	c.	Write a _str_method for the Point class. Create a Point object and print it.	4 1	L2	CO ₄
	1	OR			
2.10	a.	Write a class with following criteria	8 1	L3	CO4
		Class name: Flower Objects: Lilly, Rose, Hibiscus Attributes: price, color, smell			
		Methods: get(), display()			
	b.	Develop a program that uses class Student which prompts the user to enter marks in three subjects and calculates total marks, percentage and displays the score card details. [Hint: Use list to store the marks in three subjects and total marks. Use_init_() method to initialize name, USN and the list to store marks and total. Use getMarks() method to read marks into the list, and display() method to display the score card details.		L3	CO4
	c.	Describe poly morphism with example.	4	L2	CO-

* * 2 of 2 * * *

B.L.D.E. ASSOCAITION'S
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LIBRARY, BIJAPUR.
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USN						

# First Semester B.E/B.Tech. Degree Examination, June/July 2025 Introduction C Programming

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M: Marks, L: Bloom's level, C: Course outcomes.

1 a. Discuss classification and application of computers.  b. Explain structure of C program with example.  c. Write a program to find the largest of three numbers.  7 L2 C  OR  2 a. Discuss the types of input and output devices used in computers.  6 L1 C  Explain printf() and scanf() functions of C with examples.  6 L3 C  Module - 2  3 a. Explain operator precedence and associativity with examples.  6 L2 C  Morite a program to calculate the grade for students with your sample grades.  6 L3 C  Module - 2  3 a. Explain operator precedence and associativity with examples.  6 L2 C  Explain looping statements in C language with syntax and example.  8 L2 C  OR  4 a. Discuss if and switch statement syntax in C language and give examples.  Beliam the usage of break, continue and go to statements in C language with 10 L2 C examples.  Module - 3  5 a. Explain function definition, function calls, function declaration. Give suitable examples.  b. Explain implementation of recursive functions with complete C program.  6 L3 C  c. Discuss call by value and call by reference in parameter passing with suitable illustrations.  OR  6 a. Explain declaration and initialization of one dimensional array with examples.  10 L3 C  L3 C  L3 C  L4 C  L5 C		_				
b. Explain structure of C program with example.  c. Write a program to find the largest of three numbers.  OR  2 a. Discuss the types of input and output devices used in computers.  b. Explain printf() and scanf() functions of C with examples.  c. Write a program to calculate the grade for students with your sample grades.  6 L1 C  Module - 2  3 a. Explain operator precedence and associativity with examples.  6 L2 C  Morite a program to calculate average of given numbers using for loops.  6 L3 C  Explain looping statements in C language with syntax and example.  8 L2 C  OR  4 a. Discuss if and switch statement syntax in C language and give examples.  Explain the usage of break, continue and go to statements in C language with cexamples.  Module - 3  5 a. Explain function definition, function calls, function declaration. Give suitable examples.  b. Explain implementation of recursive functions with complete C program.  6 L3 C  c. Discuss call by value and call by reference in parameter passing with suitable illustrations.  OR  6 a. Explain declaration and initialization of one dimensional array with examples.  10 L2 C  b. Implement matrix multiplication and validate the rules of multiplication of 10 L2 C  matrix.  Module - 4	1	+-	Module – 1	M	L	C
c. Write a program to find the largest of three numbers.  OR  2 a. Discuss the types of input and output devices used in computers.  b. Explain printf() and scanf() functions of C with examples.  c. Write a program to calculate the grade for students with your sample grades.  Module - 2  3 a. Explain operator precedence and associativity with examples.  b. Write a program to calculate average of given numbers using for loops.  c. Explain looping statements in C language with syntax and example.  B. L2 C  OR  4 a. Discuss if and switch statement syntax in C language and give examples.  Discuss if and switch statement syntax in C language and give examples.  Module - 3  5 a. Explain function definition, function calls, function declaration. Give suitable examples.  b. Explain implementation of recursive functions with complete C program.  C. Discuss call by value and call by reference in parameter passing with suitable illustrations.  OR  6 a. Explain declaration and initialization of one dimensional array with examples.  D. Implement matrix multiplication and validate the rules of multiplication of 10 L2 C matrix.  Module - 4			Discuss classification and application of computers.	6	L1	CO1
OR  2 a. Discuss the types of input and output devices used in computers.  b. Explain printf() and scanf() functions of C with examples.  c. Write a program to calculate the grade for students with your sample grades.  Module - 2  3 a. Explain operator precedence and associativity with examples.  b. Write a program to calculate average of given numbers using for loops.  c. Explain looping statements in C language with syntax and example.  Back plain the usage of break, continue and go to statements in C language with 10 L2 C examples.  Module - 3  5 a. Explain function definition, function calls, function declaration. Give suitable examples.  b. Explain implementation of recursive functions with complete C program.  c. Discuss call by value and call by reference in parameter passing with suitable illustrations.  OR  6 a. Explain declaration and initialization of one dimensional array with examples.  b. Implement matrix multiplication and validate the rules of multiplication of 10 L2 C matrix.  Module - 4		b.		7	L2	CO2
OR  2 a. Discuss the types of input and output devices used in computers.  b. Explain printf() and scanf() functions of C with examples.  c. Write a program to calculate the grade for students with your sample grades.  Module - 2  3 a. Explain operator precedence and associativity with examples.  b. Write a program to calculate average of given numbers using for loops.  c. Explain looping statements in C language with syntax and example.  Back plain the usage of break, continue and go to statements in C language with 10 L2 C examples.  Module - 3  5 a. Explain function definition, function calls, function declaration. Give suitable examples.  b. Explain implementation of recursive functions with complete C program.  c. Discuss call by value and call by reference in parameter passing with suitable illustrations.  OR  6 a. Explain declaration and initialization of one dimensional array with examples.  b. Implement matrix multiplication and validate the rules of multiplication of 10 L2 C matrix.  Module - 4		c.	Write a program to find the largest of three numbers.	7	L3	CO2
b. Explain printf() and scanf() functions of C with examples.  c. Write a program to calculate the grade for students with your sample grades.  Module - 2  3 a. Explain operator precedence and associativity with examples.  b. Write a program to calculate average of given numbers using for loops.  c. Explain looping statements in C language with syntax and example.  8 L2 C  OR  4 a. Discuss if and switch statement syntax in C language and give examples.  b. Explain the usage of break, continue and go to statements in C language with program to calculate average of given numbers using for loops.  OR  4 a. Discuss if and switch statement syntax in C language and give examples.  Discuss if and switch statement syntax in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with syntax and example.  Break in the usage of break, continue and go to statements in C language with progr			OR			
b. Explain printf() and scanf() functions of C with examples.  c. Write a program to calculate the grade for students with your sample grades.  Module - 2  3 a. Explain operator precedence and associativity with examples.  b. Write a program to calculate average of given numbers using for loops.  c. Explain looping statements in C language with syntax and example.  8 L2 C  OR  4 a. Discuss if and switch statement syntax in C language and give examples.  b. Explain the usage of break, continue and go to statements in C language with program to calculate average of given numbers using for loops.  OR  4 a. Discuss if and switch statement syntax in C language and give examples.  Discuss if and switch statement syntax in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with program in the usage of break, continue and go to statements in C language with syntax and example.  Break in the usage of break, continue and go to statements in C language with progr	2	a.	Discuss the types of input and output devices used in computers.	6	L1	CO1
c. Write a program to calculate the grade for students with your sample grades.    Module - 2		b.	Explain printf() and scanf() functions of C with examples.			CO2
Module - 2   Samples   S		c.	Write a program to calculate the grade for students with your sample grades			CO2
b. Write a program to calculate average of given numbers using for loops.  c. Explain looping statements in C language with syntax and example.  8 L2 C  OR  4 a. Discuss if and switch statement syntax in C language and give examples.  10 L2 C  b. Explain the usage of break, continue and go to statements in C language with 10 L2 C  examples.  Module – 3  5 a. Explain function definition, function calls, function declaration. Give suitable examples.  b. Explain implementation of recursive functions with complete C program.  c. Discuss call by value and call by reference in parameter passing with suitable illustrations.  OR  6 a. Explain declaration and initialization of one dimensional array with examples.  10 L3 C  NoR  10 L2 C  L2 C  L3 C  L3 C  L4 C  L4 C  L5 C  L5 C  Discuss call by value and call by reference in parameter passing with suitable illustrations.  NoR  Module – 4						
b. Write a program to calculate average of given numbers using for loops.  c. Explain looping statements in C language with syntax and example.  8 L2 C  OR  4 a. Discuss if and switch statement syntax in C language and give examples.  b. Explain the usage of break, continue and go to statements in C language with examples.  Module - 3  5 a. Explain function definition, function calls, function declaration. Give suitable examples.  b. Explain implementation of recursive functions with complete C program.  c. Discuss call by value and call by reference in parameter passing with suitable illustrations.  OR  6 a. Explain declaration and initialization of one dimensional array with examples.  10 L3 C  No Language with suitable illustrations.  OR  6 L3 C  No Language with suitable illustrations.  OR  Module - 4	3	a.	Explain operator precedence and associativity with examples	6	1.2	CO2
c. Explain looping statements in C language with syntax and example.  OR  4 a. Discuss if and switch statement syntax in C language and give examples.  b. Explain the usage of break, continue and go to statements in C language with examples.  Module – 3  5 a. Explain function definition, function calls, function declaration. Give suitable examples.  b. Explain implementation of recursive functions with complete C program.  c. Discuss call by value and call by reference in parameter passing with suitable illustrations.  OR  6 a. Explain declaration and initialization of one dimensional array with examples.  10 L3 C C C C C C C C C C C C C C C C C C		b.	Write a program to calculate average of given numbers using for loops			CO2
A a. Discuss if and switch statement syntax in C language and give examples.  b. Explain the usage of break, continue and go to statements in C language with examples.  Module – 3  5 a. Explain function definition, function calls, function declaration. Give suitable examples.  b. Explain implementation of recursive functions with complete C program.  c. Discuss call by value and call by reference in parameter passing with suitable illustrations.  OR  6 a. Explain declaration and initialization of one dimensional array with examples.  10 L3 C  Module – 4  Module – 4		c.	Explain looping statements in C language with syntax and example			CO2
b. Explain the usage of break, continue and go to statements in C language with examples.    Module - 3						002
b. Explain the usage of break, continue and go to statements in C language with examples.  Module – 3  5 a. Explain function definition, function calls, function declaration. Give suitable examples.  b. Explain implementation of recursive functions with complete C program.  c. Discuss call by value and call by reference in parameter passing with suitable illustrations.  OR  6 a. Explain declaration and initialization of one dimensional array with examples.  10 L3 C  b. Implement matrix multiplication and validate the rules of multiplication of 10 L2 C  Module – 4	4	a.	Discuss if and switch statement syntax in Clanguage and give examples	10	1.2	CO2
Module – 3  5 a. Explain function definition, function calls, function declaration. Give suitable examples.  b. Explain implementation of recursive functions with complete C program.  c. Discuss call by value and call by reference in parameter passing with suitable illustrations.  OR  6 a. Explain declaration and initialization of one dimensional array with examples.  10 L3 C  b. Implement matrix multiplication and validate the rules of multiplication of 10 L2 C  matrix.  Module – 4		b.	Explain the usage of break, continue and go to statements in C language with			CO2
5 a. Explain function definition, function calls, function declaration. Give suitable examples.  b. Explain implementation of recursive functions with complete C program.  c. Discuss call by value and call by reference in parameter passing with suitable illustrations.  OR  6 a. Explain declaration and initialization of one dimensional array with examples.  10 L3 C  b. Implement matrix multiplication and validate the rules of multiplication of 10 L2 C  matrix.  Module – 4			-			12.
b. Explain implementation of recursive functions with complete C program.  c. Discuss call by value and call by reference in parameter passing with suitable  8 L2 C illustrations.  OR  6 a. Explain declaration and initialization of one dimensional array with examples.  10 L3 C matrix.  Module – 4	_	1 -				
c. Discuss call by value and call by reference in parameter passing with suitable 8 L2 C illustrations.  OR  6 a. Explain declaration and initialization of one dimensional array with examples. 10 L3 C matrix.  Module – 4	5	a.		6	L2	CO5
OR  6 a. Explain declaration and initialization of one dimensional array with examples. 10 L3 C matrix.  Module – 4		b.	Explain implementation of recursive functions with complete C program.	6	L3	CO5
<ul> <li>a. Explain declaration and initialization of one dimensional array with examples.</li> <li>b. Implement matrix multiplication and validate the rules of multiplication of numbers.</li> <li>Module – 4</li> </ul>		c.	A A A	8	L2	CO5
b. Implement matrix multiplication and validate the rules of multiplication of 10 L2 C matrix.  Module – 4			OR			
matrix.  Module – 4	6	a.	Explain declaration and initialization of one dimensional array with examples.	10	L3	CO5
Module – 4		b.	4	10	L2	CO3
7 a. Explain declaration and initialization of two dimensional array with example. 10 L2 C			7 19 3	L		2:
·	7	a	Explain declaration and initialization of two dimensional array with example.	10	L2	CO3
	-			10	L3	CO ₃
algorithm.		J.	algorithm.			

لينتب	Little Control of the		Day.
	OR candarrays of strings with	10	7
a,	Explain the declaration, initialization of strings in C and arrays		L2
b.	Implement structure to read, write and compute average marks of the students scoring. Display students scoring above and below the average marks for a	10	L4
	class of N students.		
	Module - 5		
a.	Using suitable code, discuss the working of the following string functions.	0	L2
	(i) Streat()		
	(ii) Strlen()		
	(iii) Stremp()	1 1 1 1 N	
b.	Write a program to transpose the elements of a 3×3 matrix.	8	L3
c,	Implement a structure of student with elements NAME, USN and GRADE.	6	14
	Write functions to read and display student structure.		
	OR		
a.	Explain structures with syntax and example.	6	L2
b.	Develop a program using pointers to compute the sum, mean and standard	7	L4
	deviation of all elements stored in an array of N real numbers.		
c.	Explain the passing of pointer variables to a function with examples.	7	L2
	b.  a.  b.  c.  a.  b.	examples.  b. Implement structure to read, write and compute average marks of the students scoring. Display students scoring above and below the average marks for a class of N students.  Module - 5  a. Using suitable code, discuss the working of the following string functions:  (i) Streat()  (ii) Stren()  (iii) Stremp()  b. Write a program to transpose the elements of a 3×3 matrix.  c. Implement a structure of student with elements NAME, USN and GRADE. Write functions to read and display student structure.  OR  a. Explain structures with syntax and example.  b. Develop a program using pointers to compute the sum, mean and standard deviation of all elements stored in an array of N real numbers.	a. Explain the declaration, initialization of strings in C and arrays of strings with examples.  b. Implement structure to read, write and compute average marks of the students scoring. Display students scoring above and below the average marks for a class of N students.    Module - 5

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# First Semester B.E./B.Tech. Degree Examination, June/July 2025 Introduction to Electronics and Communication

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M: Marks , L: Bloom's level , C: Course outcomes.

	7	Module – 1	M	L	C
Q.1	a.	Define the term rectifier. Explain the principle of working of full-wave bridge rectifier using a neat circuit diagram and waveforms.	7	L2	CO1
	b.	Discuss why negative feedback is used in amplifiers. Derive an expression for overall gain of an amplifier with negative feedback.	7	L2	CO1
	c.	A mains transformer having a turns ratio 44: 1 is connected to a 220 V rms mains supply. If the secondary output is applied to a half wave rectifier, determine the peak voltage that will appear across a load.	6	L3	CO1
	٠	OR			
Q.2	a.	With a block diagram explain the working of a d.c. power supply. Also mention the major components used in each block.	7	L2	CO1
	b.	Explain with circuit diagram, the working of, (i) Voltage doubler (ii) Voltage trippler systems.	7	L2	CO1
	c.	An amplifier produces an output voltage of 2V for an input of 50 mV. If the input and output currents in this condition are, respectively, 4 mA and 200 mA, determine:  (i) Voltage gain  (ii) Current gain  (iii) Power gain.		L3	CO1
	J	Module – 2			
Q.3	a.	Draw the neat circuit diagram and accompanying waveforms of the following circuits using operational amplifier:  (i) Voltage follower  (ii) Differentiator  (iii) Integrator	6	L1	CO2
-	b.	Mention the conditions for sustained oscillations in an oscillator. Draw the circuit and provide the equations for output frequency of phase shift oscillator.	1	L2	CO2
. 1	c.	With a neat circuit diagram and waveform, describe the operation of crysta controlled oscillator.	1 7	L	2 CO
		OR			
		What is an operational amplifier? Write a note on ideal characteristics of	AF !	7   L	2   CO

		b. Explain the operation of single stage astable oscillator with its circuit diagram.	7	L.2	CO ₂
		Determine the frequency of oscillations of a three stage ladder network in which $C=10$ nF and $R=10$ K $\Omega$ .	6	L3	CO2
		Module - 3			
Q.s	5   8	. Mention different theorems and postulates of Boolean algebra and prove each of them with truth table.	7	L2	CO3
	b	With the help of truth table, explain the operation of half adder with its circuit diagram and expressions for sum and carry.	5	L3	CO ₃
	c.	<ul> <li>(i) Minimize the function: F(x, y, z) = xy + x'z + yz</li> <li>(ii) Find the complement of:</li> </ul>	8	L3	CO3
		$F_1(x, y, z) = x'yz' + x'y'z$			
		$F_2(x, y, z) = x(y'z' + yz')$			1.276
		(iii) Compute the 1's complement of: 11101.0110 ₍₂₎			
		OR			174
Q.6	a.	With the help of truth table, explain the operation of full adder with its circuit diagram and expressions for sum and carry.	8	L2	CO3
	b.	State and prove De-Morgan's theorem with its truth table.	6	L2	CO3
	c.	Convert the following: (i) $(673.124)_{(8)} = (?)_{(16)}$	6	L3	CO3
		(ii) Subtract using $(r-1)$ 's compliment method: $72532_{(10)} - 3250_{(10)}$			
		(iii) Subtract using r's compliement method: $1010100_{(2)} - 1000100_{(2)}$	32		
_		Module – 4	1		
2.7	a.	What is an embedded system? Compare embedded systems and general purpose computing systems.	7	L2	CO4
	b.	Which component forms the core of an embedded system? Compare a microcontroller and a microprocessor used in an embedded system.	6	L2	CO4
	c.	Define the term transducer, with a representative diagram, explain the	7	L2	CO4
	4	working of any one type of sensor and an actuator.			35043
8	a.	Write a brief note on a semiconductor LED. With a most discuss a linear leading of the control o			0.0
U	a.	Write a brief note on a semiconductor LED. With a neat diagram explain how a 7-segment LED can be used to display the data.	7	L2	CO4
	b.	Using different features, describe the classification of embedded systems.	7	L2	CO4
	c.	With a block diagram, explain briefly about the different elements of an embedded system.	6	L2	CO4

00		Module - 5		-	
Q.9	a,	What is meant by modulation in communication systems? Briefly describe each type of modulation.	8	L2	CO5
	b.	Brief about basic communication system with its block diagram.	7	L2	CO5
	c.	Compare analog communication with digital communication systems.	5	L2	CO5
		each type of modulation.  D. Brief about basic communication system with its block diagram.  C. Compare analog communication with digital communication systems.  OR  Explain with a neat diagram, the concept of Radio Wave propagation and its different types.  Describe about radio signal transmission and multiple access techniques.  C. Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK, FSK and PSK 6 L3 Consider the following binary data and sketch the ASK follows the following binary data and sketch the ASK follows the following binary data and sketch the ASK follows the fo			
Q.10	a.	Explain with a neat diagram, the concept of Radio Wave proportion and	7	L2	CO5
	b.	Describe about radio signal transmission and multiple access techniques.	7	L2	CO5
	c.	modulated waveforms	6	L3	COS
		Digital 101011001 Signal			
,		Fig. Q10 (c)			

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#### First Semester B.E./B.Tech. Degree Examination, June/July 2025 Introduction to Electrical Engineering

Time: 3 hrs.

Max. Marks: 100

Note: I. Answer any FIVE full questions, choosing ONE full question from each module.

2. VTU Formula Hand Book is permitted.

3. M: Marks , L: Bloom's level , C: Course outcomes.

		Module - 1	M	L	C
	а,	List the differences between conventional and non-conventional energy sources.		L1	CO
	Jr.	What is the purpose of single line diagrams? Explain a typical power system with the help of a labelled single line diagram.	10	L2	CO
	c.	Two resistors are connected in parallel and a voltage of 200 V is applied to the terminals. The total current is 25 A and the power dissipated in one of the registors is 1500 W. What is the resistance of each?	06	L3	CO
	-	OR	L		
2	a.	State and explain Ohm's law. List the limitations of Ohm's law.	06	L3	CO2
	b.	With the help of a block diagram explain nuclear power generation.	06	L2	CO1
	c.	A circuit consists of two parallel resistors having resistances $20~\Omega$ and $30~\Omega$ , connected in series with $15~\Omega$ . If the current through $15~\Omega$ resistor is 3 A, find i) Current in $20~\Omega$ and $30~\Omega$ ii) Voltage across the whole circuit iii) Total power and power consumed in all resistances.	08	L3	G
		Module – 2			
3	a.	Define the following terms with reference to a sinusoidally a.c. quantity:  i) RMS value iii) Average value iii) Form factor iv) Frequency y) Peak factor vi) Phase difference		L1 L2 L3 L3 L2	CO2
	b.	An alternating current varying sinusoidally with a frequency of 50 Hz has RMS value of 20 A. Write down the equation for the instantaneous value and find this value 0.0025 seconds after passing through a positive maximum value.	06	L2	CO2
	c.	Show that the current through a pure inductor lags the applied voltage by 90° and the average power consumed is zero. Draw the waveforms of voltage, current and power.	08	L3	CO2
,	J	OR			
4	a.	Define the following terms with reference to a.c. quantity:  i) Active power ii) Reactive power iii) Apparent power	06	L3	CO2
	Jo.	List the advantages of 3 phase system over single phase system.	05	L2	CO2
	c.	Three identical coils, each of resistance 20 $\Omega$ and inductance 0.5 H are connected in (i) Star (ii) Delta, to a 3 phase, 400 V, 50 Hz supply.	09	L2	CO2

	Q.7   A   b   c   c   c   c   c   c   c   c   c	Total Control of the	WOUTHAGOREN, SMARTH	BI	BESCK1				
	Q.	5	With a neat sketch and in the Module – 3			5			
	Q.6  Q.7  Q.8 a b c.  Q.9 a. Jb. c.			08	L2	CO			
Q.5   a.   With a neat skeep   b.   Starting from the 60 A. Calculate (i) wave-wound   c.   A 4-pole, lap wits armature. It a flux/pole of developed.   D.   With a neat skeep induction motor.   c.   A 50 KVA transstan efficiency of full load copper labeled in the motor and the condition motor with motor wit			L3	CO					
		C	The current in each conductor is	1	L3	CO			
			60 A. Calculate the total current emf and power generated in the armature is (i) wave-wound (ii) lap-wound.						
(	Q.6	a.	Define back-enf and explain its air is	T					
-		b		06	L2	CO			
				08	L3	Co			
		e.	and the fitting at 300 rom and takes an armature gurrent of 40 A with	06	L3	Co			
-	Module – 3  Q.5   A   With a neat sketch, explain the principle and working of a DC motor.   08   L    Dr.   Starting from basic principles, derive the EMF equation of a DC generator.   06   L    C.   A +-pole DC generator has 564 conductors on its armature and is driven at 800 rpm, the flux per pole is 20 mWb. The current in each conductor is 60 A. Calculate the total current emf and power generated in the armature is (i) wave-wound (ii) lap-wound.   08   L    Q.6   a.   Define back-enf and explain its significance.   06   L    D.   Starting from fundamentals, derive the torque equation of a DC motor.   08   L    C.   A 4-pole, lap wound DC motor has 40 slots each having 20 conductors on its armature. It runs at 360 rpm and takes an armature current of 40 A, with a flux/pole of 45 mWb. Calculate the torque and mechanical power developed.   Module - 4    Q.7   X   Starting from fundamentals, derive the emf equation of a transformer.   06   L    D.   With a neat sketch, explain the squirrel cage and wound rotors of a 3 phase induction motor.   08   L    D.   With a neat sketch, explain the squirrel cage and wound rotors of a 3 phase induction motor.   08   L    C.   A 50 KVA transformer has an efficiency of 98% at full load, 0.8 p.f and has an efficiency of 96.9% at ½ full load, 0.8 p.f. Determine the iron loss and full load copper loss.   OR    Q.8   a.   With the help of neat vector diagrams, explain the production of a rotating magnetic field in a 3 phase induction motor.   06   L    Derive the condition for maximum efficiency of a transformer.   06   L    C.   An 8-pole alternator runs at 750 rpm and supplied power to a 6-pole induction motor which has a full load slip of 3%. Find the full load speed of the motor and the frequency of the rotor cmf.   Module - 5    Explain two-way and three way control of lamps with the help of circuit diagram and switching table.   Module - 5    Explain the working principle of fuse. List the requirements of a good fuse.   06   L    D.   Explain the working principle of fuse	1 45 IIIWD. Calculate the forgue and mechanical nower							
0		L	57						
V	.,	, i.		06	L3	CO			
	,		maderion motor.	06	L2	CO.			
			an efficiency of 96.9% at 4 full load 0.8 n f. Determine the iron land 1.	08	L3	CO			
0.6	<b>o</b> T		OR			14.10			
Q.o		a.	with the help of neat vector diagrams, explain the production of a rotating magnetic field in a 3 phase induction motor.	08	L2	CO			
1				06	L2	CO			
		1 11	ne motor and the frequency of the rotor emf.	06	L3	CO			
00		/ E	Module – 5			1000			
Q.y	T'a	a	agram and switching table.	08	L2	CO			
	d			06	L2	CO			
	بىء	E	splain the working principle of fuse. List the requirements of a good fuse.	06	L2	CO			
	į.		OR						
Q.10	a.	Sn	hat is electric shock? List the measures to be taken to prevent electric ock.	06	L2	CO			
	b.	W	nat is tariff? Explain 2 part tariff with its advantages and disadvantages.	08	L2	CO			
	c.	Ex	plain the different types of domestic wiring.	06	L2	CO			
			* * * * *						

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# First Semester B.E/B.Tech. Degree Examination, June/July 2025 Introduction to Cyber Security

Time: 3 hrs.

Max. Marks:100

Note: I. Answer any FIVE full questions, choosing ONE full question from each module.
2. M: Marks, L: Bloom's level, C: Course outcomes.

		Module - 1	M	L	C
1	a.	Discuss the classification of cyber crime. Explain the different types of cyber	10	L2	CO1
		crime towards an individual and property.			
	b.	Explain the Botnet Menace with diagram.	6	L2	CO2
	c.	Elaborate two types of Attacks in cyber security.	4	L2	CO1
		OR A			
2	a.	Discuss the purpose of hacking. Explain hacking with examples.	10	L2	CO2
	b.	Explain Spamming. Mention its types.	6	L2	CO2
	c.	Who are Cybercriminals? Explain its types.	4	L2	CO2
		Module – 2			
3	a.	What is Cyber-stalking? Discuss how it is a crime under Indian IT Act.	8	L3	CO1
	b.	How cybercafés are creating paths for cybercrimes,	6	L4	CO2
T.	c.	Discuss the four different hat concept in cyber security.	6	L2	CO2
		OR OR	-		
4	a,	What is social engineering? Explain with example. Also discuss dumpster	10	L2	CO1
		diving and shoulder surfing concepts in social engineering.			
	b.	Explain how Botnets can be used as fuel to cyber crime. With neat diagram,	6	L2	CO2
		discuss Botnet uses for gainful purpose.			
10-	c.	Explain the real-life incident of cyber stalking example	4	L2	CO2
ā.	1				
		Module – 3			
5	a.	What are the different ways of password cracking methods?	10	L1	CO3
1	b.	List and discuss the classification of DoSattack,	6	L1	CO3
	c.	Discuss the difference between Trozen Horses and Backdoors.	4	L2	CO3
E.		OR			
6	a.	Explain the following:	10	L2	CO3
		i) Software keyloggers			
		ii) Hardware keylogger			
		iii) Anti keylogger			
		iv) Spywares.			
21	b.	Discuss the proxy server and Anonymizers in the cyber security.	6	L2	CO3
	c.	Differentiate between virus and worm.	4	L3	CO3
			-		
		Module – 4			
7	a.	Discuss the various types of phishing scams [Any five].	10	L2	CO4
	b.	Explain the different types of identity theft [any five].	10	L2	CO4
	1	1 of 2			
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	-	OR	Yak	_			
8	a.	Discuss the various techniques used by phishers to launch phishing attacks.	10	121			
	<u>b.</u>	What is spear phishing? Explain with example	5	Li			
	c.	Explain how to prevent being a victim of identify theft in cyber security.	5	14			
					d		
-		Module – 5					
9	a.	Discuss the following phases of Forensies life cycles:	10	L2	Ĉ.		
1		1) Freparation and identification			C		
	<u> </u>	(ii) Collection and recording					
-	b.	Differentiate between Forensic policy and Security policy	6	L2	<del>-</del>		
	c.	Briefly explain RFC2822.	-	Li	Q		
			-	LI	C		
b. What is spear phishing? Explain with example.  c. Explain how to prevent being a victim of identify theft in cyber security.    Module - 5   10   1							
10	a.	Discuss the following phases of forensics life cycles:	10	L2			
		1) Storing and transporting	10	LZ	CC		
		11) Examination /Investigation	Tr.	-302			
		iii) Analysis interpretation and attribution			1		
	b.	Discuss the need for concept of Computer Forencies	-	TC			
	c.	Briefly explain wireless Forencies		L2	CC		
		The less Polelisies.	4	L1	CC		
		# * * * * * #			134		

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# First Semester B.E./B.Tech. Degree Examination, June/July 2025 Renewable Energy Sources

Time: 3 hrs.

Max. Marks: 100

Note: I. Answer any FIVE full questions, choosing ONE full question from each module.
2. M: Marks, L: Bloom's level, C: Course outcomes.

		Module - 1	M	L	C
Q.1	a.	What are the principles of Renewable Energy? Explain the causes of Energy scarcity.	06	L2	CO1
	b.	Classify the Renewable Energy Sources. What are the factors affecting energy resource development.	08	L2	CO1
	c.	Discuss the Indian Energy availability.	06	L2	CO1
	V	OR			
Q.2	a.	What are the advantages and limitations of Renewable Energy Sources?	06	L2	CO1
	b.	Explain briefly the energy sources based on:  i) Wind energy ii) Tidal energy iii) Biomass energy iv) Ocean thermal energy.	10	L2	CO1
	c.	Write a note on Internet of Energy (IOE).	04	L2	CO1
		Module – 2			
Q.3	a.	What are the devices used for the measurement of Solar Radiation? With a neat figure explain the working of Angstorm type Purheliometer.	06	L2	CO2
a II	b.	Explain the advantages of Solar Pond. Discuss the operation of solar pond electric power generation.	06	L2	CO2
	c.	Briefly explain any four solar thermal energy applications.	08	L2	CO2
		OR	111		
Q.4	a.	With a neat sketch, discuss the operation of solar flat plate collector with main parts.	08   L2   06   L2   10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2       10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L2     10   L	L2	CO2
	b.	Explain the principle of Solar photovoltaic power generation. What are the main components?	07	L2	CO2
V	c.	What are the advantages and applications of Solar PV cells?	06	L2	CO2
		Module – 3			
Q.5	a.	Explain the working principle of Wind Energy. What are the classifications of Wind Energy systems?	6	L2	CO3
	b.	Explain with structure of Wind Energy Conversion System (WECS) with functions of each part.	8	L2	CO3

1	c.	Derive an expression for power available in the wind.		6	L3	3 C(
And I work				4	100	1
Q.6	a.	Classify the biomass conversion technologies. Explain clearly the fac affecting the biogas generation.	tors	8	L2	Co
	b.	Explain with block diagram of Urban Waste Recovery Managem Scheme.	ent	6	L2	Co
	c.	What are the applications of Gassifiers? Explain with neat sketch, working of downdraft Gassifiers.	the	6	L2	C03
		Module – 4				
Q.7	a.	What is the working principle of Tidal energy conversion? Explain t single basin type tidal power plant.	he	7	L2	C04
1	b.	What are the advantages and limitations of wave energy? Explain the various devices for harnessing wave energy.	1e	8	L2	CO4
	c.	Write a note on the tidal power generation in India.		5	L2	CO4
		OR				
Q.8	a.	What is the working principle of OTEC plants? Explain the OTEC system based on open cycle plant.	n '	7 1	L2 (	CO4
	b.	State the merits and demerits of OTEC plants. Describe the closed cycle OTEC plants.	e 7	7 L	,2 (	C <b>O</b> 4
	c.	State the types of Tidal energy schemes. Discuss the relative merits and demerits of Tidal power.	6	L	2 C	CO4
Ý,		Module – 5				
Q.9	a.	What is fuel cell? Explain the basic principle of fuel cell with reference to $H_2 - O_2$ .	7	L	2 C	<b>O</b> 5
	b.	What are classification of fuel cells? Explain the Hydrogen energy storage and applications.	8	L2	C	05
	c.	Write a note on Zero energy concepts.	5	L2	CC	O5
		OR		L		
Q.10	a.	Explain the different hydrogen production technologies.	8	L2	CC	)5
	b.	Explain the advantages and disadvantages of fuel cells.	6	L2	CO	05
	c.	Explain the problems associated with hydrogen energy.	6	L2	CO	)5

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BMATC101

#### First Semester B.E/B.Tech. Degree Examination, June/July 2025 Mathematics - I for Civil Engineering Stream

Time: 3 hrs.

Max. Marks:100

Note: I. Answer any FIVE full questions, choosing ONE full question from each module.

2. M: Marks, L: Bloom's level, C: Course outcomes.

3. VTU Formula Hand Book is permitted.

		Module – 1	M	L	C
1	a.		7	L3	CO1
	b.	Find the pedal equation for the curve $r^m = a^m \sec m\theta$ .	7	L1	CO1
	c.	Find the radius of curvature for the curve $y = 4 \sin x - \sin 2x$ at $x = \pi/2$ .	6	L1	CO1
		OR		Ll.	
2	a.	Find the angle between the curves $r = a \log \theta$ and $r = \frac{a}{\log \theta}$ .	7	L1	CO1
	b.	Derive an expression for radius of curvature for polar curve $r = f(\theta)$ .	7	L1	CO1
	c.	Using modern mathematical tool, write a programme to plot the sine and cosine curves.	6	L3	CO5
		Module – 2			
3	a.	Obtain the Maclaurin's series expansion of $y(x) = \sqrt{1 + \sin 2x}$ .	7	L3	CO ₂
	Ъ.	Find $\frac{df}{dt}$ by using partial differentiation, given that $f = x^3 + y^3 + z^3$ , when	7	L2	CO2
		$x = e^{-1}$ , $y = e^{-1}$ and $z = e^{-1}$ cost.			
	c.	If $u = x + 3y^2 - z^2$ , $v = 4x^2yz$ , $w = 2z^2 - xy$ , find $\frac{\partial(u, v, w)}{\partial(x, y, z)}$ at $(1, -1, 0)$ .	6	L2	CO2
Ž.	7	OR			
4	a.	Evaluate: i) $\lim_{x\to 0} \left(\frac{a^x + b^x + c^x}{3}\right)^{1/x}$ ii) $\lim_{x\to \pi/4} (\tan x)^{\tan 2x}$ .	7	L1	CO2
	b.	Find the extreme values of the function: $x^3 + y^3 - 3x - 12y + 20 = 0$ .	7	L2	CO2
70	c.	Use modern mathematical tool, write a programme to show that $u_{xx} + u_{yy} = 0$ , given $u = e^x \{ x \cos y - y \sin y \}$	6	L3	COS
à		Module – 3			
5	a.	Solve $x \frac{dy}{dx} + y = x^3 y^6$ .	7	L3	CO
1	b.	Solve that the family of parabolas $y^2 = 4a(x + a)$ are self orthogonal.	7	L3	CO
	c.	Solve $\frac{dy}{dx} - \frac{dx}{dy} = \frac{x}{y} - \frac{y}{x}$ .	6	L2	CO
	1	OR			1
6	a.	Solve $(y \log y) dx + (x - \log y) dy = 0$ .	7	L3	CO
C. C. C. SON	b.	A body originally at 80°C cools down to 60°C in 20 minutes in the surrounding temperature 40°C. Find the temperature of the body after 40 minutes.		1.2	CO
	c.	Find the general and singular solutions of $p = log(px - y)$ .	6	L2	CO
Sim		1 of 2			100

		( ) (	BN	TATO
	1 1213	Module – 4		
7	a.	Solve $(D^3 - 7D^2 + 14D - 8)y = 0$ .	7	L2
13	b.	Solve $(D^2 + 1)y = \csc x$ . cot x by the method of variation of parameters.	7	L3
49	c.	Solve $x^2y'' + 4xy' + 2y = x^2$ .	6	L3
		OR		
3	a.	Solve $[(D^2 + 6D + 9)D^2]y = 0$ .	7	L2
	b.	Solve $(D^3 + 4D)y = \sin 2x$ .	7	L3
	c.	Solve $(1 + x)^2 y'' + (1 + x)y' + y = 2 \sin [\log (1 + x)].$	6	L3
		Module – 5		
			7	LI
	a.	Find the rank of the matrix $\begin{vmatrix} -2 & -3 & 1 & 2 \\ -3 & -4 & 5 & 8 \end{vmatrix}$ .		
II.		-3 -4 5 8		
		1 3 10 14		
	b.	Solve the system of equations :	7	L3
	0.	x + 0y + 2z = 2		
		$ \begin{vmatrix} x + 6y + 2z & 2 \\ 0x + y + z = 3 \end{vmatrix} $		1000
		$\begin{vmatrix} 2x + y + 0z = 1 \end{vmatrix}$		
		By Gauss elimination method.		
_	c.	Using Rayleigh's power method, find the largest eigen value and the	6	L3
	\ C.	$\begin{bmatrix} 6 & -2 & 2 \end{bmatrix}$		
		corresponding eigen vector of the matrix $\begin{bmatrix} -2 & 3 & -1 \end{bmatrix}$ , taking $\mathbf{x}^{(0)} = \begin{bmatrix} 1, 1, 1 \end{bmatrix}^T$ .		
		2 1 3		
		OR		
0	a.	Apply Gauss-Seidel method to solve the equations:	7	L2
U	a.	10x + 2y + z = 9		
		2x + 20y - 2z = -44		
		-2x + 3y + 10z = 22.		
-	b.	Find for what values of $\alpha$ and $\beta$ , so that the equations :	7	L
	0.	x + y + z = 6		
		x + 2y + 3z = 10		
		$x + 2y + \alpha z = \beta$	Ton	
		have:		
		j) no solution		
		ii) a many solutions		
		iii) unique solution.		
	-	Using modern mathematical tools, write a programme to test consistency of	6	L
	c.	Using modern mathematical tools, write a programme to test consistency of	0	
		the equations: $x = 2x - 3 = 1$	4 76	
		$\begin{array}{cccccccccccccccccccccccccccccccccccc$		
		2x + y + 4z = 2		
		3x + 3y + 4z = 1.		
	-34 95 10 1		1 100	C C 17

# First Semester B.E./B.Tech. Degree Examination, June/July 2025 Mathematics - I for ME Stream

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M: Marks, L: Bloom's level, C: Course outcomes.

3. VTU Mathematics formula Handbook is permitted.

		Module – 1	M	L	C
Q.1	a.	Derive an expression for Angle between radius vector and tangent.	6	L2	CO1
	b.	Find the pedal equation for the curve $r^2 = a^2 \sec 2\theta$ .	7	L2	CO1
	c.	Find the radius of curvature of the curve $x^3 + y^3 = 2a^3$ at the point $(a, a)$ .	7	L3	CO1
		OR		L	
Q.2	a.	With usual notation prove that $\rho = \frac{(1+y_1^2)^{\frac{3}{2}}}{y_2}.$	7	L2	CO1
	b.	Prove that the pair of polar curves intersect orthogonally $r^n = a^n \cos n \theta$ , $r^n = b^n \sin n \theta$ .	8	L2	CO1
	c.	Using modern mathematical tool, write a programme code to plot sine and cosine curves.	5	L3	CO5
		Module - 2			
Q.3	a.	Expand cos x by Maclaurin's series upto the containing x ⁴ .	6	L2	CO2
	b.	If $u = tan^{-1} \left(\frac{y}{x}\right)$ where $x = e^t - e^{-t}$ and $y = e^t + e^{-t}$ , find $\left(\frac{du}{dt}\right)$ .	7	L2	CO2
	c.	Show that $f(x, y) = x^3 + y^3 - 3xy + 1$ is minimum at the point $(1, 1)$ .	7	L3	CO2
		OR			
Q.4	a.	Evaluate $x \to 0 \left(\frac{\sin x}{x}\right)^{1/x^2}$ .	8	L2	CO2
	b.	If $U = x + y + z$ , $V = y - z$ , $W = z$ , find $\frac{\partial(u, v, w)}{\partial(x, y, z)}$ .	7	L2	CO2
	c.	Using modern mathematical tool, write a program to prove $u_{xx} + u_{yy} = 0$ . If $u = e^x [x \cos y - y \sin y]$ .	5	L3	CO5
				L	

		Module – 3		46	20
Q.5	a.	Solve: $\frac{dy}{dx} + \frac{y}{x} = y^2x$ .	6	L2	0
	b.	Solve $(5x^4 + 3x^2y^2 - 2xy^3) dx + (2x^3y - 3x^2y^2 - 5y^4)dy = 0$ .	7	L2	0
	c.	Solve $yp^2 + (x-y) p - x = 0$ .	7	L2	(
		OR	1		1
Q.6	a.	Obtain the General and Singular solution of the equation $p = log (px - y)$ .	6	L2	0
	b.	Define Newton's law of cooling. A body in air at 25°C cools from 100°C to 75 °C in 1 minute. Find the temperature of the body at the end of 3 minutes.	7	L3	(
	c.	Solve the equation $(px - y)(py+x) = 2p$ by reducing into Clairaut's from taking the substitution $X = x^2$ , $Y = y^2$ .	7	L2	(
				Tall.	
0.7		Module – 4		100	
Q.7	a.	Solve: $y''' + 6y'' + 11y' + 6y = 0$ .	6	L2	(
	b.		7	L2	(
	c.	Solve: $y'' + 4y = 4 \sec^2 2x$ by the method of variation of parameter.	7	L2	C
		OR			
Q.8			6	L2	(
	b.	$\int \int $	7	L2	(
	c.	Solve: $(1 + x)^2 y'' + (1 + x) y' + y = 2 \cos[\log (1 + x)].$	7	L2	C
0.0	Т.	Module - 5	1.2	Piche.	
Q.9	a.	[0 2 3 4]	6	L2	C
	***	2 3 5 4			100
	ANG.	[4 8 13 12]			The same of
	b.	2x + y - z = 3 by Gauss Elimination method. $x - 2y + 3z = 8$ ;	7	L3	C
	c.	Solve the following system of equations by Gauss – Seidal method: 10x + y + z = 12; $x + 10y + z = 12$ ; $x + y + 10z = 12$ for 4 Iterations.	7	1.3	C
	17	OR	11	1 100	

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Q.10	a.	Test for consistency and solve : $x - 4y + 7z = 14$ , $3x + 8y - 2z = 13$ ; $7x - 8y + 26z = 5$ .	7	L2	CO4
	b.	Find the largest eigen value and corresponding eigen vector of matrix $ \begin{pmatrix} 6 & -2 & 2 \\ -2 & 3 & -1 \\ 2 & -1 & 3 \end{pmatrix} $ by power method, by taking initial eigen vector $(1, 1, 1)^T$ carryout upto 5 Iteration.	8	L3	CO4
	c.	Using modern mathematical tool write a programme to sovle the system of equations $5x - y - z = -3$ ; $x - 5y + z = -9$ ; $2x + y - 4z = 15$ by Gauss Siedal method.	5	L3	CO5

Max. Marks: 100

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## First Semester B.E./B.Tech. Degree Examination, June/July 2025 Mathematics-I for EEE Stream

Time: 3 hrs.

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. M: Marks, L: Bloom's level, C: Course outcomes.

3. VTU Formula Hand Book is permitted

		Module – 1	M	L	C
Q.1	a.	With usual notation prove that $\frac{1}{p^2} = \frac{1}{r^2} + \frac{1}{r^4} \left(\frac{dr}{d\theta}\right)^2.$	6	L2	COI
1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	b.	Find the angle between the curves $r = a(1 - \cos\theta)$ and $r = 2a \cos\theta$ .	7	L2	CO1
± 16	c.	Find the radius of curvature of the curve $\sqrt{x} + \sqrt{y} = \sqrt{a}$ at the point where it cuts the line $y = x$ .	7	L2	CO1
		OR			
Q.2	a.	Derive an expression for the radius of curvature for a Cartesian curve.	8	L2	CO1
	b.	Find the pedal equation of the curve $r^n = a^n \cdot secn \theta$ .	7	L2	CO1
	c.	Using modern mathematical tool write a programme code to plot sine and cosine curve.	5	L3	CO5
A2 (A2)		Module – 2	-		
Q.3	a.	Expand $\sqrt{1+\sin 2x}$ by Maclaurin's series upto the term containing $x^4$ .	6	L2	CO1
	b.	If $\mathbf{u} = \mathbf{f} \left( \frac{\mathbf{y} - \mathbf{x}}{\mathbf{x} \mathbf{y}} \cdot \frac{\mathbf{z} - \mathbf{x}}{\mathbf{z} \mathbf{x}} \right)$ then find the value of $\mathbf{x}^2 \frac{\partial \mathbf{u}}{\partial \mathbf{x}} + \mathbf{y}^2 \frac{\partial \mathbf{u}}{\partial \mathbf{y}} + \mathbf{z}^2 \frac{\partial \mathbf{u}}{\partial \mathbf{z}}$ .	7	L2	CO1
	c.	Find the maximum and minimum value of the function $x^3 + 3xy^2 - 15x^2 - 15y^2 + 72x$ .	7	L3	CO2
- N	100	OR		T	000
QA	2.	OR  If $u = x + 3y^2 - z^3$ , $v = 4x^2yz$ , $w = 2z^2 - xy$ then find $J = \frac{\partial(u, v, w)}{\partial(x, y, z)}$ at $(1, -1, 0)$	8	L3	CO2
	b.	Evaluate $\lim_{x\to 0} \left(\frac{a^x + b^x + c^x}{3}\right)^{\frac{1}{2}}$ .	7	L2	CO2
	c.	Using modern mathematical tool, write a programs/code. Show that $u_{xx} + u_{yy} = 0$ , given $u = e^x [x \cos y - y \sin y]$	5	L3	CO5

Alti 12.7	AMA Bylo	THE CHANGEY	,	BM	4
124 C	in Ir.	Module – 3	_		_
2.5	a.	Solve $\frac{dy}{dx} + y \cdot \tan x = y^3 \sec x$ .	4	6 1	_2
	b.	Find the orthogonal trajectories of the family of curves $\frac{x^2}{a^2} + \frac{y^2}{b^2 + \lambda} = 1$ Where $\lambda$ is the parameter?	7	L	.3
	c.	Solve $\frac{dy}{dx} - \frac{dx}{dy} = \frac{x}{y} - \frac{y}{x}$ .	7	L	2
	16	OR	1		_
Q.6	a.	Solve $(xy + y^2 + y)dx + (x^2 + 3xy + 2x) dy = 0$ .	6		
	b.	An inductance of 2 henries and resistance of 20 ohms are connected in series with an emf E Volts. If the current is zero when $t = 0$ , find the current at the end of 0.01 secs if $E = 100$ volts.	7	L3	}
Y Car	c.	Find the general and singular solution of the Clairaut's equation. $(y - px)(p - 1) = p$ .	7	L2	
		Module – 4			_
Q.7	a.	Evaluate $\int_{-1}^{+1} \int_{0}^{z} \int_{x-z}^{x+z} (x+y+z) dy dx dz$ .	6	L2	
- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	b.	Prove that $\beta(m,n) = \frac{\lceil m \cdot \rceil n}{\lceil m+n \rceil}$ .	7	L2	
	c.	Change the order of integration and evaluate $\int_{0}^{a} \int_{y}^{a} \frac{x}{x^2 + y^2} dxdy$ .	7	L2	
		OR			_
Q.8	a.	Evaluate $\int_{0}^{\infty} \int_{0}^{e^{-(x^2+y^2)}} dxdy$ by changing into polar coordinates.	6	L2	
18'	b.	Using double integration find the area bounded between the circle $x^2 + y^2 = a^2$ and the line $x + y = a$ .	7	L2	
	c.	Prove that $\int_{0}^{\pi/2} \sqrt{\sin \theta} \ d\theta \times \int_{0}^{\pi/2} \frac{d\theta}{\sqrt{\sin \theta}} = \pi.$	7	L2	-
0.0	T.	Module - 5			_
Q.9	a.	Find the Rank of the matrix $A = \begin{pmatrix} 4 & 0 & 2 & 1 \\ 2 & 1 & 3 & 4 \\ 2 & 3 & 4 & 7 \\ 2 & 3 & 1 & 4 \end{pmatrix}.$	6	L2	(
	b.	Solve by Gauss – Jordan method $2x + y + 4z = 12$ , $8x - 3y + 2z = 20$ , $4x + 11y - z = 33$ .			

0 12		c.	Using Rayleigh's power method find the dominant eigen value and the corresponding eigen vector of $A = \begin{pmatrix} 4 & 1 & -1 \\ 2 & 3 & -1 \\ -2 & 1 & 5 \end{pmatrix}$ by taking $(1, 0, 0)^T$ as the initial eigen vector. Carry out 5 iterations.	7	L3	CO4
		A.	OR			
	Q.10	a.	Solve the following system of equations by Gauss – Seidal method $5x + 2y + z = 12$ x + 4y + 2z = 15 x + 2y + 5z = 20. Carry out 3 iterations with (1, 0, 3) as initial approximation.	8	L3	CO4
		b.	Solve the following system of equations by Gauss – elimination method. x + y + z = 9 2x + y - z = 0 2x + 5y + 7z = 52	7	L3	CO4
		c.	Using modern mathematical tool, write programme to test the consistency of the equation $x + 2y - z = 1$ $2x + y + 4z = 2$ $3x + 3y + 4z = 1$ .	5	L3	CO5

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# First Semester B.E./B.Tech. Degree Examination, June/July 2025 Introduction to Mechanical Engineering

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M: Marks, L: Bloom's level, C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain briefly the emerging trends of mechanical engineering in Automobile and Energy Sectors.	10	L2	CO1
	b.	Discuss on the roles of mechanical engineers in different sectors.	10	L2	CO1
6E.7	-	OR			
Q.2	a.	Describe the construction and working of hydel power plant with a schematic diagram.	10	L2	CO1
	b.	Brief on the following environmental issues (causes and remedies) i) Global warming ii) Ozone layer depletion.	10	L2	CO1
de e		Module – 2			
Q.3	a.	Explain the working principal of drilling with schematic diagram.	8	L2	CO2
	b.	Illustrate the following operations of Milling with sketches. i) Plane milling ii) Slot milling.	6	L3	CO2
	c.	Explain the following operations of lathe i) Turning ii) Knurling.	6	L2	CO2
1	-	OR			
Q.4	a.	Explain the different methods of manufacturing	4	L2	CO2
	b.	Define Additive Manufacturing. Brief on steps involved in 3D printing with a block diagram.	10	L2	CO2
	c.	Describe the various components of CNC with schematic diagram.	6	L2	CO2
		Module – 3			
Q.5	a.		4	L1	CO3
	b.	A.Y	10	L4	CO3
5	c.	**	6	L1	CO3
MAL I		OR			-
Q.6	a.	Describe Electric Vehicles. Explain the components and working of Electric Vehicles.	10	L2	CO3
	b	Describe Hybrid Vehicles. Explain the components and working of Hybrid Vehicles.	10	L2	CO3
L	l	l of 2			

AND THE		Module – 4	_		
Q.7	a.	Recite the classification of metals.	5	L1	CO
4.4	b.	Describe the three types of carbon steels with applications.	9	L2	CO
	c.	Describe the following materials i) Graphite ii) Aluminum Alloy.	6	L2	CO ₄
	A 25	OR			
Q.8	ล.	Describe the construction and writing of gas welding process with neat sketch.	10	L2	CO4
	b.	List the differences between soldering brazing and welding.	10	L1	CO4
		Module – 5			
Q.9	a.	Based on the configuration, explain the four types of robots with sketch.	10	L3	CO5
	b.	Define Mechatronics. List the difference between open loop and closed loop systems.	10	L1	COS
		OR			
Q.10	a.	Describe the communication models with respect to IoT.	5	L1	COS
* 8	b.	Define IoT. List the characteristics of IoT.	5	L1	COS
1	c.	Describe the basic elements of automation system with a block diagram.	10	L2	COS

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