

**B.L.D.E.A's V.P.Dr.P.G.HALAKATTI COLLEGE OF ENGINEERING AND
TECHNOLOGY VIJYAPUR 586103**

INDEX FILE SEMESTER QUESTION PAPERS JAN/FEB 2023

FIRST YEAR ALL BRANCHES

S.N.	SUB CODE	SUBJECT CODE	PAGE No
		21 SCHEME	
1	21MAT11	Calculus and Differential Equations	01
2	21CIV14/24	Elements of Civil Engineering and Mechanics	03
3	21EME25/15	Elements of Mechanical Engineering	06
4	21ELE13/23	Basic Electrical Engineering	08
5	21PHY 12/22	Engineering Physics	10
6	21ELN24/14	Basic Electronics and Communication Engineering	12
7	21PSP23/13	Problem Solving Through Programming	14
8	21CHE 22/12	Engineering Chemistry	16
		22 SCHEME	
1	BMATC101	Mathematics for Civil Engg Stream-I	18
2	BPHYS102	Physics for CSE Stream	20
3	BCHES102	Applied Chemistry for CSE Stream	22
4	BPOPS103	Principles of Programming Using C	24
5	BESCK104A	Introduction to Civil Engineering	26
6	BETCK105I	_Introduction to Cyber Security	29
7	BETCK105	Introduction to IOT	31
8	BPLCK105B	Introduction to Python Programming	33
9	BENGGK106	Communicative English	35
10	BETCK105E	Renewable Energy Sources	39
11	BKSKK107	Samskrutika Kannada	41
12	BKBKK107	Balake Kannada	47
13	BCIVC103	Engineering Mechanics	52
14	BESCK104B	Introduction to Electrical Engineering	56
15	BICOK107	Indian Constitution	59

USN

--	--	--	--	--	--	--	--	--	--

21MAT11

First Semester B.E. Degree Examination, Jan./Feb. 2023 Calculus and Differential Equation

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Derive with usual notations $\frac{1}{p^2} = \frac{1}{r^2} + \frac{1}{r^4} \left(\frac{dr}{d\theta} \right)^2$. (06 Marks)
- b. Prove that the curves $r^n = a^n \cos n\theta$ and $r^n = a^n \sin n\theta$ intersect orthogonally. (07 Marks)
- c. Find the radius of curvature of the curve $x^4 + y^4 = 2$ at $(1, 1)$. (07 Marks)

OR

- 2 a. Derive an expression for radius of curvature in Cartesian form. (06 Marks)
- b. Find the angle of intersection between two curves $r = a \sec^2(\theta/2)$ and $r = b \operatorname{cosec}^2(\theta/2)$. (07 Marks)
- c. Find the radius of curvature of the curve $r^2 = a^2 \cos 2\theta$. (07 Marks)

Module-2

- 3 a. Expand $\log(1 + \sin x)$ by Maclaurin's series upto 4th degree terms. (06 Marks)
- b. If $Z = xy^2 + x^2y$, where $x = at^2$, $y = 2at$, find the total derivative $\frac{dz}{dt}$. (07 Marks)
- c. Find the maximum value of the function $f(x, y) = x^3 y^2 (1 - x - y)$ for $x \neq 0$, $y \neq 0$. (07 Marks)

OR

- 4 a. Expand $\log(1 + e^x)$ using Maclaurin's series upto 4th degree terms. (06 Marks)
- b. Evaluate $\lim_{x \rightarrow 0} \left(\frac{\sin x}{x} \right)^{1/x^2}$. (07 Marks)
- c. If $u = x^2 + y^2 + z^2$, $v = xy + yz + zx$ and $w = x + y + z$, find the value of Jacobian $\frac{\partial(u, v, w)}{\partial(x, y, z)}$. (07 Marks)

Module-3

- 5 a. Solve $\frac{dy}{dx} + \frac{y}{x} = y^2 x$. (06 Marks)
- b. Find the orthogonal trajectories of the family of curves $x^2 + y^2 + 2\lambda x + C = 0$, λ - parameter. (07 Marks)
- c. Solve $x^2 p^2 + 3xyp + 2y^2 = 0$ where $P = \frac{dy}{dx}$. (07 Marks)

OR

- 6 a. Solve $y(y+x)dx + (x+2y-1)dy = 0$. (06 Marks)
 b. A body originally at 80°C cools down to 60°C in 20 min, the temperature of the air being 40°C . What will be the temperature of the body after 40 min from the original? (07 Marks)
 c. Solve $(y-px)(p-1) = p$ by reducing to Clairaut's form. (07 Marks)

Module-4

- 7 a. Solve $(D^3 - 4D^2 + 4D)y = 0$. (06 Marks)
 b. Solve $(D-2)^2y = 8(e^{2x} + 3)$. (07 Marks)
 c. Solve $x^2 \frac{d^2y}{dx^2} - x \frac{dy}{dx} - 3y = x^2$. (07 Marks)

OR

- 8 a. Solve $(D^3 - 6D^2 + 11D - 6)y = e^{-2x} + e^{-3x}$. (06 Marks)
 b. Apply the method of variation of parameters to solve $\frac{d^2y}{dx^2} + 4y = 4 \sec 2x$. (07 Marks)
 c. Solve $(1+x)^2 \frac{d^2y}{dx^2} + (1+x) \frac{dy}{dx} + y = 2 \sin \log(1+x)$. (07 Marks)

Module-5

- 9 a. Find the rank of the matrix $A = \begin{bmatrix} 2 & 3 & -1 & -1 \\ 1 & -1 & -2 & -4 \\ 3 & 1 & 3 & -2 \\ 6 & 3 & 0 & -7 \end{bmatrix}$. (06 Marks)
 b. Apply Gauss-Jordan method to solve the system of linear equations:
 $x + y + z = 9$
 $x - 2y + 3z = 8$
 $2x + y - z = 3$ (07 Marks)
 c. Use Gauss-Seidel method to solve the system of linear equations iteratively (3 iterations).
 $20x + y - 2z = 17$
 $3x + 20y - z = -18$
 $2x - 3y + 20z = 25$ (07 Marks)

OR

- 10 a. Test the following system for consistency and solve if the system is consistent:
 $x + 2y + 3z = 1$
 $2x + 3y + 8z = 2$
 $x + y + z = 3$ (06 Marks)
 b. Use Gauss elimination method to solve the system of equations
 $x + 4y - z = -5$, $x + y - 6z = -12$, $3x - y - z = 4$. (07 Marks)
 c. Determine the largest Eigen value and the corresponding Eigen vector of the matrix

$$A = \begin{bmatrix} 2 & -1 & 0 \\ -1 & 2 & -1 \\ 0 & -1 & 2 \end{bmatrix}$$

Choose initial eigen vector as $[1 \ 0 \ 0]^T$. Carryout 5 iterations. (07 Marks)

--	--	--	--	--	--	--	--	--	--

First/Second Semester B.E. Degree Examination, Jan./Feb. 2023 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. Describe the role of Civil Engineer in the development of nation. (10 Marks)
- b. List the different fields of Civil Engineering. Explain any four of them. (10 Marks)

OR

- 2 a. Describe the building material Brick with neat sketch. (10 Marks)
- b. Describe the different types of concrete. (10 Marks)

Module-2

- 3 a. State and prove parallelogram law of forces. (08 Marks)
- b. Find the magnitude, direction and position of the resultant with respect to point 'A' for the force system shown in Fig.Q3(b).

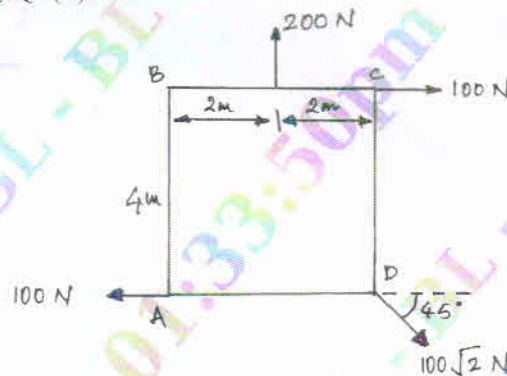


Fig.Q3(b)

(12 Marks)

OR

- 4 a. State and prove Varignon's theorem. (08 Marks)
- b. The coefficient of friction are $\mu_s = 0.3$ and $\mu_k = 0.25$ between all surfaces of contact. Determine the smallest force 'P' required to just start block 'D' moving if
 - i) Block 'C' restrained by cable AB
 - ii) Cable AB is removed.
 Refer Fig.Q4(b).

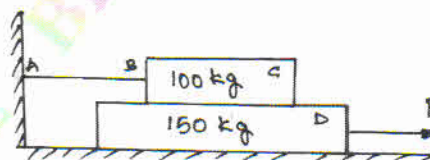


Fig.Q4(b)

(12 Marks)

Module-3

- 5 a. Determine the centroid of triangle by method of integration. (08 Marks)
- b. Locate the centroid of plane lamina shown in Fig.Q5(b). (12 Marks)

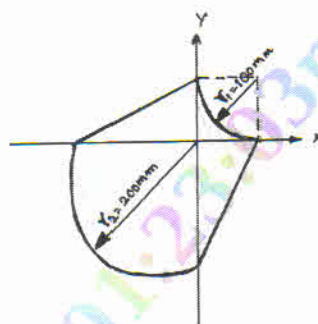


Fig.Q5(b)

OR

- 6 a. State and prove Parallel Axis theorem. (08 Marks)
 b. Determine the Polar moment of inertia for the lamina shown in Fig.Q6(b).

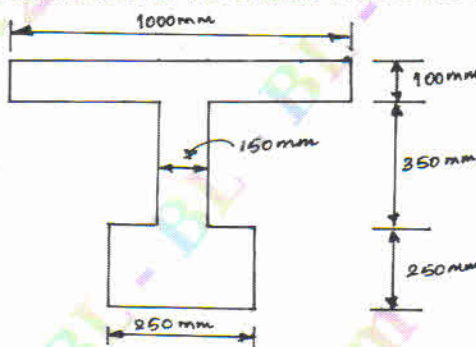


Fig.Q6(b)

(12 Marks)

Module-4

- 7 a. Explain the different types of beams with neat sketches. (08 Marks)
 b. Determine the support reactions at A and B for the beam shown in Fig.Q7(b).

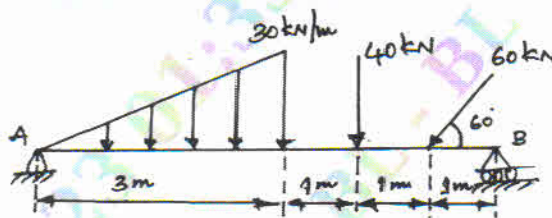


Fig.Q7(b)

(12 Marks)

OR

- 8 a. What are the assumptions made in the analysis of simple truss? (05 Marks)
 b. Find the support reactions and member forces for the pin jointed plane truss shown in Fig.Q8(b).

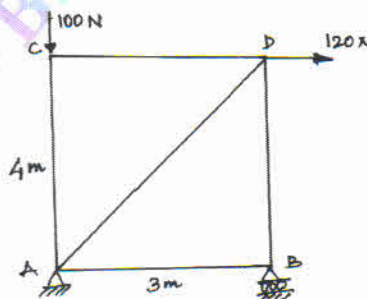


Fig.Q8(b)

(15 Marks)

Module-5

- 9 a. Derive all the three equations of motion in kinematics. (06 Marks)
- b. The motion of a particle is defined by the relation $x = t^2 - (t - 3)^2$ m where x and t are in meters and seconds respectively. Determine (i) The time when velocity is maximum (ii) the position and maximum velocity. (06 Marks)
- c. A stone is thrown upward with a velocity of 40m/s. Determine the time of the stone when it is at a height of 10m and is moving downwards. (08 Marks)

OR

- 10 a. Explain the D'Alembert's principle. (06 Marks)
- b. A projectile is launched from a gun, after 3.783 seconds, the velocity of the projectile is observed to make an angle of 30° with the horizontal and at 4.79 seconds it reaches its maximum height, Calculate the initial velocity and angle of projection. (06 Marks)
- c. A hockey player hits a pack so that it comes to rest in 9 seconds after sliding 30m, horizontally on the ice. Determine
- The initial velocity of the Puck.
 - The coefficient of friction between puck and ice. (08 Marks)

CBCS SCHEME



USN

--	--	--	--	--	--	--	--	--	--

21EME15/25

First/Second Semester B.E. Degree Examination, Jan./Feb. 2023 Elements of Mechanical Engineering

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Use of thermodynamic data handbook is permitted.*

Module-1

- 1 a. Explain the formation of steam with the help of Temperature – Enthalpy [T – H] diagram. (10 Marks)
b. With a neat sketch explain, construction and working principle of Hydel power plant. (10 Marks)

OR

- 2 a. Find the enthalpy of 2 kg of steam at 12 bar when
i) Steam is dry saturated
ii) Steam is 85% dry
iii) Superheated at 250°C
Assume the specific heat of superheated steam as 2.25 kJ/kg-K. (10 Marks)
b. With a neat sketch explain the working principle of Pelton turbine. (10 Marks)

Module-2

- 3 a. Write a note on:
i) Piezo - electric materials
ii) Glass
iii) Semi-conductors
iv) Shape-memory alloys (08 Marks)
b. Differentiate between soldering, brazing and welding processes. (12 Marks)

OR

- 4 a. With the help of neat sketch explain Oxy-acetylene gas welding process. (10 Marks)
b. Write a note on three modes of heat transfer phenomena. (10 Marks)

Module-3

- 5 a. Explain with the help of theoretical P-V diagram working of four stroke diesel engine. (10 Marks)
b. Define the following :
i) Refrigeration process
ii) Refrigeration effect
iii) Ton of refrigeration
iv) COP
v) Air-conditioning process. (10 Marks)

OR

- 6 a. List and explain the desirable properties of a good refrigerant. (10 Marks)
b. With the help of neat sketch, explain the working principle of room air-conditioning system. (10 Marks)

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

Module-4

- 7 a. Define velocity ratio of belt drives. Explain with a neat sketch open belt drive. (10 Marks)
b. Define Machines and Mechanisms. Enumerate the applications of linear motion, oscillatory motion and rotary motion. (10 Marks)

OR

- 8 a. Give a brief comparison between belt drive and gear drive. (06 Marks)
b. Write a note on :
i) Spur Gear ii) Bevel Gear (04 Marks)
c. Define Robotics. With a neat sketch explain Jointed-arm configuration robot. (10 Marks)

Module-5

- 9 a. With a help of necessary sketches explain the following lathe operations :
i) Turning
ii) Facing
iii) Knurling
iv) Taper turning by swivelling compound rest. (12 Marks)
b. Explain the components of CNC machine with a neat block diagram. (08 Marks)

OR

- 10 a. Explain with a neat sketch the following operations:
i) Plane milling
ii) End milling
iii) Drilling
iv) Boring (12 Marks)
b. Define mechatronics. With a neat block diagram explain closed loop control system. (08 Marks)

CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

21ELE13/23

First/Second Semester B.E. Degree Examination, Jan./Feb. 2023 Basic Electrical Engineering

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. State and explain Kirchoff's laws as applied to an electric circuit. (06 Marks)
- b. Derive the relation between i) RMS value and maximum value ii) Average value and maximum value for a purely sinusoidal alternating quantity. (08 Marks)
- c. A resistance of 10Ω is connected in series with two resistances each of 15Ω arranged in parallel. What resistance must be shunted across this parallel combination, so that the total current will be $1.5A$ from $20V$ supply applied? (06 Marks)

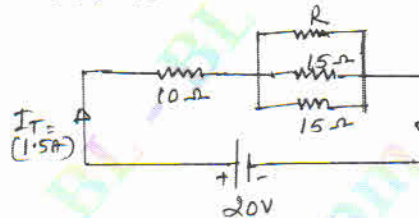


Fig.Q.1(c)

OR

- 2 a. State and explain maximum power Transfer theorem as applied to the DC series circuit. (06 Marks)
- b. Show that power consumed by the pure capacitor is zero. Draw the voltage, current and power waveforms. (08 Marks)
- c. The equation of an alternating current is given by $i = 42.42 \sin 628t$. Calculate its i) Maximum value ii) Frequency iii) RMS value iv) Average value v) Form factor vi) Peak factor. (06 Marks)

Module-2

- 3 a. Analyze the R-C series circuit and show that current leads the voltage, using phasor diagram. (07 Marks)
- b. Deduce the relationship between line and phase value of voltage and current in 3ϕ star connection. Also write 3ϕ power equation. (06 Marks)
- c. A circuit consists of a resistance 10Ω , an inductance of $16mH$ and a capacitor of $150\mu F$ connected in series. A supply of $100V$, $50Hz$ is applied to the circuit. Find the current, power factor and power consumed by the circuit. Draw the phasor diagram. (07 Marks)

OR

- 4 a. Show that only two-wattmeters are sufficient to measure the 3ϕ power, using phasor diagram. (07 Marks)
- b. Deduce the relationship between line and phase values of current in 3ϕ delta connection. Also write the 3ϕ power equations. (06 Marks)
- c. Three similar chocking coils each having resistance of 10Ω and inductive reactance of 10Ω are connected in star across a $440V$, $50Hz$ supply. Find the line current and readings of each of two wattmeters. (07 Marks)

Module-3

- 5 a. With a neat sketch, explain the construction of various parts of DC generator. (08 Marks)
 b. Derive the torque equation of DC motor with usual notation. (06 Marks)
 c. The primary winding of a transformer is connected to a 240V, 50Hz supply. The secondary winding has 1500 turns. If maximum flux of the core is 0.00207 Wb. Determine: i) The secondary induced emf ii) No. of turns in the primary iii) Core area, if the maximum Flux density is given 0.465 Wb/m^2 . (06 Marks)

OR

- 6 a. Derive the condition for maximum efficiency of a single phase transformer. (08 Marks)
 b. With usual notation, derive the EMF equation of a DC generator. (06 Marks)
 c. A 4-pole, 500V, dc shunt motor have 720 conductors with wave connected on its armature. If the full load current is 60A and the flux per pole is 0.03Wb. The armature resistance and shunt field resistance are 0.2Ω and 250Ω respectively and the contact drop is 1 volt per brush. Calculate the full load speed of the motor. (06 Marks)

Module-4

- 7 a. Explain the concept of rotating magnetic field of 3ϕ induction motor, with the help of vector diagrams. (08 Marks)
 b. With usual notation, derive the EMF equation of 3ϕ synchronous generator. (06 Marks)
 c. A 3ϕ , 6 pole, star connected alternator has an armature with 90 slots and 12 conductors per slot. If it rotates at 1000 rpm, the flux per pole is 0.05Wb. Calculate the line value of emf generated. If short pitch factor is 0.97 and distribution factor is 0.96. (06 Marks)

OR

- 8 a. List the difference between salient pole type rotor and non salient pole type rotor construction. (08 Marks)
 b. Define slip, derive the expression for frequency of rotor current. (06 Marks)
 c. A 6 pole alternator runs at 1000rpm supplies power to a 4 pole Induction motor. The frequency of rotor of induction motor is 2Hz. Determine the slip and speed of the motor. (06 Marks)

Module-5

- 9 a. Draw and explain the single line diagram of a typical transmission and distribution system scheme. (08 Marks)
 b. What is earthing? With a neat diagram explain pipe earthing. (06 Marks)
 c. Explain the working principle of fuse and MCB. (06 Marks)

OR

- 10 a. What are the desirable characteristics of a tariff and explain two-part tariff. (08 Marks)
 b. What is electric shock? What are the safety precautions to be taken while working with electricity to avoid shock? (06 Marks)
 c. With the help of block diagram, discuss low voltage distribution system. (400V and 230V) for various consumers. (06 Marks)

CBCS SCHEME

B.L.D.E. ASSOCIATION'S
VACHANA PITAMAH
DR. B.S. LAKATTI
COLLEGE OF ENGINEERING
LIBRARY, BHAJAPUR.

USN

--	--	--	--	--	--	--	--	--	--

21PHY12/22

First/Second Semester B.E. Degree Examination, Jan./Feb. 2023 Engineering Physics

Time: 3 hrs.

Max. Marks: 100

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

2. Constants : Speed of light " C " = $3 \times 10^8 \text{ ms}^{-1}$,

Boltzmann constant " K " = $1.38 \times 10^{-23} \text{ JK}^{-1}$, Planck's constant

" h " = $6.625 \times 10^{-34} \text{ JS}$, Acceleration due to gravity " g " = 9.8 MS^{-2}
permittivity of free space. " ϵ_0 " = $8.854 \times 10^{-12} \text{ FM}^{-1}$.

Module-1

- a. What are damped oscillations? Discuss the theory of damped oscillations and derive general solution of damped oscillations. (10 Marks)
- b. Discuss the classification of waves based on Mach number. (06 Marks)
- c. For a particle executing SHM, the acceleration is found to be 15 cm/s^2 when it is at 3 cm from its mean position. Calculate the period of oscillation. (04 Marks)

OR

- a. Describe the construction and working of Reddy's shock tube. Explain any four applications of shockwaves. (10 Marks)
- b. Define simple harmonic motion and derive differential equation of SHM. (06 Marks)
- c. The time taken to travel between two sensors of the shock tube is $195 \mu\text{s}$. If the distance between the sensors is 0.1 m , find the Mach number of shockwaves produced. (04 Marks)

Module-2

- a. Deduce Wein's equation and Rayleigh Jeans equation from Planck's equation and show that Planck's theory explains complete black body spectrum. (08 Marks)
- b. State and explain Heisenberg's uncertainty principle and apply it to prove that free electron cannot exist inside the nucleus of atom. (08 Marks)
- c. Calculate the de-Broglie wavelength associated with an electron accelerated to a potential 2 KV . Also calculate the velocity of electron. Assume $m = 9.1 \times 10^{-31} \text{ kg}$. (04 Marks)

OR

- a. Apply Schrodinger equation for particle in one dimensional potential well of infinite height and derive expression for energy eigen value and eigen function. (10 Marks)
- b. Discuss spectral distribution of energy in black body radiation spectrum and hence explain Wein's displacement law. (06 Marks)
- c. An electron is bound in a one dimensional potential well of width 1 \AA but infinite height. Find its energy eigen values in the ground state and first two excited states. (04 Marks)

Module-3

- a. Explain induced absorption, spontaneous and stimulated emission. Obtain an expression for density of states using Einstein's coefficients. (08 Marks)
- b. Define numerical aperture and derive an expression for numerical aperture. (08 Marks)
- c. The ratio of population of two energy levels is 1.059×10^{-30} . Find the wavelength of laser light emitted due to transition between these energy levels at 330 K . (04 Marks)

1 of 2

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

OR

- 6 a. What is attenuation in an optical fiber? Describe the different types of attenuation. (09 Marks)
 b. Describe the construction and working of semiconductor Laser with suitable figures. (07 Marks)
 c. In an optical fiber of core diameter $50\mu\text{m}$ the refractive indices of core and cladding are respectively 1.45 and 1.40. If the wavelength of the light passing through the fiber is 820nm find the numerical aperture, V-number and number of modes of propagation. (04 Marks)

Module-4

- 7 a. Mention the assumptions and failures of classical free electron theory. (09 Marks)
 b. Derive Clausius – Mosotti equation. (07 Marks)
 c. Find the temperature at which there is 1% probability of occupation of an energy level 0.5eV above Fermi energy. (04 Marks)

OR

- 8 a. What is Hall effect? Obtain an expression for Hall coefficient. (09 Marks)
 b. Discuss the variation of Fermi factor with temperature with graph. (07 Marks)
 c. A dielectric material of dielectric constant 6 is subjected to an electric field $500/\text{mm}$. Calculate the polarization produced. (04 Marks)

Module-5

- 9 a. Write the properties and applications of nano composites. (08 Marks)
 b. Describe the principle, construction and working of scanning electron microscope. (08 Marks)
 c. Determine the crystallite size for a cubic crystal ($K = 0.94$) if the wave length of X-rays used is 10nm , the peak width is 0.50 for a peak positioned at 25° . (04 Marks)

OR

- 10 a. With a neat sketch explain the construction and working principle of Atomic Force Microscope. (08 Marks)
 b. Describe the construction and mechanism of X-ray photoelectron spectroscopy. (08 Marks)
 c. X-rays are diffracted at 30° from a crystal of interplanar spacing 0.187nm . If it is a second order diffraction, calculate the wavelength of X-rays. (04 Marks)

CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

21ELN14/24

First/Second Semester B.E. Degree Examination, Jan./Feb. 2023 Basic Electronics and Communication Engineering

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Suggest a circuit that converts ac to dc in which two diodes conducts in the positive half cycle as well as negative half cycle and reduces the ripples. Show all the relevant waveforms. (07 Marks)
- b. A wideband operational amplifier has a slew rate of $20\text{V}/\mu\text{s}$. If the amplifier is used in a circuit with a voltage gain of 30 and input of 50mV is applied to its input, determine the time taken for the output to change level. (06 Marks)
- c. Write the circuit of a sinewave oscillator in which 180° phase shift provided by RC ladder network and another 180° by the transistor. Determine the frequency of oscillations of the above circuit in which $C = 5\text{nF}$ and $R = 25\text{K}\Omega$. (07 Marks)

OR

- 2 a. Write a circuit which regulates the output voltage using zener. If a 10V zener diode has a maximum rated power dissipation of 6.00mw . If the diode is to be used in a simple regulator circuit having a resistance of 600Ω . Determine a suitable value of series resistor for operation in conjunction with a supply voltage of 20V . (08 Marks)
- b. An amplifier with a negative feedback applied has an open-loop voltage gain of 100 and one-twentieth of its output is feedback to the input. Determine the overall voltage gain with negative feedback applied. (06 Marks)
- c. Write the operational amplifier circuit in which the output is differentiation of the input signal. If the input is sine signal, write the resulting output waveform. (06 Marks)

Module-2

- 3 a. Write the 5 stage binary counter using JK bistable circuits. (07 Marks)
- b. Illustrate the input and output states of JK bistable circuit under the following conditions:
i) Preset and clear input ii) Clocked operation. (06 Marks)
- c. Implement a 3 to 8 decoder circuit using basic gates. (07 Marks)

OR

- 4 a. Describe the microcontroller system with typical inputs and outputs. (06 Marks)
- b. Represent the 5 bit shift register circuit and explain the working for the input data 10110. (10 Marks)
- c. Show the implementation of a 4 to 1 Mux. (04 Marks)

Module-3

- 5 a. Bringout the difference between Harvard and Von-Neumann processor. (08 Marks)
- b. Describe the working principle of 7 segment LED display. (08 Marks)
- c. Give 4 examples for serial communication interfaces. (04 Marks)

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

OR

- 6 a. Illustrate the instrumentation and control system. (10 Marks)
b. Describe the working principles behind 3 input and 3 output transducer. (10 Marks)

Module-4

- 7 a. Represent the analog transmitter and receiver section in an communication system. (10 Marks)
b. Explain the concept of multiple access techniques in a wireless communication system. (10 Marks)

OR

- 8 a. Define the following: i) AM ii) FM iii) PAM iv) PWM v) PPM. (10 Marks)
b. Describe multipath and fading effect-in a wireless communication system. (10 Marks)

Module-5

- 9 a. Represent a cellular telephone system and concept of frequency reuse. (10 Marks)
b. Describe the features of GEO and LEO satellites. (10 Marks)

OR

- 10 a. Briefly explain the GSM architecture. (10 Marks)
b. Represent the frequency modulated microwave communication system and explain. (10 Marks)

* * * * *

CBCS SCHEME

B.L.D.E. ASSOCIATION'S
VACHANA PITAMAH
DR. P. S. LAKATTI
COLLEGE OF ENGINEERING
LIBRARY, BIJAPUR.

USN

--	--	--	--	--	--	--	--	--	--

21PSP13/23

First/Second Semester B.E. Degree Examination, Jan./Feb. 2023 Problems Solving through Programming

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Write a neat block diagram of computer and explain its components. (08 Marks)
- b. Define a variable. Explain rules for specifying variables in C language. (06 Marks)
- c. Write a C program to calculate simple interest. Draw the flow chart for the same. (06 Marks)

OR

- 2 a. Explain various types of computer. (08 Marks)
- b. What are input devices? Explain any three types of input devices. (06 Marks)
- c. What is pseudo code? Explain with an example. (06 Marks)

Module-2

- 3 a. Explain for loop, while loop and do while loop along with syntax and example. (08 Marks)
- b. Write a C program to compute the roots of a quadratic equation by accepting the coefficients and print the appropriate message. (08 Marks)
- c. Explain the formatted I/O function of C language with syntax and example. (04 Marks)

OR

- 4 a. Explain the working of simple if-else with syntax and example. (06 Marks)
- b. Develop a C program to plot a Pascal's triangle. (08 Marks)
- c. Explain any three format specifiers of C language. (06 Marks)

Module-3

- 5 a. Define an array. Explain with example how do you declare and initialize 1D array. (08 Marks)
- b. Write a C program to implement Bubble sort algorithm. (08 Marks)
- c. Explain the working of Binary Search Technique. (04 Marks)

OR

- 6 a. Write a C program to implement selection sort algorithm. (08 Marks)
- b. Define a string. Explain any two library functions for string manipulation with syntax and example. (06 Marks)
- c. Discuss the working of following string functions:
(i) strcat() (ii) strcmp() (iii) strcpy() (06 Marks)

Module-4

- 7 a. Define a function. List and explain categories of user defined functions. (08 Marks)
- b. What is recursion? Discuss its working with the help of suitable example. (05 Marks)
- c. Write a program to find the factorial of a given number using function. (07 Marks)

OR

- 8 a. Differentiate between call by value and call by reference with example. (07 Marks)
b. List any five built in function and explain any two. (06 Marks)
c. Explain various ways of passing parameters to the function. (07 Marks)

Module-5

- 9 a. What is a structure? Explain syntax of structure with example. (06 Marks)
b. How union is different from struct? Give an example. (06 Marks)
c. Write a C program to read and print a record of 'n' students details. Using array of structure with four fields as rollno, name, marks, grade. (08 Marks)

OR

- 10 a. Explain with example how to create structure using 'typedef'. (06 Marks)
b. What is a pointer? Write a C program to find sum and mean of 'n' elements in an array using pointers. (08 Marks)
c. Explain five preprocessor directives in C. (06 Marks)

CBCS SCHEME

B.L.D.E. ASSOCIATION'S
VAGHANA PITAMAH
DR. ... KATTI
COLLEGE OF ENGINEERING
LIBRARY, BANGALURU.

USN

--	--	--	--	--	--	--	--	--	--

21CHE12/22

First/Second Semester B.E. Degree Examination, Jan./Feb. 2023 Engineering Chemistry

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- What is electrode potential? Derive Nernst equation for single electrode potential. (07 Marks)
 - Explain construction, working and applications of glass electrode. (07 Marks)
 - Explain the classification of batteries with suitable examples. (06 Marks)

OR

- Discuss the construction, working and applications of Li-ion battery. (07 Marks)
 - Explain Recycling of Li-ion battery by direct cycling method. (07 Marks)
 - An electrochemical cell consists of a copper electrode dipped in 0.5M CuSO_4 and silver electrode dipped in 0.25M AgNO_3 solution. Write the cell scheme, cell reaction. Also calculate the emf. (Standard electrode potential of Cu and Ag are 0.34 and 0.80V respectively). (06 Marks)

Module-2

- Explain electrochemical theory of a corrosion by taking Fe as an example. (07 Marks)
 - What is cathodic protection? Discuss sacrificial anodic method. (07 Marks)
 - Discuss electroplating of chromium with applications. (06 Marks)

OR

- Define electroless plating. Discuss electroless plating of copper. (07 Marks)
 - What is metal finishing? Mention any 5 technological importance. (07 Marks)
 - Explain the influence of following factors on corrosion rate:
 - Ratio of anodic to cathodic area
 - Nature of corrosion product
 - pH. (06 Marks)

Module-3

- Explain the synthesis and applications of polyurethane. (07 Marks)
 - What are biodegradable polymer? Explain the synthesis and applications of polylactic acid. (07 Marks)
 - Give the properties and applications of carbon nanotubes. (06 Marks)

OR

- Explain synthesis of nanomaterials by Sol-Gel method. (07 Marks)
 - What are conducting polymers? Explain the mechanism of conduction in polyaniline. (07 Marks)
 - What are polymer composites? Explain the synthesis and properties of Kevlar Fiber. (06 Marks)

Module-4

- 7 a. Explain any six basic principle of green chemistry. (07 Marks)
b. Explain the synthesis of Adipic acid from benzene and green synthesis from glucose. (07 Marks)
c. Discuss the construction and working of photovoltaic cell. (06 Marks)

OR

- 8 a. Explain the construction and working of methanol-oxygen fuel cell. (07 Marks)
b. Briefly explain the impacts of oxides of nitrogen and oxides of sulphur on environment. (07 Marks)
c. Write short notes on microwave synthesis and bio catalyzed reaction with examples. (06 Marks)

Module-5

- 9 a. What is hard water? Explain the determination of hardness using EDTA titration. (07 Marks)
b. In a COD test, 28.1 and 14.0 cm³ of 0.05N FAS (Ferrous Ammonium Sulphate) solution was required for blank and sample titration respectively. The volume of test sample taken was 25cm³. Calculate the COD of the sample. (07 Marks)
c. Explain conductometric titration method for the determination of mixture of strong acid and weak acid with strong base. (06 Marks)

OR

- 10 a. Explain the principle and instrumentation of colorimetry. (07 Marks)
b. Define the terms normality, molarity and molality. (07 Marks)
c. Define primary and secondary standard solutions, explain briefly the requirement of primary standard solution. (06 Marks)

USN

--	--	--	--	--	--	--	--	--	--

BMATC101

First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 2023
Mathematics – I for Civil Engineering Stream

Time: 3 hrs.

Max. Marks: 100

- Note: 1. 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
Q.1	a.	With usual notations prove that $\tan \phi = r \frac{d\theta}{dr}$.	6	L2	CO1
	b.	Find the angle between the curves $r = 6 \cos \theta$ and $r = 2(1 + \cos \theta)$.	7	L2	CO1
	c.	For the curve $r^m = a^m \cos m\theta$, prove that $\rho = \frac{a^m}{(1+m)r^{m-1}}$.	7	L2	CO1
OR					
Q.2	a.	Derive an expression for the radius of curvature for a Cartesian curve.	7	L2	CO1
	b.	Find the Pedal equation of the curve $\frac{2a}{r} = 1 + \cos \theta$.	8	L2	CO1
	c.	Using Modern mathematical tool. Write a program / code to plot the sine and cosine curve.	5	L3	CO5
Module – 2					
Q.3	a.	Expand $\sqrt{1 + \sin 2x}$ by using Maclaurin's series up to the term containing x^4 .	6	L2	CO1
	b.	If $u = f(r, s, t)$ and $r = \frac{x}{y}$, $s = \frac{y}{z}$, $t = \frac{z}{x}$. Show that, $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} + z \frac{\partial u}{\partial z} = 0$.	7	L2	CO1
	c.	Examine the function $f(x, y) = x^3 + y^3 - 3x - 12y + 20$ for extreme values.	7	L3	CO1
OR					
Q.4	a.	If $z = e^{ax+by} f(ax - by)$ then prove that $b \frac{\partial z}{\partial x} + a \frac{\partial z}{\partial y} = 2abz$.	7	L2	CO1
	b.	If $u = x^2 + y^2 + z^2$, $v = xy + yz + zx$, $w = x + y + z$ find $\frac{\partial(u, v, w)}{\partial(x, y, z)}$.	8	L2	CO1
	c.	Using Modern mathematical tool write a program/code to evaluate $\lim_{x \rightarrow \infty} \left(1 + \frac{1}{x}\right)^x$.	5	L3	CO5
Module – 3					
Q.5	a.	Solve: $\frac{dy}{dx} + y \tan x = y^3 \sec x$.	6	L2	CO2
	b.	Find the orthogonal trajectories of the family of the curves $r^n = a^n \sin n\theta$.	7	L3	CO2
	c.	Solve: $xy \left(\frac{dy}{dx}\right)^2 - (x^2 + y^2) \frac{dy}{dx} + xy = 0$.	7	L2	CO2
OR					
Q.6	a.	Solve: $(y^4 + 2y)dx + (xy^3 + 2y^4 - 4x)dy = 0$.	6	L2	CO3
	b.	A body in air at 25°C cools from 100°C to 75°C in one minute. Find the temperature of the body at the End of 3 minutes.	7	L3	CO2

	c.	Find the general solution of the equation $x^2(y - px) = p^2y$ by reducing into Clairaut's form using the substitution $X = x^2, Y = y^2$.	7	L2	CO3
Module - 4					
Q.7	a.	Solve : $(4D^4 - 8D^3 - 7D^2 + 11D + 6)y = 0$.	6	L2	CO3
	b.	Solve : $(D^2 + 5D + 6)y = \cos x + e^{-2x}$.	7	L2	CO3
	c.	Solve by the method of variation of parameters $\frac{d^2y}{dx^2} + a^2y = \sec ax$.	7	L2	CO3
OR					
Q.8	a.	Solve : $\frac{d^2y}{dx^2} - 4\frac{dy}{dx} + 5y = 0$ subject to $\frac{dy}{dx} = 2, y = 1$ at $x = 0$.	6	L2	CO3
	b.	Solve : $\frac{d^2y}{dx^2} + 4y = x^2 + \cos 2x$.	7	L2	CO3
	c.	Solve : $x^3 \frac{d^3y}{dx^3} + 3x^2 \frac{d^2y}{dx^2} + x \frac{dy}{dx} + 8y = 65 \cos(\log x)$.	7	L2	CO3
Module - 5					
Q.9	a.	Find the rank of the matrix $\begin{bmatrix} -2 & -1 & -3 & -1 \\ 1 & 2 & 3 & 1 \\ 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \end{bmatrix}$.	6	L2	CO4
	b.	Solve the system of equations by Gauss-Jordan method $x + y + z = 9, 2x + y - z = 0, 2x + 5y + 7z = 52$.	7	L2	CO4
	c.	Using Rayleigh's power method find the dominant eigen value and the corresponding eigen vector of $\begin{bmatrix} 6 & -2 & 2 \\ -2 & 3 & -1 \\ 2 & -1 & 3 \end{bmatrix}$ by taking $[1 \ 1 \ 1]^T$ as the initial eigen vector. Carryout 6 iterations.	7	L3	CO4
OR					
Q.10	a.	Find the rank of the matrix. $\begin{bmatrix} 91 & 92 & 93 & 94 & 95 \\ 92 & 93 & 94 & 95 & 96 \\ 93 & 94 & 95 & 96 & 97 \\ 94 & 95 & 96 & 97 & 98 \\ 95 & 96 & 97 & 98 & 99 \end{bmatrix}$.	7	L2	CO4
	b.	Solve the system of equations, $20x + y - 2z = 17, 3x + 20y - z = -18, 2x - 3y + 20z = 25$. Using Gauss-Seidel method, taking $(0, 0, 0)$ as an initial approximation (carry out 3 iterations).	8	L2	CO4
	c.	Using modern mathematical tool write a program/code to test the consistency of the equations. $x_1 + 2x_2 - x_3 = 1, 2x_1 + x_2 + 5x_3 = 2, 3x_1 + 3x_2 + 4x_3 = 1$.	5	L3	CO5

USN

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 2023
Applied Physics for CSE Stream

Time: 3 hrs.

Max. Marks: 100

Note: 1. 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
Q.1	a.	Explain the construction and working of a semiconductor laser with the help of energy level diagram.	8	L2	CO1
	b.	What is refractive index profile? Discuss three different types of optical fibres based on modes of propagation and refractive index profile.	7	L2	CO1
	c.	The angle of acceptance of an optical fibre is 30° when kept in air. Find the angle of acceptance when it is in a medium of refractive index 1.33.	5	L3	CO5
OR					
Q.2	a.	Define acceptance angle and numerical aperture. Derive an expression for numerical aperture in terms of refractive indices of core, cladding and surrounding.	8	L2	CO1
	b.	Derive an expression for energy density for a system in thermal equilibrium in terms of Einstein's co-efficient.	7	L2	CO1
	c.	In a diffraction grating experiment the laser light undergoes second order diffraction for diffraction angle 1.48° . The grating constant is 5.08×10^{-5} m and the distance between the grating and the source is 80 cm, find the wave length of LASER light.	5	L3	CO5
Module - 2					
Q.3	a.	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 equation.	9	L2	CO2
	b.	State and explain Heisenberg uncertainty principle. Show that an electron doesn't exists inside the nucleus.	7	L2	CO2
	c.	Compute the deBroglie wavelength for a neutron moving with one tenth part of velocity of light. Given the mass of the neutron is 1.674×10^{-27} kg.	4	L3	CO2
OR					
Q.4	a.	Setup Schrodinger time independent wave equation in one dimension.	9	L2	CO2
	b.	Define phase velocity and group velocity. Derive an expression for De Broglie wavelength of an electron.	7	L2	CO2
	c.	An electron has a speed of 100 m/s. The inherent uncertainty in its measurement is 0.005%. Calculate the corresponding uncertainty in the measurement of the position.	4	L3	CO2
Module - 3					
Q.5	a.	Explain the Pauli matrices and apply Pauli matrices on the state $ 0\rangle$ and $ 1\rangle$.	9	L2	CO2
	b.	Differentiate between classical and quantum computing.	6	L2	CO2
	c.	Explain the Hadamard gate. Show that the Hadamard gate is unitary.	5	L2	CO2

OR			
Q.6	a.	A Linear operator 'X' operates such that $X 0\rangle = 1\rangle$ and $X 1\rangle = 0\rangle$. Find the matrix representation of 'X'.	5 L2 CO2
	b.	Describe the working of CNOT gate mentioning its matrix representation and truth table.	9 L2 CO2
	c.	Explain the representation of qubit using Bloch sphere.	6 L2 CO2
Module - 4			
Q.7	a.	Enumerate the failures of classical free electron theory and discuss the success of quantum free electron theory of metals.	8 L2 CO3
	b.	Explain DC and AC Josephson effects and mention any two applications of superconductivity in quantum computing.	7 L2 CO3
	c.	Find the temperature at which there is 1% probability that a state with an energy 0.5 eV above the Fermi energy is occupied.	5 L3 CO3
OR			
Q.8	a.	Explain Meissner's effect and the variation of critical field with temperature.	8 L2 CO3
	b.	Define Fermi factor. Discuss the variation of Fermi factor with temperature and energy.	7 L2 CO3
	c.	The critical temperature of Nb is 9.15 K. At zero Kelvin, the critical field is 0.196T. Calculate the critical field at 8 K.	5 L3 CO3
Module - 5			
Q.9	a.	Discuss timing in Linear motion, Uniform motion, Slow in and Slow out.	8 L2 CO4
	b.	Describe Jumping and parts of jumping in animation.	7 L2 CO4
	c.	A slowing-in object in an animation has a first frame distance 0.5 m and first slow in frame 0.35 m. Calculate the base distance and the number of frames in sequence.	5 L3 CO5
OR			
Q.10	a.	Illustrate the odd rule and odd rule multiplier with suitable example.	8 L2 CO4
	b.	Discuss modeling the probability for proton decay.	7 L2 CO4
	c.	In an optical fibre experiment the Laser light propagating through optical fibre cable of 1.5 m, made a spot diameter of 8 mm on the screen. The distance between the end of the optical fibre cable and the screen is 3.4 cm. Calculate the angle of contact and numerical aperture of given optical fibre.	5 L3 CO5

CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

BCHES102

First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 2023 Applied Chemistry for CSE Stream

Time: 3 hrs.

Max. Marks: 100

Note: 1. 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
Q.1	a.	What are batteries? Explain the working principle, properties and applications of quantum Dot sensitized solar cells.	7	L2	CO1
	b.	Explain the working principle of electrochemical sensors, and mention its applications.	6	L2	CO1
	c.	What are sensors? Explain the detection of ascorbic Acid and Glyphosate using sensors.	7	L2	CO1
OR					
Q.2	a.	What are electro chemical sensors? Explain its applications in the measurement of dissolved oxygen (DO).	7	L2	CO1
	b.	Describe the construction working and applications of Lithium – ion batteries and mention any four applications.	6	L2	CO1
	c.	Explain about detection of Diclofenac and hydro carbons (PAH's) with electro chemical oxidation sensors.	7	L2	CO1
Module – 2					
Q.3	a.	What are photoactive and electro active materials and explain their working principle in display system.	6	L2	CO1
	b.	Explain any four properties and applications of light emitting materials – poly [9 – Vinyl Carbazole] (PVK) suitable for opto electronic devices.	6	L2	CO1
	c.	Discuss the working and liquid crystal display.	8	L2	CO1
OR					
Q.4	a.	Explain the types of organic memory devices by taking P-type and n-type semi conducting materials.	6	L2	CO1
	b.	What are nano materials? Explain any four properties and applications of polythiophenes (P3HT) suitable for optoelectronic devices.	7	L2	CO1
	c.	What is QLED? Mention any four properties and applications of QLED.	6	L2	CO1
Module – 3					
Q.5	a.	Define metallic corrosion. Describe the electrochemical theory of corrosion taking iron as an example.	6	L2	CO2
	b.	What are Ion-selective electrodes? Explain the determination of pH of a solution using glass electrode.	7	L2	CO2
	c.	Define concentration cell. The EMF of the cell Ag/AgNO ₃ (C ₁ M)//AgNO ₃ (0.2M)/Ag is 0.8V at 25°C. Find the value of C ₁ .	7	L3	CO2

OR					
Q.6	a.	Briefly explain the principle, instrumentation and working of potentiometry taking estimation of Iron as example.	6	L2	CO1
	b.	What are reference electrode? Explain the construction, working and application of Calomel electrode.	7	L2	CO1
	c.	What is CPR? A piece of corroded steel plate was found in a submerged ocean vessel. It was estimated that the original area of the plate was 10 inch ² and that approx 2.6kg had corroded away during the submersion. Assuming a corrosion penetration rate of 200 mpy for this alloy in sea water, estimate the time of submersion in years. The density of steel is 7.9g/cm ³ .	7	L3	CO2
Module – 4					
Q.7	a.	In sample of a polymer, 20% molecules have molecular mass 15000 g/mol, 45% molecules have molecular mass 25000 g/mol, and remaining molecules have molecular mass 27000g/mol, calculate the number average and weight average molecular mass of the polymer.	6	L3	CO3
	b.	Explain the preparation, properties and commercial application of Kevlar.	7	L2	CO3
	c.	What are green fuels? Explain the generation of hydrogen by Alkaline water electrolysis with its advantages.	7	L2	CO3
OR					
Q.8	a.	Explain the construction and working of photovoltaic cells. Mention the advantages and disadvantages.	6	L2	CO4
	b.	Explain the preparation, properties, and commercial applications of graphene oxide.	7	L2	CO4
	c.	What are conducting polymer? Discuss the conduction mechanism in polyacetylene through oxidative doping technique and its uses.	7	L2	CO4
Module – 5					
Q.9	a.	Explain the ill effects of toxic materials used in manufacturing electrical and electronic products.	7	L2	CO5
	b.	Write a brief note on role of stake-holders for example, producers, consumers, recyclers and statutory bodies.	6	L2	CO5
	c.	Briefly discuss the various chemical methods involved in hydrometallurgy process of recovery of E-waste.	7	L2	CO5
OR					
Q.10	a.	Explain the pyro metallurgical recycling methods.	7	L2	CO5
	b.	Explain the steps involved in extraction of gold from e-waste.	7	L2	CO5
	c.	Mention the sources of e-waste and explain the need for e-waste management.	6	L2	CO5

USN

--	--	--	--	--	--	--	--	--	--

First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 2023 Principles of Programming using C

Time: 3 hrs.

Max. Marks: 100

- Note: 1. 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
Q.1	a.	Explain the organization of Basic computer model with neat diagram.	8	L1	CO2
	b.	Explain Input/Output statement in C.	8	L1	CO2
	c.	List and explain any two input-output devices.	4	L1	CO2
OR					
Q.2	a.	What are the basic datatypes available in C?	6	L2	CO2
	b.	Define variable. Explain the rules to declare a variable with example.	6	L2	CO2
	c.	With suitable example – Explain the basic structure of C program.	8	L2	CO2
Module – 2					
Q.3	a.	What is type casting? Explain its types with suitable example.	6	L2	CO2
	b.	Write a C program to find the largest of three numbers using ternary operator.	6	L3	CO2
	c.	List and explain unconditional branching statements with example.	8	L1	CO2
OR					
Q.4	a.	List the conditional branching statements in 'C'. Explain any two with example.	6	L1	CO2
	b.	Write a C program to compute the roots of a quadratic equation by accepting the coefficients print appropriate messages.	6	L3	CO2
	c.	Explain different types of loops in C. Justify with its syntax and example.	8	L2	CO2
Module – 3					
Q.5	a.	Define an array. Explain with example. How to declare and initialize 2D-array.	6	L2	CO3
	b.	Write a C program to search an element using binary search technique (for numericals).	6	L3	CO3
	c.	Write a C program to perform addition of 2-dimensional matrix (consider 3×3 ordered matrices A and B).	8	L3	CO3
OR					

Q.6	a.	Define function. Explain the type of functions based on parameters.	8	L2	CO2
	b.	Write a C program to sort the elements using bubble sort technique by passing array as function argument.	6	L3	CO4
	c.	Write a C program to find the n_{C_r} . $\left[n_{C_r} = \frac{n!}{(n-r)!r!} \right]$	6	L3	CO3
Module – 4					
Q.7	a.	Define a string. List the string manipulation functions. Explain any two with examples.	8	L2	CO2
	b.	Write a C program to find the length of a given string without using built-in function.	6	L3	CO3
	c.	Write a C program to check whether the given string is Palindrome or not without using built in function.	6	L3	CO2
OR					
Q.8	a.	Define Pointer. Explain how the pointer is declared and initialized with example.	6	L2	CO4
	b.	Write a C program using pointers to compute the sum, mean and standard deviation of all elements stored in an array of 'n' real numbers.	8	L3	CO4
	c.	Write a C program to replace each constant in a string with the text one except letter 'z', 'Z' and 'a' 'A', for the string "Corona Virus" should be modified as "DpSpoa Wjsvt".	6	L3	CO3
Module – 5					
Q.9	a.	Differentiate between structures and Union.	6	L2	CO4
	b.	Write a C program to implement structures to read and write Book-Title, Book-Author and Book-id of n books.	8	L3	CO3
	c.	Write a note on files.	6	L3	CO4
OR					
Q.10	a.	List and explain any four file operations in C.	6	L2	CO2
	b.	Write a C program to store and print name, USN, Subject and IA marks of students using structure.	8	L3	CO4
	c.	Write a note on enumerated data type.	6	L2	CO4

CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

BESCK104A/BESCKA104

First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 2023 Introduction to Civil 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 civil engineering disciplines.	10	L1	CO1
	b.	List the qualities of good building stone.	10	L1	CO1
OR					
Q.2	a.	Explain the following: (i) Reinforced Cement Concrete (RCC) (ii) Pre-Stressed Concrete (PSC) (iii) Construction Chemicals	10	L1	CO1
	b.	Explain different types of foundations, briefly.	10	L1	CO1
Module – 2					
Q.3	a.	Explain concept of (i) Smart city (ii) Clean city	10	L1	CO2
	b.	Explain management of (i) Urban air pollution (ii) Solid waste	10	L1	CO2
OR					
Q.4	a.	Explain: (i) Energy Efficient Buildings (ii) Temperature Control in Buildings	10	L1	CO2
	b.	Explain: (i) Security System (ii) Smart Buildings	10	L1	CO2
Module – 3					
Q.5	a.	Explain classification of force system with neat sketches.	10	L1	CO3
	b.	Determine magnitude and direction of "P" for the system shown in Fig.Q5(b). Four coplanar forces acting at a point. One of the forces is unknown. The resultant has a magnitude of 500 N and is acting along x-axis.	10	L3	CO3

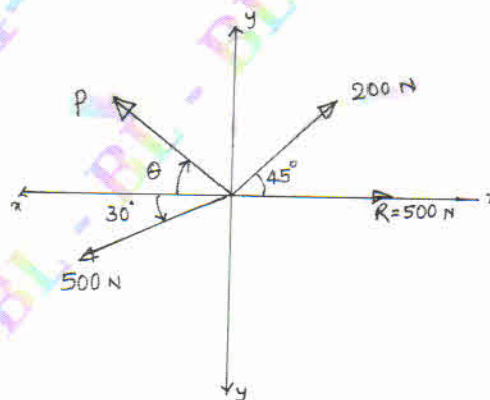


Fig.Q5(b)

OR

Q.6	a. State and prove Varignon's theorem of moments.	10	L3	CO2
	b. Find the magnitude, direction and position of the resultant force with respect to point 'A' as shown in Fig.Q6(b). <div style="text-align: center;"> </div> <p style="text-align: center;">Fig.Q6(b)</p>	10	L3	CO3

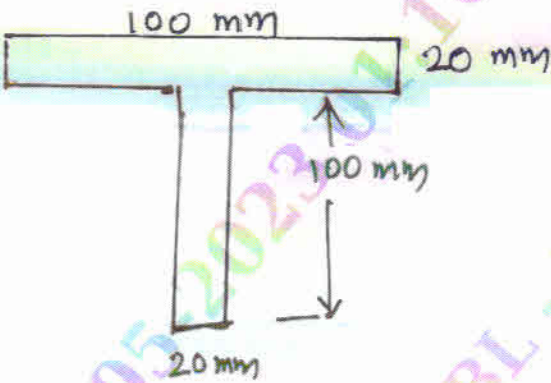
Module - 4

Q.7	a. Explain the following terms: (i) Centroid (ii) Axis of symmetry (iii) Axis of reference (iv) Centroidal axis (v) Centre of gravity	10	L1	CO4
	b. Determine the centroid of the Fig.Q7(b) shown below: <div style="text-align: center;"> </div> <p style="text-align: center;">Fig.Q7(b)</p>	10	L1	CO4

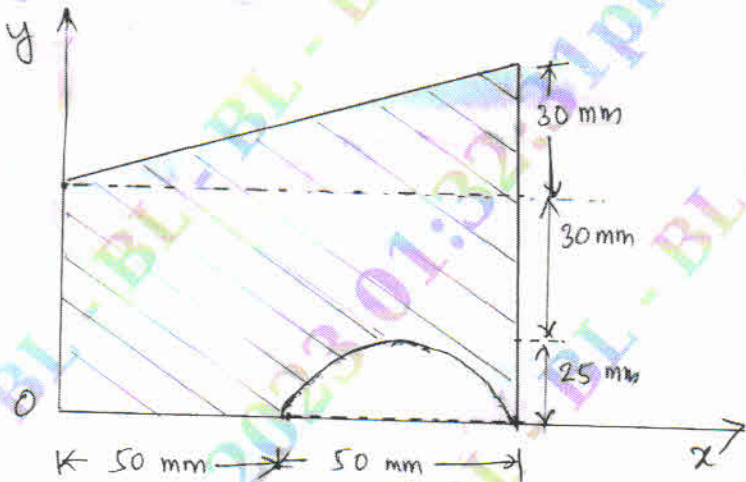
OR

Q.8	a. Prove that for a semicircle $\bar{Y} = \frac{4R}{3\pi}$.	10	L1	CO4
	b. Determine the centroid of area shown in Fig.Q8(b). <div style="text-align: center;"> </div> <p style="text-align: center;">Fig.Q8(b)</p>	10	L1	CO4

Module - 5

Q.9	a. State and prove parallel axis theorem.	10	L1	CO5
	b. Determine moment of inertia about horizontal centroidal axis for the Fig.Q9(b).  <p style="text-align: center;">Fig.Q9(b)</p>	10	L2	CO5

OR

Q.10	a. Derive the moment of inertia equation for a rectangle.	10	L1	CO5
	b. Determine the moment of inertia of the section shown in Fig.Q10(b) with respect to horizontal to horizontal centroidal axis (I_{xx}).  <p style="text-align: center;">Fig.Q10(b)</p>	10	L2	CO5

CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

BETCK105I/BETCKI105

First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 2023 Introduction to Cyber Security

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.	Define Cybercrime and Cyber security. List and explain categories of cyber criminals.	10	L1	CO1
	b.	List and explain classification of cybercrimes.	10	L2	CO1
OR					
Q.2	a.	List and explain the hacking and the Indian law under Indian ITA 2000 Cyber crimes.	10	L2	CO1
	b.	Write note on: i) Cyber defamation ii) Salami attack iii) Hacking iv) Software piracy v) Mail bombs.	10	L1	CO1
Module – 2					
Q.3	a.	Explain the difference between passive and active attacks provide tools as example.	10	L2	CO2
	b.	What is Social engineering? Explain Human based and Computer based Social engineering.	10	L2	CO2
OR					
Q.4	a.	What is Cyber stalking? Name the two types of stalkers and explain how stalking works.	10	L2	CO2
	b.	What is Zombie network? What are the different attacks launched with attack vector? Explain.	10	L2	CO2
Module – 3					
Q.5	a.	What are the different stages during the attack on the network?	10	L1	CO3
	b.	What is the difference between proxy server and an anonymizer?	4	L1	CO3
	c.	What are the different ways of password cracking?	6	L1	CO3

OR			
Q.6	a.	What is the difference between a virus and a worm? List the types of virus and explain.	10 L1 CO3
	b.	What is Trojan Horses and Backdoors? How to protect from Trojan Horses and Backdoors.	10 L1 CO3
Module - 4			
Q.7	a.	What is Phishing? What are the different methods of phishing attack?	10 L1 CO4
	b.	What is spear phishing? Explain with example.	4 L2 CO4
	c.	List and explain any 6 types of phishing scams.	6 L2 CO4
OR			
Q.8	a.	What is identity theft? Give example.	2 L2 CO4
	b.	What are the different type of identity theft? Explain.	8 L2 CO4
	c.	What are the different techniques of ID theft?	10 L1 CO4
Module - 5			
Q.9	a.	Explain the following terms: i) Confidentiality ii) Integrity iii) Availability	3 L2 CO5
	b.	Define computer forensic and digital forensic. List the roles of digital forensics.	7 L1 CO5
	c.	Explain the guidelines to be followed during the digital evidence collection phase.	10 L2 CO5
OR			
Q.10	a.	Draw a block diagram for the process to capture and handle forensic evidence.	4 L3 CO5
	b.	Explain the activities involved in the process of forensics.	8 L2 CO5
	c.	Elaborate on the chain of custody.	8 L3 CO5

CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

BETCK105H/BETCKH105

First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 2023 Introduction to Internet of Things (IOT)

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.	What is IoT? Write the characteristics of IoT system.	4	L2	CO1
	b.	Explain four broad categories of networks based on reachability.	8	L2	CO1
	c.	Explain with a suitable diagram IoT planes with respect to complex interdependence of technologies.	8	L2	CO2
OR					
Q.2	a.	Briefly explain various network topologies with suitable diagram.	8	L2	CO2
	b.	With a neat diagram, explain the network communication between two hosts following the OSI model.	7	L2	CO2
	c.	Differentiate between OSI model and TCP/IP model.	5	L2	CO2
Module – 2					
Q.3	a.	With a block diagram, explain the functional blocks of a typical sensor node in IoT.	10	L2	CO2
	b.	Explain the factors affecting sensorial deviations.	10	L2	CO1
OR					
Q.4	a.	Explain the desired characteristics of actuators used in IoT.	10	L2	CO3
	b.	Explain any five classes of actuators.	10	L2	CO3
Module – 3					
Q.5	a.	With neat diagrams, explain two types of offsite processing topologies.	10	L2	CO2
	b.	Explain the three parts of data offloading.	10	L2	CO2
OR					
Q.6	a.	With a neat diagram, explain onsite processing topology. Give its merit and demerit.	10	L2	CO1
	b.	Explain IoT device selection considerations.	10	L2	CO2

Module – 4					
Q.7	a.	What is virtualization? Explain its advantages from end-user and service provider point of view.	10	L2	CO2
	b.	Explain service level agreement and its metrics in cloud computing.	10	L2	CO2
OR					
Q.8	a.	With a neat diagram, explain architecture of a sensor cloud platform.	10	L2	CO1
	b.	With a diagram, briefly explain the architecture of Leaf Area Index System.	10	L2	CO1
Module – 5					
Q.9	a.	Briefly explain the components of vehicular IoT.	10	L2	CO2
	b.	Explain the layered architecture of AmbuSens.	10	L2	CO2
OR					
Q.10	a.	With the help of a block diagram, explain the architecture of healthcare IoT.	10	L2	CO2
	b.	Explain the four categories of Machine Learnings.	10	L2	CO2

USN

--	--	--	--	--	--	--	--	--	--	--

BPLCK105B/BPLCKB105

First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 2023

Introduction to Python 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.*

Module – 1			M	L	C
Q.1	a.	What is the need for role of precedence? Illustrate the rules of precedence in Python with example.	6	L2	CO1
	b.	Explain the local and global scope with suitable examples.	6	L2	CO1
	c.	Develop a program to generate Fibonacci sequence of length (N). Read N from the console.	8	L3	CO1
OR					
Q.2	a.	What are functions? Explain Python function with parameters and return statements.	7	L2	CO1
	b.	Define exception handling. How exceptions are handled in python? Write a program to solve divide by zero exception.	7	L2	CO1
	c.	Develop a python program to calculate the area of rectangle and triangle print the result.	6	L3	CO1
Module – 2					
Q.3	a.	Explain negative indexing, slicing, index(), append(), remove(), pop(), insert() and sort() with suitable example.	8	L2	CO2
	b.	Explain the use of in and not in operators in list with suitable examples.	6	L2	CO2
	c.	Develop a program to find mean, variance and standard deviation.	6	L3	CO2
OR					
Q.4	a.	Explain the following methods in lists with an examples: i) len() ii) sum() iii) max() iv) min().	8	L2	CO2
	b.	Explain set() and setdefault() method in a dictionary.	6	L2	CO2
	c.	Develop a Python program to swap cases of a given string input: Java output: jAVA.	6	L3	CO2
Module – 3					
Q.5	a.	Explain join() and split() method with examples.	8	L2	CO3
	b.	Explain with examples: i) isalpha() ii) isalnum() iii) isspace().	6	L2	CO3
	c.	Develop a python code to determine whether the given string is a palindrome or not a palindrome.	6	L3	CO3

OR			
Q.6	a.	Explain the concept of file handling. Also explain reading and writing process with suitable example.	8 L2
	b.	Explain the concept of file path. Also discuss absolute and relative file path.	6 L2 CO3
	c.	Briefly explain saving variables with shelve module.	6 L3 CO3
Module – 4			
Q.7	a.	Explain the following file operations in Python with suitable example: i) Copying files and folders ii) Moving files and folders iii) Permanently deleting files and folders.	6 L2 CO3
	b.	List out the benefits of compressing file? Also explain reading of a zip file with an example.	8 L2 CO3
	c.	List out the differences between shutil.copy() and shutil.copytree() method.	6 L3 CO3
OR			
Q.8	a.	Briefly explain assertions and raising a exception.	6 L2 CO3
	b.	List out the benefits of using logging module with an example.	6 L2 CO3
	c.	Develop a program with a function named DivExp which takes two parameters a, b and returns a value C ($C = a/b$). Write suitable assertion for $a > 0$ in function DivExp and raise an exception for when $b = 0$. Develop a suitable program which reads two values from the console and calls a function DivExp.	8 L3 CO3
Module – 5			
Q.9	a.	Define a class and object, construct the class called rectangle and initialize it with height = 100, width = 200, starting point as (x = 0, y = 0). Write a program to display the center point co-ordinates of a rectangle.	8 L2 CO4
	b.	Explain the concept of copying using copy module with an example.	6 L2 CO4
	c.	Explain the concept of inheritance with an example.	6 L2 CO4
OR			
Q.10	a.	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($N \geq 2$) complex numbers and to compute the addition of N complex numbers.	8 L2 CO4
	b.	Explain <code>__init__()</code> and <code>__str__()</code> method with examples.	6 L2 CO4
	c.	Briefly explain the printing of objects with an examples.	6 L2 CO4

USN

--	--	--	--	--	--	--	--	--	--

Question Paper Version : C

First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 2023
Communicative English

Time: 1 hr.]

[Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

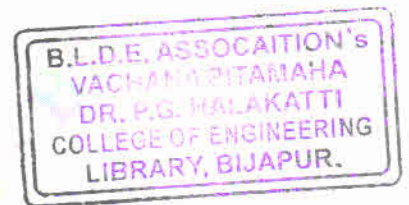
1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening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

-
1. The synonym of "Benefit" is _____
a) yield b) benefit c) loss d) none of these
 2. The antonyms of "Crazy" is _____
a) Sane b) Insane c) Unrealistic d) (a) & (b)
 3. Please give me a peace / piece of advice.
a) peace b) piece c) Both (a) & (b) d) None of these
 4. The closest meaning of the word Slender is,
a) Slim b) Sconty c) Weak d) Poor
 5. The day of Judgement _____
a) Doomsday b) Verdict c) Both (a) & (b) d) None of these
 6. She _____ the report indignantly.
a) Cast away b) Cast aside c) Cast off d) Cast a way
 7. The sick child _____ while waiting at the doctor's.
a) Threw off b) Threw up c) Threw out d) Threw down
 8. The suffix of the word "worth" is,
a) worth b) worthless c) worthy d) none of these
- Question Tags :**
9. They are 'reaching by Tomorrow', _____
a) aren't they b) are they c) both d) none of these
 10. You 'told me this 'earlier', _____
a) Didn't you? b) Did you? c) Did they? d) Do they?

Version C - 1 of 4

11. Transcription of the word "Tomb" is _____
 a) /tʊm/ b) /tu:m/ c) tum:/ d) None of these
12. There are _____ sounds in English.
 a) 44 b) 12 c) 24 d) 8
13. Silent letter in "Castle".
 a) e b) t c) a d) l
14. Division of the syllable "information" is _____
 a) infor-ma-tion b) in-for-mation c) in-for-ma-tion d) info-rmat-ion
15. How many consonants are there in English?
 a) 4 b) 12 c) 24 d) 44
16. How many Vowels are there in English?
 a) 44 b) 12 c) 24 d) 20
17. Division of the syllable of "window" is _____
 a) Win-dow b) Wi-ndow c) Wi-n-dow d) Wind-ow
18. Silent letter in the word "Knee" is _____
 a) k b) n c) e d) None of these
19. Communication is the _____ of business.
 a) back bone b) blood c) nerve d) hand
20. Identify the word with one syllable in the following :
 a) grass b) fulfil c) folder d) conquer
- Identify the Parts of speech of the underlined words :**
21. Steve Waugh was an inspirational captain.
 a) verb b) proper noun c) noun d) adverb
22. Abstract noun form of starve is _____
 a) Starvation b) Starve c) Starving d) None of these
23. Wow! We won the match!
 a) Adjective b) Interjection c) Noun d) Verb
24. Gandhiji is known for his non-violence.
 a) Noun b) Pronoun c) Verb d) Abstract-Noun
25. In general hot country like India, it is only winters that one can experience the Soothing comfort.
 a) Verb b) Noun c) Adjective d) Adverb
26. Proposals prepared for submission to the boss
 a) Upward b) Downward c) Horizontal d) Vertical
27. Counseling and training
 a) Downward b) Upward c) Vertical d) Spiral

28. Oral communication is different from written communication as it is,
 a) Spoken and structured b) Spoken and transitory
 c) Spoken and Permanent d) Spoken and time consuming
29. Who Encodes the message?
 a) Sender b) Receiver c) Transmitting media d) Both (a) and (b)
30. Which one of the following is not a feature of grapevine communication?
 a) Rapid b) Formal c) Multidirectional d) Cluster
31. Which of the following is oral communication?
 a) Dictation b) Brochure c) Notice d) Letter
32. In communication the observation of a receiver's response is called,
 a) Feedback b) Survey c) Channel d) Message
33. Badly encoded message leaves its receiver confused and not well informed.
 a) True b) False c) Both (a) and (b) d) None of these
34. Among the following elements, which element is the medium through which message is sent.
 a) Sender b) Channel c) Context d) Noise
35. This type of communication takes place within an individual :
 a) Extrapersonal b) Intrapersonal c) Organizational d) Interpersonal
36. "Types of Cancer" can be presented by _____ method.
 a) Topical pattern b) Spatial pattern
 c) Psychological pattern d) None of these
37. The weak form of the is,
 a) δ b) θ c) δ : d) None of these
38. The syllable of the word "Fauna" is,
 a) CV-CV b) CVVCV c) CVC d) None of these
39. Words ending in |dz| _____
 a) judge b) then c) their d) below
40. Example for initial minimal pair is _____
 a) Try-Dry b) Set-Sat c) Pull-Pool d) Cab-Cap
41. RP is known as _____
 a) Revised Pronunciation b) Received Pronunciation
 c) Both (a) & (b) d) None of these
42. Which of these should be avoided for an effective speech?
 a) Confidence b) Clarity c) Pauses d) Rudeness
43. Which of these should be avoided during delivery of speech?
 a) Planning of speech b) Long Pauses
 c) Organization d) Long sentences



44. The acronym of 'QA' is _____
 a) Question & Answer b) Quality Assurance
 c) Quality Assist d) None of these
45. The simple present of this below sentence - The fruit is smelling sweet,
 a) The fruit smells sweet b) The fruit is sweet
 c) Both (a) & (b) d) None of these
- One word substitution :**
46. Saying things in a roundabout way.
 a) Circumlocution b) Straight away c) Around about d) None of these
47. Someone who compiles a dictionary.
 a) Calligrapher b) Teetotaller c) both d) Lexicographer
- Choose the word that can fill the gap appropriately :**
48. Man is a _____ of circumstances.
 a) Master b) Companion c) Creature d) Slave
49. I have been ill _____ last Monday.
 a) since b) from c) for d) by
50. A lady's purse _____
 a) Parasol b) Pantomine c) Reticule d) Vertibule

* * * * *

CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

BETCK105E /BETCKE105

First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 2023
Renewable Energy Sources

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.	Write a short note on fundamental and social implication of renewable energy.	6	L2	CO1
	b.	Discuss India and worldwide Renewable Energy availability.	8	L2	CO1
	c.	Briefly describe Oil shale.	6	L2	CO1
OR					
Q.2	a.	Briefly describe energies from ocean.	6	L2	CO1
	b.	Write a short note on Internet of Energy (IOE).	6	L2	CO1
	c.	Discuss different ways of classification of renewable energy with example in each category.	8	L2	CO1
Module – 2					
Q.3	a.	Sketch and explain solar radiation on horizontal and inclined surfaces.	8	L2	CO2
	b.	With a neat diagram, explain Solar Pond Electric Power Plant.	6	L2	CO2
	c.	Explain the V-I characteristics of solar cell.	6	L2	CO2
OR					
Q.4	a.	What are the advantages and disadvantages of solar flat plate collectors?	6	L2	CO2
	b.	With a neat diagram, explain solar distillation.	6	L2	CO2
	c.	Briefly explain any four applications of solar photovoltaic system.	8	L2	CO2
Module – 3					
Q.5	a.	Derive the expression for power developed due to wind.	6	L2	CO3
	b.	Explain the various factors in wind turbine site selection.	6	L2	CO3
	c.	With a neat sketch, explain urban waste – to – energy conversion process.	8	L2	CO3
OR					
Q.6	a.	Discuss about wind characteristics.	6	L2	CO3
	b.	Describe the construction and working of fixed dome type bio-mass plant and its material aspects.	6	L2	CO3

	c.	With the help of diagrams, explain the classification of Wind of Energy Conversion System (WECS).	8	L2	CO4
Module – 4					
Q.7	a.	Discuss the problems faced in exploiting tidal energy.	6	L2	CO4
	b.	With a neat diagram, explain double basin tidal power plant.	8	L2	CO4
	c.	What is the principle of working of OTEC?	6	L2	CO4
OR					
Q.8	a.	Explain the principle and working of wave energy. What are the limitations of wave energy?	10	L2	CO4
	b.	Briefly explain the problems associated with OTEC and OTEC power stations in the world.	10	L2	CO4
Module – 5					
Q.9	a.	Explain the principle and working of fuel cell.	6	L2	CO5
	b.	Classify fuel cells.	6	L2	CO5
	c.	Illustrate the problems associated with hydrogen energy.	8	L2	CO5
OR					
Q.10	a.	With a neat sketch, explain zero energy concepts.	6	L2	CO5
	b.	Explain with neat sketch electrolysis method of hydrogen production technology.	8	L2	CO5
	c.	Discuss advantages and disadvantages of hydrogen energy.	6	L2	CO5

--	--	--	--	--	--	--	--	--	--

First Semester B.E. Degree Examination, Jan./Feb. 2023

ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ

(COMMON TO ALL BRANCHES)

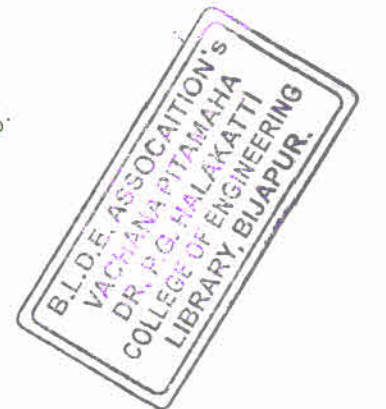
Time: 1 hrs.]

[Max. Marks: 50

ಸೂಚನೆಗಳು

1. ಎಲ್ಲ ೩೦ ಪ್ರಶ್ನೆಗಳಿಗೂ ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ ಒಂದು ಅಂಕ.
2. ಓ.ಎಂ.ಆರ್ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ಯು.ಎಸ್.ಎನ್ ಸಂಖ್ಯೆ ಹಾಗೂ ಪಶ್ಚಿಮ ಪತ್ರಿಕೆಯ ಶ್ರೇಣಿಯನ್ನು ಅಂದರೆ A, B, C ಅಥವಾ D ಯನ್ನು ತಪ್ಪಿಲ್ಲದಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಗುರುತಿಸುವುದು ಅಭ್ಯರ್ಥಿಯ ಜವಾಬ್ದಾರಿಯಾಗಿರುತ್ತದೆ.
3. ಓ.ಎಂ.ಆರ್ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ನಿಗದಿಪಡಿಸಿರುವ ಸ್ಥಳದಲ್ಲಿ ಭರ್ತಿಮಾಡದೆ ಹಾಗೆಯೇ ಬಿಟ್ಟಲ್ಲಿ ಅಥವಾ ಭರ್ತಿಮಾಡಿದ ಮಾಹಿತಿಯಲ್ಲಿ ಯಾವುದೇ ವ್ಯತ್ಯಾಸವಿದ್ದಲ್ಲಿ ಅಂತಹ ಉತ್ತರ ಪತ್ರಿಕೆಗಳನ್ನು ರದ್ದು ಪಡಿಸಲಾಗುವುದು.
4. ಕೇವಲ ಒಂದು ಉತ್ತರವನ್ನು ಮಾತ್ರ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ಗುರುತಿಸತಕ್ಕದ್ದು. ಒಂದೆ ಪ್ರಶ್ನೆಗೆ ಎರಡು ಉತ್ತರವನ್ನು ಗುರುತಿಸುವುದು ಅಮಾನ್ಯ.
5. ಎಲ್ಲಾ ಉತ್ತರಗಳನ್ನು ನಿಮಗೆ ಒದಗಿಸಲಾದ ಓ.ಎಂ.ಆರ್ ಉತ್ತರ ಪತ್ರಿಕೆಯ ಹಾಳೆಯ ಮೇಲೆ ಕಪ್ಪು ಅಥವಾ ನೀಲಿ ಶಾಹಿಯ ಬಾಲ್‌ಪಾಯಿಂಟ್ ಪೆನ್ನಿನಿಂದ ಗುರುತು ಮಾಡಬೇಕು.

1. ಹುಲ್ಲಾಗು ಬೆಟ್ಟದಡಿ ಮನೆಗೆ ----- ಆಗು.
A) ಮಲ್ಲಿಗೆ B) ಅಬಲಿಗೆ C) ಜಾಜಿ D) ಸಂಪಿಗೆ.
2. ಸಿಂಹಾಸನಕೆ ಕೊನೆಗಾಲ ಬಂದಿರುವುದು -----
A) ಇಂದ್ರ B) ಕೌರವರು C) ರಾಮ D) ಮಂತ್ರಿ.
3. ಕನ್ನಡಕ್ಕೆ ಪ್ರಥಮ ಜ್ಞಾನಪೀಠ ಪ್ರಶಸ್ತಿ ತಂದು ಕೊಟ್ಟವರು -----
A) ಮಾಸ್ತಿ ವೆಂಕಟೇಶ ಅಯ್ಯಂಗಾರ B) ಶಿವರಾಮ ಕಾರಂತ
C) ಕುವೆಂಪು D) ಜಿ. ಎಸ್. ಶಿವರುದ್ರಪ್ಪ.
4. ಧರ್ಮ ಸಹಿಷ್ಣುತೆ ಬಗ್ಗೆ ಹೇಳುವ ಶಾಸನ ಇದಾಗಿದೆ -----
A) ಶ್ರವಣಬೆಳಗೊಳದ ಶಾಸನ B) ಹಲ್ಮಿಡಿಶಾಸನ
C) ಚಂದ್ರವಳ್ಳಿ ಶಾಸನ D) ಬೇಲೂರು ಶಾಸನ.



5. ನವಿಲಿಗೆ ----- ಬರೆದವರು ಯಾರು?
A) ಕಣ್ಣು B) ಕಿವಿ C) ರೆಕ್ಕೆ D) ಚಿತ್ರ.
6. ----- ಸಹಜಧರ್ಮ.
A) ಕೇಳುವುದು B) ಹೇಳುವುದು C) ಅಳುವುದು D) ನಗುವುದು
7. ಯಾವ ಆವಿಗಿಯನ್ನು ಕುಂಬಾರಕಿ ಮುಚ್ಚುವಳು ----- ?
A) ಗಡಗಿ B) ಆಚಾರ C) ಗುಣ D) ಭಕ್ತಿ.
8. ಕರ್ನಾಟಕ ಸಂಗೀತದ ಪಿತಾಮಹ ಯಾರು ----- ?
A) ಅಲ್ಲೂರು ವೆಂಕಟರಾಯರು B) ಕನಕದಾಸರು
C) ಪುರಂದರದಾಸರು D) ಹರಿದಾಸರು.
9. ಯಾರ ಎಲುಬನ್ನು ಕಾಂಬಾಣ ಕಿರುಗೆಜ್ಜೆಯಾಗಿ ಮಾಡಿಕೊಂಡಿದೆ ----- ?
A) ಮಕ್ಕಳು B) ಮುದುಕರು C) ಹೆಂಗಸರು D) ಬಾಣಂತಿ.
10. ಹೊಸ ಚಿಗುರು ----- ಕೂಡಿರಲು ಮರಸೊಬಗು.
A) ಎಲೆ B) ಹಸಿರು C) ಕಾಂಡ D) ಹಳೇಬೇರು.
11. ಕನ್ನಡಕ್ಕೆ ಅಪರೂಪದ ನಿಘಂಟನ್ನು ರಚಿಸಿಕೊಟ್ಟ ಜರ್ಮನ್ ದೇಶದ ಕವಿ -----.
A) ಕಿಟಲ್ B) ಅಂಟೋನಿ C) ಅಂಬಾನಿ D) ಮೆಕಾಲೆ.
12. ಭಾರತ ಸರ್ಕಾರವು ಕನ್ನಡ ಭಾಷೆಯನ್ನು ಏನೆಂದು ಘೋಷಿಸಿದೆ?
A) ಲಿಪಿ B) ಮಾತೃಭಾಷೆ C) ಆಡಳಿತ ಭಾಷೆ D) ಶಾಸ್ತ್ರೀಯ ಭಾಷೆ.
13. ಯುಗಾದಿ ಕಥೆಯಲ್ಲಿರುವ ಪ್ರಹ್ಲಾದ ----- ಇಂಜಿನಿಯರ್.
A) ಹಾರ್ಡ್‌ವೇರ್ ಇಂಜಿನಿಯರ್ B) ಸಿವಿಲ್ ಇಂಜಿನಿಯರ್
C) ಸಾಫ್ಟ್‌ವೇರ್ ಇಂಜಿನಿಯರ್ D) ಮೆಕ್ಯಾನಿಕಲ್ ಇಂಜಿನಿಯರ್.

14. ಮೊದಲ ಬಾರಿ ಜೋಗ ಜಲಪಾತ ಕಂಡು ವಿಶ್ವೇಶ್ವರಯ್ಯ ಅವರು ಉದ್ಧರಿಸಿದ್ದು -----
 A) ಎಷ್ಟೊಂದು ಶಕ್ತಿ ಪೋಲಾಗುತ್ತಿದೆ. B) ಎಷ್ಟೊಂದು ಭೀಕರವಾಗಿದೆ.
 C) ಎಷ್ಟೊಂದು ಗಲೀಜಾಗಿದೆ D) ಇದನ್ನು ನೋಡಿದ ನಾನೇ ಧನ್ಯ.
15. ಮಂಡ್ಯಜಿಲ್ಲೆಯ ಜನರಿಗೆ ಅನ್ನಬ್ರಹ್ಮನಾಗಿ ಅವತಾರ ಪುರುಷನಾಗೆ ಕಾಣಿಸಿಕೊಂಡವರು -----
 A) ಎ.ಎನ್. ಮೂರ್ತಿರಾವ್ B) ಸರ್. ಎಂ. ವಿಶ್ವೇಶ್ವರಯ್ಯ
 C) ಕಂಬಾರ D) ಕುವೆಂಪು.
16. ಗೋಪಣ್ಣ ಮಾಸ್ತರರ ಆತ್ಮೀಯ ಗೆಳೆಯ -----
 A) ಕಾಸಿನಾಬರು B) ನರಸಿಂಹಮೂರ್ತಿ C) ಪ್ರಹ್ಲಾದ D) ಬ್ರಾಹ್ಮಣ.
17. ರಸಖುಷಿ ಎಂದು ಕರೆಯಲ್ಪಡುವ ಕವಿ -----
 A) ಡಿವಿಜಿ B) ಕುವೆಂಪು C) ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ D) ಗೋವಿಂದ ಪೈ.
18. ಕಬ್ಬಿಗರ ಕಾವ್ಯ ಕೃತಿಯನ್ನು ರಚಿಸಿದವರು -----
 A) ಪಂಪ B) ಆಂಡಯ್ಯ C) ಹಲ್ಮಿಡಿ ಶಾಸನ D) ಕಾವ್ಯ.
19. ಕುಣಬಿ ಜನಾಂಗದವರು ಮೂಲತಃ ಯಾವ ರಾಜ್ಯದ ಹಿನ್ನಲೆ ಹೊಂದಿದ್ದಾರೆ.
 A) ಮಧ್ಯಪ್ರದೇಶ B) ರಾಜಸ್ಥಾನ್ C) ಆಂಧ್ರಪ್ರದೇಶ D) ಗೋವಾ.
20. ಭಾರತದಲ್ಲಿ ಬಟ್ಟೆಗಳ ತಯಾರಿಕೆಗೆ ಬೇರೆ ಬೇರೆ ಬಣ್ಣಗಳನ್ನು ನೀಡುವ ಸುಮಾರು -----
 A) 300 B) 2500 C) 600 D) 200.
21. ತೇಲಾಡುವ ಮೇಘಗಳ ಮಧ್ಯೆ ಇರುವುದರಿಂದಲೇ ಇದಕ್ಕೆ ----- ಎಂಬ ಹೆಸರು ಬಂದಿದೆ.
 A) ಸಹ್ಯಾದ್ರಿ B) ಕುಣಬಿ C) ಪರ್ವತ D) ಮೆಗಾನೆ.
22. ಹಾಸನದ ಬಯಲು ಸೀಮೆಯಿಂದ ಅಕಸ್ಮಾತ್ತಾಗಿ ಮೆಗಾನೆ ಸೇರಿರುವವರು -----
 A) ಸೀತಮ್ಮ B) ಗೀತಮ್‌ಮ C) ಲಕ್ಷ್ಮಮ್ಮ D) ಮಾರಮ್ಮ.

B.L.D.E. ASSOCIATION'S
 VACHANA PITAMAH
 DR. P.G. HALAKATTI
 COLLEGE OF ENGINEERING
 LIBRARY, BIJAPUR.

23. ಸಂಗೀತಪುರವು ಈ ಹಿಂದೆ ಯಾರ ಉರಾಗಿತ್ತು?
A) ಕ್ರಿಸ್ತರು B) ಹಿಂದೂಗಳು C) ಜೈನರು D) ಕಾಡಿನ ಜನರ.
24. ಮನುಕುಲದ ಚರಿತ್ರೆಯಲ್ಲಿ ಮಹಿಳೆಯರ ಕೈಕಸುಬಾಗಿ ಆರಂಭವಾದ ಕಲೆಯೇ -----.
A) ಉದ್ಯಮ B) ಗೃಹೋಪಯೋಗಿ C) ಕರಕುಶಲ ಕಲೆ D) ಕಲೆ.
25. ಸರ್ವರಿಗೂ ಸಮಪಾಲು, ಸರ್ವರಿಗೂ ಸಮಬಾಳು ಇದು ----- ದ ವಾಣಿ.
A) ಕಲಿಯುಗ B) ತೈತಾಯುಗ C) ನವಯುಗ D) ಶಿಲಾಯುಗ.
26. ಹೋಳಿ, ಸಿಗ್ಮಾನರ್ತನ, ಕೋಲಪದ, ಗಮಟಿ, ಪದಗಳ ರಸದೌತಣ ಇವು ಕುಣಬಿಯವರ -----.
A) ಮಾತುಗಳು B) ಹಾಡುಗಳು C) ಆಭರಣಗಳು D) ನೃತ್ಯಗಳು.
27. ಬಟ್ಟೆಯ ಮೇಲಿನ ಮುದ್ರಣಕಲೆಗೆ ಮೂಲ ನೆಲೆಯಾದ ದೇಶ -----.
A) ಅಮೇರಿಕಾ B) ಆಫ್ರಿಕಾ C) ಭಾರತ D) ಇಂಗ್ಲೆಂಡ್.
28. ಸತ್ಯ ತನ್ನ ಸತ್ಯತೆಯಿಂದಲೇ ಪ್ರಭಾವಶಾಲಿಯಾಗಬಲ್ಲದೆಂಬುದು ವಿಶ್ವೇಶ್ವರಯ್ಯನವರ -----.
A) ಪ್ರೀತಿ B) ವಿಶ್ವಾಸ C) ಧರ್ಮ D) ನಂಬಿಕೆ.
29. "ದುಡಿದವನಿಗೆ ಪ್ರತಿಫಲ ದೊರೆಯಲೇಬೇಕು" ಎಂಬ ತತ್ವ -----.
A) ಗಾಂಧೀಜಿಯವರದು B) ನೆಹರೂವರದು
C) ವಿಶ್ವೇಶ್ವರಯ್ಯನವರದು D) ಕುವೆಂಪುರವರದು.
30. ಕನ್ನಡ ಸಂಸ್ಕೃತಿ ಈ ರೀತಿಯಾಗಿದೆ.
A) ಬಹುರೂಪಿಯಾಗಿದೆ. B) ವರ್ಣರಂಜಿತವಾಗಿದೆ
C) ಜೀವಂತವಾಗಿದೆ D) ಮೇಲಿನ ಎಲ್ಲವೂ.
31. ಕುರುಡು ಕಾಂಚಾಣದ ಕುಣಿತ ಮಾಮೂಲು ಕುಣಿತವಲ್ಲ ಅದು ಎಲ್ಲಾ ----- ಯ ಮೊತ್ತ.
A) ಆಕೃತಿ B) ಸ್ವೀಕೃತಿ C) ವಿಕೃತಿ D) ಸಂಪತ್ತು.

32. ಗೋಪಣ್ಣ ಮಾಸ್ತರರ ಮಗನ ಹೆಸರೇನು -----?
A) ಕರೀಂಖಾನ್ B) ಪ್ರಹ್ಲಾದ C) ರಾಮು D) ಶಿವಪ್ರಸಾದ.
33. ಕಾಸಿಂಸಾಬರ ಮಗಳ ಹೆಸರು -----.
A) ರುಕ್ಮಿಣಿ B) ರೇಖಾ C) ರಾಧಾ D) ಚಾಂದಿನಿ.
34. ಅಪಾರ್ಥಮೆಂಟಿನ ಜನರು ಗೋಪಣ್ಣ ಮಾಸ್ತರರನ್ನು ಕರೆದಿದ್ದು ಹೀಗೆ -----.
A) ತಾತ B) ಮಾಸ್ತರ C) ಓಲ್ಟ್ ಮ್ಯಾನ್ D) ಮುದುಕ.
35. ಕನಕದಾಸರ ಅಂಕಿತನಾಮ -----.
A) ಕನಕಪ್ಪ B) ದಾಸ
C) ತಿಮ್ಮಪ್ಪನಾಯಕ D) ಕಾಗಿನೆಲೆ ಆದಿಕೇಶವರಾಯ.
36. ಆರ್ಥಿಕವಾಗಿ ಹಾಗು ಸಾಮಾಜಿಕವಾಗಿ ಕೆಳಸ್ತರದಲ್ಲಿರುವ ವ್ಯಕ್ತಿಗಳು ಉಳಿಸಿಕೊಂಡು ಬಂದಿರುವ ಸಾಂಪ್ರದಾಯಿಕ ಮೌಲ್ಯಗಳ ತಿರುಳಾಗಿರುವ ಕತೆಯೇ, ಇದಾಗಿದೆ.
A) ಶರಪಂಜರ B) ಚೋಮನದುಡಿ C) ನಾಗರಹಾವು D) ಯುಗಾದಿ.
37. ಕಳವೆ ಪದದ ಅರ್ಥ-----.
A) ಚೀಲ B) ಭತ್ತ C) ರಾಗಿ D) ಜೋಳ.
38. ಸಮುದಾಯಕ್ಕಾಗಿ ಪ್ರಾಣತ್ಯಾಗ ಮಾಡುವ ಶೌರ್ಯದ ಸಂಕೇತಿಕವಾಗಿ ನಿಲ್ಲಿಸುವ ಕಲ್ಲೇ.
A) ಶಾಸನ B) ಗಡಿಕಲ್ಲು C) ಶಿಲಾಶಾಸನ D) ವೀರಗಲ್ಲು.
39. ಕುರುಡ ಕಣ್ಣು ಕಾಣಲರಿಯದೆ ----- ಬಯ್ಯದು.
A) ಕಿವಿ B) ಕಣ್ಣು C) ಕನ್ನಡಿ D) ದೇವರು.
40. ಕೂಲಿ ಕಂಬಳಿಯವರ ಪಾಲಿನ ಮೈದೊಗಲ ಧೂಳಿಯು ----- ಹಣೆಯೊಳಗಿತ್ತೊ.
A) ಕುಂಕುಮ B) ಭಂಡಾರ C) ಅಂಗಾರ D) ಶ್ರಮ.

41. 1800 ರಲ್ಲಿ ಬಳ್ಳಾರಿ ಜಿಲ್ಲೆಯ ಕಲೆಕ್ಟರ್ ಆಗಿದ್ದವರು-----
 A) ಡಿಸಿ B) ಪಂಡಿತ C) ಸರ್ ಥಾಮಸ್ ಮನ್ರೋ D) ಅಧಿಕಾರಿ.
42. ಕನ್ನಡ ಭಾಷೆಯನ್ನು ಲಿಪಿಗಳ ರಾಣಿ ಎಂದು ಕರೆದವರು -----
 A) ಅಕ್ಕಮಹಾದೇವಿ B) ತ್ರಿವೇಣಿ C) ಜನಪದಸ್ತ್ರೀ D) ವಿನೋಬಾ ಭಾವೆ.
43. ಕನ್ನಡ ನಾಡಿನ ಜನತೆಯನ್ನು ವರ್ಣಿಸಿರುವ ಗ್ರಂಥ -----
 A) ಗರಿ B) ಸಖಿಗೀತ C) ಕಗ್ಗ D) ಕವಿರಾಜಮಾರ್ಗ.
44. ವಿದ್ಯಾವರ್ಧಕ ಸಂಘವು ಎಲ್ಲಿ ಸ್ಥಾಪನೆಯಾಯಿತು?
 A) ಧಾರವಾಡ B) ಹುಬ್ಬಳ್ಳಿ C) ಹರಿಹರ D) ದಾವಣಗೆರೆ.
45. ಜನಪದ ಸಾಹಿತ್ಯದ ಪ್ರಕಾರಗಳು -----
 A) ಕವನ B) ಕಾದಂಬರಿ
 C) ಹಾಡು, ಒಗಟು, ಒಡಪು, ಭಾವಗೀತೆ D) ಚಿತ್ರಗೀತೆ.
46. ನಗುವು ಸಹಜದ ಧರ್ಮ, ನಗೆಸುವುದು -----
 A) ಧರ್ಮ B) ಅಧರ್ಮ C) ಹುಚ್ಚು D) ಪರಧರ್ಮ.
47. ವಸುಧೆಯೊಳ್ ಶಿಶುನಾಳಧೀಶನ ಮುಂದೆ ದ್ಯಾನದ ಮಗಿಯೊಂದು ಇಡುವಾಕಿ -----
 A) ಅಗಸಗಿತ್ತಿ B) ಕುಂಬಾರಕಿ C) ಬಳೆಗಾರ್ತಿ D) ಮುದುಕಿ.
48. ಹೊತ್ತು ಕಣಕಣದಿ ಮಣ್ಣನುಗೆದ್ದಲಿರುವೆಗಳು ಕಟ್ಟಿದಗೂಡಿಗೆ ಸೇರುವುದು -----
 A) ಗಿಳಿ B) ಗೀಜಗ C) ಗುಬ್ಬಿ D) ಸರ್ಪ.
49. ಕೊಟ್ಟು ಕುದಿಯಲುಬೇಡ, ಇಟ್ಟು ಹಂಗಿಸಬೇಡ, ಎಷ್ಟುಂಡರೆಂದು ಅನಬೇಡ, ಈ ಮೂರು ಮುಟ್ಟಾವು -----
 ಸದರೀಗಿ.
 A) ಬ್ರಹ್ಮನ B) ವಿಷ್ಣುವಿನ C) ಮಹೇಶ್ವರನ D) ಶಿವನ
50. ತಲ್ಲಣಿಸದಿರು ಕಂಡ್ಯ ತಾಳು ಮನವೇ, ಕೀರ್ತನೆಯ ರಚನಕಾರರು -----
 A) ಶರಣರು B) ವಚನಕಾರರು C) ಕನಕದಾಸರು D) ಪುರಂದರದಾಸರು.

Ver-C 6 of 6

CBCS SCHEME

BKBKK107

USN

--	--	--	--	--	--	--	--	--	--

Question Paper Version : D

First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 2023 Balake Kannada

Time: 1 hr.]

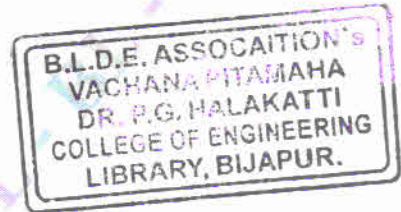
[Max. Marks: 50

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.**

Fill in the blank by translating the given English word to Kannada.

1. We : _____
a) NaaVu
b) Namage
c) Namma
d) Nimage
2. She : _____
a) Neenu
b) Avanu
c) Naanu
d) Avalu
3. This : _____
a) Adu
b) Alli
c) Idu
d) Both a and b
4. Yaaru : _____
a) where
b) who
c) what
d) when



Note : Match the correct answer using the table given below for Q.5 to Q.10

English word	Kannada word
i - Red	a - Dappa
ii - Long	b - chikka
iii - Green	c - gidda
iv - Thick	d - Kempu
v - Short	e - udda
vi - Small	f - Hasiru

5. Meaning of Red _____
a) i - f
b) i - a
c) i - d
d) i - b

6. Meaning of Long _____
 a) ii - c
 c) ii - d
 b) ii - b
 d) ii - e
7. Meaning of green _____
 a) iii - f
 c) iii - d
 b) iii - e
 d) iii - a
8. Meaning of Thick _____
 a) iv - e
 c) iv - d
 b) iv - b
 d) iv - a
9. Meaning of Short _____
 a) v - c
 c) v - d
 b) v - e
 d) v - f
10. Meaning of Small _____
 a) vi - a
 c) vi - b
 b) vi - e
 d) vi - d

Note : Complete the analogy (from Q.11 to Q.13)

11. Raaja : Rajanadu :: Akka : _____
 a) Akkanadu
 c) Akkaninda
 b) Akkadu
 d) None of these
12. Mane : Maneyali :: uuru : _____
 a) uurinind
 c) uuralli
 b) uurige
 d) uurannu
13. Seven : Elu :: Ten : _____
 a) Muuru
 c) Hattu
 b) Aaru
 d) Ondu

Note : Fill in the blank choosing the right word (Q.14 to Q.18)

14. Granthalaya means _____
 a) Library
 c) Temple
 b) Class room
 d) Lab
15. "Arogya" means _____
 a) Shelter
 c) Wealth
 b) House
 d) Health
16. "Shubhodaya" means _____
 a) Good morning
 c) Have a nice day
 b) Good night
 d) Good evening
17. "Good night" means _____
 a) Shubha Raatri
 c) Kshamisi
 b) Danyavadagalu
 d) None of these

18. "Ishta Illa" means
 a) I will not do
 b) I don't like
 c) Both a and b are correct
 d) I will do
19. "Naanu collegige hogutiddene". Change this to simple past.
 a) Naanu collegige Barolla
 b) Naanu collegige hogalla
 c) Namma collegige Raje Ide
 d) Naanu collegige Hogidde
20. Had your breakfast? Choose the correct answer in Kannada.
 a) Aitu
 b) Beda
 c) Both a and b
 d) None of these

Note : Write Kannada word for the given English word.

21. Holiday _____
 a) Health
 b) Festival
 c) Celeberations
 d) Raje
22. Song _____
 a) Kadime
 b) Nrutya
 c) Vignana
 d) Haadu

Complete the following:

23. Naanu : Nanna ; Neenu : _____
 a) Avala
 b) Ninna
 c) Avana
 d) Avara
24. Amma : Mother ; Tangi : _____
 a) Sister
 b) Brother
 c) Father
 d) Friend
25. What : Enu ; Where : _____
 a) Elli
 b) Hege
 c) Eeke
 d) Yaaru
26. The meaning of Vidyarthi in English
 a) School
 b) College
 c) Teacher
 d) Student
27. Choose the correct Kannada Translation of
 "Nimma Hesaru eenu?"
 a) What is your age?
 b) What is your name?
 c) What are you doing?
 d) What is the college name?
28. "Prarthana's book is Blue". Pusthakada Banna Yaavudu?
 a) Kappu
 b) Bili
 c) Neeli
 d) Hasiru

Note : Choose the correct word to complete the sentence.

29. Ivaru Nanna _____
 a) Doddadu b) Sari Ide
 c) Chikkadu d) Tande
30. Nanna _____ Bengaluru.
 a) ooru b) Kaalu
 c) ishta d) Nagu
31. Nanage Kannada _____
 a) Red b) Gottu
 c) Blue d) Green
32. Neenu _____ Baa
 a) Anna b) Akka
 c) Bega d) Tande

Note : Translate into English for the given Kannada sentences:

33. Neevu Yaaru?
 a) Who are you? b) What is your name?
 c) Had your dinner? d) Where are you?
34. oota aita?
 a) Had your food? b) Had your exams?
 c) Where is oota? d) How was the food?
35. Nanna Hesaru Amar.
 a) My friend is Amar. b) My name is Amar.
 c) Amar is my brother. d) Amar is my friend.
36. Kannada gotta?
 a) I love Kannada b) Kannada is a language
 c) I know Kannada d) Do you know Kannada
37. Ivaru Nanna Amma.
 a) She is my mother b) She is my friend
 c) She is my sister d) None of these

Note : Choose the appropriate answer (Q.No. 38 to Q.No. 40)

38. Hugu : Hogona :: Ba : _____
 a) Baralla b) Barona
 c) Hodanu d) Bandanu
39. Kalegu + inda : Kalegininda :: Mane + inda : _____
 a) Maneyalli b) Manege
 c) Maneyinda d) Maneyannu
40. Kudi : Kudiyiri :: Haaki : _____
 a) Haakona b) Beku
 c) Hakuvudilla d) Haakiri

41. Which of the following are the hints for correct and polite conversation?
 a) pronounce the words properly b) use plural forms to address others
 c) use simple sentences for conversation d) All of these
42. Avanu _____ Huduga.
 a) JaaNa b) Vidhyarthi
 c) Kelasa d) All of these
43. Bengaluru _____ Nagara.
 a) Dodda b) Bili
 c) Jaasti d) Halli
44. In Kannada what to say for "Little"
 a) Ishta b) Jaasti
 c) Swalpa d) None of these

Write the English word for the given Kannada word

45. Tale _____
 a) Neck b) Head
 c) Leg d) Hand
46. Kaalu _____
 a) neck b) Hand
 c) Leg d) Head
47. Tarakaari _____
 a) Vegetable b) Fruit
 c) Banana d) Milk
48. Habba _____
 a) Festival b) Marriage
 c) Heritage d) Ritual
49. Maga _____
 a) Father b) Mother
 c) Son d) Daughter
50. Mane _____
 a) Temple b) House
 c) Hospital d) Church

CBCGS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

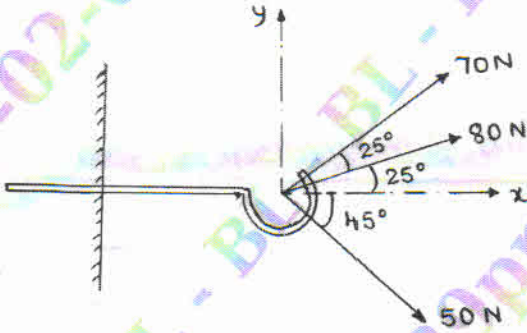
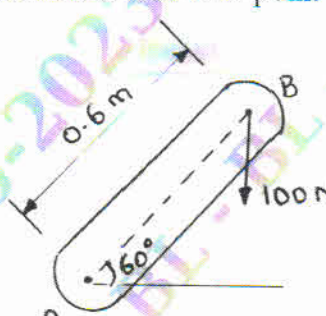
BCIVC103

First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 2023 Engineering Mechanics

Time: 3 hrs.

Max. Marks: 100

- Note: 1. 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
Q.1	a.	Explain the classifications of force system.	8	L2	CO1
	b.	Explain the principle of transmissibility of a force.	4	L2	CO1
	c.	Determine the resultant of the three forces acting on a hook as shown in Fig.Q1(c).	8	L3	CO1
 <p style="text-align: center;">Fig.Q1(c)</p>					
OR					
Q.2	a.	Explain free body diagram with examples.	8	L2	CO1
	b.	Explain principle of moments.	4	L2	CO1
	c.	A 100 N vertical force is applied to a shaft at point 'B' as shown in Fig.Q2(c). Determine the effect of 100 N at point 'A'.	8	L3	CO1
 <p style="text-align: center;">Fig.Q2(c)</p>					
Module - 2					
Q.3	a.	State Lami's theorem.	4	L2	CO2
	b.	A wire rope is fixed at two points A and D as shown in Fig.Q3(b). Weights 20 kN and 30 kN are attached to it at B and C, respectively. The weights rest with portions AB and BC inclined at 30 degrees and 50 degrees respectively, to the vertical as shown in the figure. Find the tension in segments AB, BC and CD of the wire. Determine the inclination of the segment CD to vertical.	8	L3	CO2

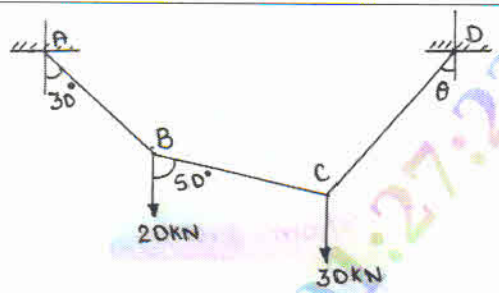


Fig.Q3(b)

c. Determine the resultant of the system of forces acting on a beam as shown in Fig.Q3(c).

8 L3 CO2

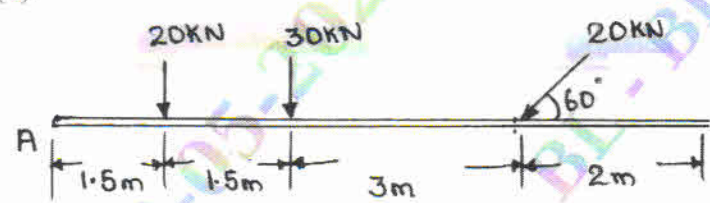


Fig.Q3(c)

OR

Q.4 a. Explain the different types of supports. 6 L2 CO2

b. Explain the different types of beam. 6 L2 CO2

c. Determine the reactions developed in the Cantilever beam shown in Fig.Q4(c). 8 L3 CO2

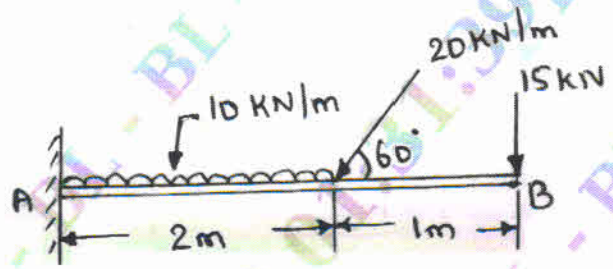


Fig.Q4(c).

Module - 3

Q.5 a. Explain the analysis of truss by method of joints. 4 L2 CO3

b. State the assumptions made in truss analysis. 6 L2 CO3

c. Find the forces in the members of the truss shown in Fig.Q5(c) using the method of joints. 10 L3 CO3

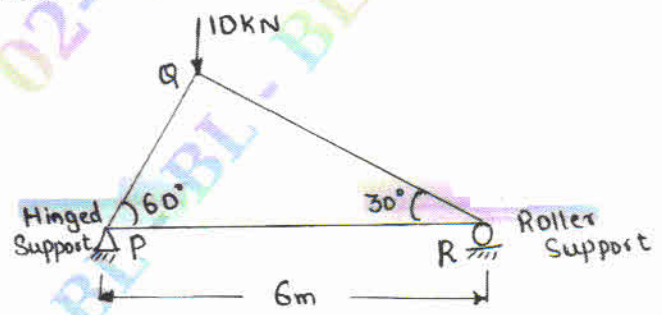


Fig.Q5(c)

OR

Q.6	a.	Explain laws of friction.	4	L2	CO3
	b.	Explain angle of friction and angle of repose.	6	L2	CO3
	c.	A block shown in Fig.Q6(c) is just moved by a force of 200 N. The weight of the block is 600 N. Determine the coefficient of static friction between the block and the floor.	10	L3	CO3

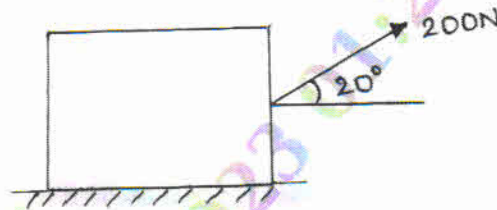


Fig.Q6(c)

Module - 4

Q.7	a.	Derive the position of centroid for a triangle by the first principle.	8	L2	CO4
	b.	Locate the centroid of the I-section shown in Fig.Q7(b).	8	L3	CO4
	c.	Explain centre of gravity and centroid.	4	L2	CO4

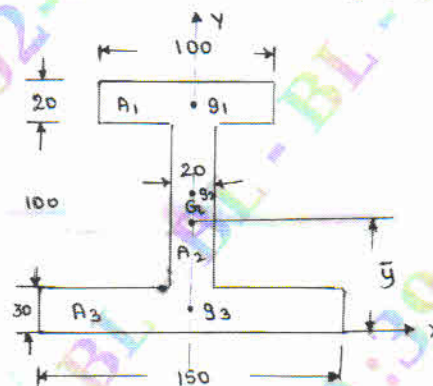


Fig.Q7(b)

B.L.D.E. ASSOCIATION'S
VACHANA PITAMAH
DR. P.G. HALAKATTI
COLLEGE OF ENGINEERING
LIBRARY, BIJAPUR.

OR					
Q.8	a.	Explain perpendicular axis theorem.	4	L2	CO4
	b.	Explain parallel axis theorem.	4	L2	CO4
	c.	Determine the moment of inertia of the section shown in Fig.Q8(c) about an axis passing through the centroid and parallel to the top most fibre of the section. Also determine moment of inertia about the axis of symmetry. Hence find radii of gyration.	12	L3	CO4

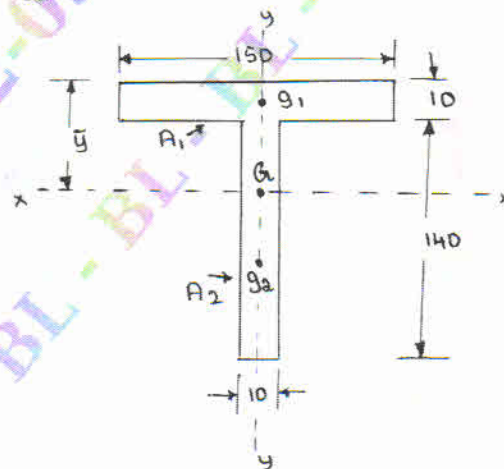
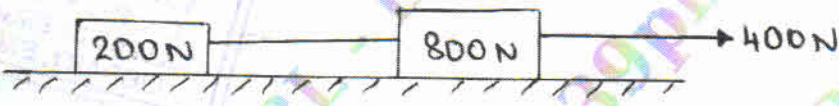


Fig.Q8(c)

Module - 5

Q.9	a.	Explain the projectile motion with following terms: (i) Velocity of projections (ii) Angle of projection (iii) Time of flight (iv) Horizontal range	10	L2	CO5
	b.	The ball is kicked from point A with the initial velocity $V_A = 10$ m/s, $\alpha = 30^\circ$. Determine the maximum height it reaches.	4	L3	CO5
	c.	A projectile is fixed with an initial velocity of 40 m/s at an angle of 25° with the horizontal. Determine: (i) Horizontal range (ii) Maximum height attained by particle (iii) Time of flight	6	L3	CO5
OR					
Q.10	a.	Explain Kinetics and State Newton's second law of motion.	5	L2	CO5
	b.	Two weights 800 N and 200 N are connected by a thread and they move along a rough horizontal plane under the action of a force of 400 N applied to the 800 N weight as shown in Fig.Q10(b). The coefficient of friction between the sliding surface of the weights and the plane is 0.3. Using D'Alembert's principle, determine the acceleration of the weight and tension in the thread.  Fig.Q10(b)	10	L3	CO5
	c.	State and explain D'Alembert's principle.	5	L2	CO5

CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

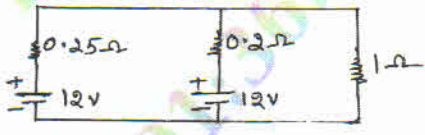
BESCK104B /BESCKB104

First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 2023 Introduction to Electrical Engineering

Time: 3 hrs.

Max. Marks: 100

- Note: 1. 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
Q.1	a.	With the help of single line diagram, explain the electrical power transmission and distribution system.	6	L2	CO2
	b.	Explain the working of hydro power generation using relevant block diagram.	8	L2	CO1
	c.	A resistance R is connected in series with a parallel circuit comprising of two resistance 12Ω and 8Ω . The total power in the circuit is 70W, when the applied voltage is 20V. Calculate R.	6	L3	CO1
OR					
Q.2	a.	State Kirchoff's law for DC circuits. Illustrate with an example.	6	L2	CO1
	b.	With the help of block diagram, explain the working of Solar power generation.	8	L2	CO1
	c.	For the circuit shown in Fig. Q2(c), find the current supplied by each battery and power dissipated in 1Ω resistor.	6	L3	CO2
		Fig. Q2(c) 			
Module – 2					
Q.3	a.	A pure inductor excited by sinusoidal varying AC voltage, show that the average power consumed by inductor is zero.	8	L2	CO1
	b.	Define i) Real power ii) Reactive power iii) Apparent power iv) Power factor.	6	L1	CO1
	c.	The current in a circuit is $(8 - j10)A$, when the applied voltage is $(50 + j25)$ volts. Determine i) The magnitude of the current ii) Impedance iii) The circuit elements iv) Power factor v) Power.	6	L3	CO2
OR					
Q.4	a.	Develop an equation for the power consumed by a R – C series circuit. Draw the waveform of voltage, current and power.	8	L2	CO3
	b.	With relevant diagrams, explain the concept of line values of voltage and current and phase values of voltage and currents in 3 ϕ star and delta connections.	6	L2	CO3
1 of 3					

	c.	A circuit having a resistance of 12Ω on inductors of $0.15H$ and a capacitance of $100\mu F$ in series is connected across a $100V, 50Hz$ supply. Calculate i) Impedance ii) Current iii) Power factor iv) Phase difference between the current and supply voltage v) Power.	6	L3	CO3
Module – 3					
Q.5	a.	With the help of neat diagram, explain the construction of DC generator.	8	L2	CO4
	b.	With usual notations, derive the torque equation of a DC motor.	6	L2	CO4
	c.	A d.c. shunt generator has a shunt field winding resistance of 100Ω , it is supplying a load of $5kW$ at a voltage of $250V$. If its armature resistance is 0.22Ω and per brush voltage drop is 1 volt. Calculate the induced e.m.f of generator.	6	L3	CO4
OR					
Q.6	a.	Give the classification of DC generator. Obtain the expression for EMF equation of a DC generator.	8	L2	CO4
	b.	With neat diagrams, explain the speed control of DC shunt motor.	6	L2	CO4
	c.	A 4 pole dc shunt motor takes $22 A$ from $220V$ supply. the armature and field resistances are respectively 0.5Ω and 100Ω . The armature is lap connected with 300 conductors. If the flux per pole is 20 mwb, calculate i) Speed ii) Gross torque.	6	L3	CO4
Module – 4					
Q.7	a.	Explain the working principle of single phase transformer and its necessity in power system.	8	L1	CO1
	b.	Explain the concept of rotating magnetic field in a 3 – phase induction motor with neat vector diagrams.	6	L2	CO2
	c.	The maximum efficiency at full load and unity power factor of a single – phase $25KVA, 500V/1000V, 50Hz$, transformer is 98% . Determine its efficiency at i) 75% load, 0.9 p.f. ii) 50% load, 0.8 p.f.	6	L3	CO2
OR					
Q.8	a.	With relevant diagrams, explain the construction of 3 – phase induction motors.	8	L2	CO2
	b.	Derive an EMF equation of single phase transformer with usual notation.	6	L2	CO2
	c.	A 3 – phase, $50Hz, 4$ pole induction motor, its rotor induced e.m.f is 1.5 Hz frequency. Calculate i) Synchronous speed ii) Full load slip iii) Actual speed.	6	L3	CO3
Module – 5					
Q.9	a.	List the types of wiring system used for domestic / industry. Explain suitable wiring used for staircase, give the schematic / circuit diagram.	6	L1	CO5
	b.	What is Earthing? With a neat diagram, explain plate earthing.	8	L2	CO5
	c.	Define Unit and Tariff. Explain the two port tariff with its merits and demerits.	6	L2	CO5

OR

Q.10	a.	What is Fuse? With neat diagram, explain the working principle of fuse.	6	L2	CO5
	b.	Define Electric shock. What are the safety precaution to be taken against to avoid electric shock?	8	L2	CO5
	c.	An electric boiler draws 6A current at 230V for 4 hrs. The electricity costs Rs 3/- per unit. Determine the total cost.	6	L3	CO5

B.L.D.E. ASSOCIATION'S
VACHANA PITAMAH
DR. P.G. HALAKATTI
COLLEGE OF ENGINEERING
LIBRARY, BIJAPUR.

USN

--	--	--	--	--	--	--	--	--	--

Question Paper Version : B

First Semester B.E./B. Tech Degree Examination, Jan./Feb. 2023
Indian Constitution

Time: 1 hrs.

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. Chief Election Commissioner of India can be removed from the office by _____
a) Both of houses of Parliament b) Union Council of Minister
c) President of India d) Both a and b option combined
 2. Who among the following was the first Chief Election Commissioner of India
a) K. V. K Sundaram b) Sukumar Sen
c) M. Patanjali Sastri d) S. P. Sen Verma
 3. Who is the Present Chief Election Commissioner in India?
a) Sunil Arora b) Suohil Chandra c) Rajiv Kumar d) Om Prakash Rawat
 4. The Emergency Provisions of Indian Constitution have been borrowed from
a) Germany b) Japan c) USSR d) USA
 5. How many types of emergencies are there in Constitution of India?
a) 1 b) 2 c) 3 d) 4
 6. President can Proclaim a Financial Emergency under which among the following Articles?
a) Article 350 b) Article 352 c) Article 356 d) Article 360
 7. Which among the following Articles gives the power to the Central Government to take Pre –
emptive action to protect any State against External aggression and Internal disturbances?
a) Article 355 b) Article 358 c) Article 356 d) Article 360
 8. Enact means
a) Single chapter b) Single action
c) Past a Law d) Rectify the mistakes in the Law
 9. Election Commission does not conduct Election to
a) The office of the President b) The office of the Vice – President
c) The office of the Speaker of Lok Sabha d) State Legislature and Union Territory
 10. Once the Proclamation of Financial Emergency is declared or approved by the Parliament it
continues for
a) Another six months b) One Year c) Two Years d) Indefinitely

11. When is the Budget Session month happens in Lok Sabha?
 - a) July to September
 - b) February to May
 - c) April to May
 - d) November to January
12. What is the minimum total Quorum to be present during the Lok Sabha Sessions?
 - a) $\frac{1}{12}$ th
 - b) $\frac{1}{10}$ th
 - c) $\frac{1}{50}$ th
 - d) $\frac{1}{15}$ th
13. Who is the present Chief Justice of India?
 - a) D.Y. Chandrachud
 - b) N.V. Ramana
 - c) Jagdeep Dhankar
 - d) None of these
14. Karnataka has bicameral system of State Legislature. Bicameral means
 - a) Two Cameras
 - b) Lok Sabha and Rajya Sabha
 - c) Vidhan Sabha and Vidhan Parishad
 - d) Only Vidhan Sabha
15. How many Highcourts are there in India?
 - a) 29
 - b) 25
 - c) 24
 - d) 18
16. Under a single, integrated, hierarchical Judicial system, the High Courts in the states are directly under the
 - a) President
 - b) Governor of the State
 - c) Union Parliament
 - d) Supreme Court
17. The Supreme Court was set up under
 - a) Pitts India Act
 - b) Regulating Act
 - c) Indian Council Act 1861
 - d) Indian Councils Act 1892
18. A Judge of the Supreme Court will be removed on the basis of violation of Constitutional principles through
 - a) Impeachment
 - b) Retirement
 - c) Appointment
 - d) Judgment
19. Who is the Present Governor of Karnataka?
 - a) Rama Devi
 - b) Thawar Chand Gehlot
 - c) Vajuhbhaiwala
 - d) HR Bhardwaj
20. Original Jurisdiction of the Supreme Court includes :
 - a) Appeals in Civil cases
 - b) Appeals in Criminal cases
 - c) Interstate disputes
 - d) All of these
21. Which of the following writ is issued by the Supreme Court if it sends an order to restrain a person from acting in an office to which he is not entitled
 - a) Habeas corpus
 - b) Prohibition
 - c) Cestorian
 - d) Quo warranto
22. Which of the following right mentioned in the Indian Constitution is absolute in nature?
 - a) Right to Equality
 - b) Right to Freedom of Religion
 - c) Right to Constitutional Remedies
 - d) Right to get equal pay for equal work
23. Which of the following Articles of the Constitution of India covers the Right to Freedom?
 - a) Articles 19 to 22
 - b) Articles 29 to 30
 - c) Article 32
 - d) Articles 14 to 18
24. During National emergency which of the following provision stands suspended
 - a) DPSP
 - b) Amendment procedures
 - c) Fundamental Rights
 - d) Judicial Review
25. Which Fundamental Right ceased to be a Fundamental Right and became a Legal Right under the 44th Amendment of the Indian Constitution.
 - a) Right to Property
 - b) Right to Primary Education
 - c) Right to Information
 - d) Right to Life

