CBCS SCHEME

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First/Second Semester B.E./B.Tech. Degree Examination, June/July 2024
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. M : Marks , L: Bloom's level , C: Course outcomes.

			M	L	C
		Module – 1			
Q.1	a.	Define Computer. Explain the various types of computer.	10	L2	CO1
	b.	Explain the basic structures of C program in detail. Write a sample program to demonstrate the components in the structure of C program.	10	L2	CO2
		OR			
Q.2	a.	Explain scanf( ) and printf( ) functions in C language with syntax and example.	08	L2	CO2
	b.	What is variable? Explain rules for constructing variable in C. Give example for valid and invalid variable.	06	L2	CO2
	c.	Illustrate the flowchart and write a C program which takes as input p, t, v compute the simple interest and display result.	06	L2	CO2
		Module – 2			
Q.3	a.	Explain the following operators in 'C': i) Relational ii) Logical iii) Conditional iv) Bitwise.	08	L2	CO2
	b.	Explain for loop statement with syntax and example program.	06	L2	CO2
	c.	Write a C program to simulate simple calculator that performs arithmetic operations using switch statement. Error message should be displayed if any attempt is made to divide by zero.	06	L2	CO3
		OR			
Q.4	a.	Explain if, if-else, nested if and cascaded if-else statements with syntax and example.	08	L2	CO2
	b.	Write a C program that takes three coefficient (a, b, c) to calculate roots of quadratic equation, print all possible roots with appropriate messages for a set of coefficients.	06	L2	CO5
	c.	Explain break and continue statements with respect while, do-while and for loops.	06	L2	CO2
		Module – 3			
Q.5	a.	Define function. Explain categories of user defined functions.	10	L2	CO4
	b.	Define two-dimension array. Write a C program to multiply 2 matrix by ensuring their multiplication compatibility.	10	L2	CO3
		OR			
Q.6	a.	Explain function call, function definition and function prototype with syntax and example for each.	10	L2	CO4
	b.	Write a C program to implement Binary search for integers.	05	L2	CO3
	c.	What is Recursion? Write a C program to compute factorial of number using recursion.	05	L2	CO3
		Module – 4			
Q.7	a.	Define string. Explain any four string manipulating functions with example.	10	L2	CO3
	b.	Write a C program to concatenate two strings without using built-in function strcut( ).	05	L2	CO3
	c.	Explain string unformatted input/output functions with example.	05	L2	CO3

		OR			
Q.8	a.	Define pointer. Explain pointer variable declaration and initialization with suitable example.	08	L2	CO3
	b.	Explain pass by value and pass by address with example.	04	L2	CO3
	c.	Write a C program using pointers to compute sum, mean, standard deviation of all elements stored in an array of n real numbers.	08	L2	CO3
		Module – 5			
Q.9	a.	Explain structure declaration and how structure member are accessed with example.	10	L2	CO3
	b.	Implement a structure to read, write and compute average marks and the students scoring above and below average of class N students.	10	L3	CO5
		OR			
Q.10	a.	Compare between structure and union with syntax and example.	06	L2	CO3
	b.	Explain fopen( ), fclose( ), fscanf( ) and fprintf( ) with syntax and example program considering all above functions.	10	L2	CO4
	c.	What are enumeration variable? How are they declared?	04	L2	CO3

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USN ☐☐☐☐☐☐☐☐☐☐   **BBEE103/203**

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Basic Electronics for EEE Stream

Time: 3 hrs.   Max. Marks: 100

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

		Module – 1	M	L	C
Q.1	**a.**	Sketch the forward and Reverse characteristics for a Silicon diode and explain it.	6	L2	CO1
	b.	Explain the working of a Half wave rectifier with input and output waveform.	8	L2	CO1
	c.	What is Filter? Mention the types of Filter.	6	L1	CO1
		OR			
Q.2	**a.**	Write the various Diode Approximations.	8	L1	CO1
	b.	With circuit diagram and waveform, explain the working of a RC – π filter using Bridge rectifier.	6	L2	CO1
	c.	Explain the working of a Zener diode as a voltage Regulator with no load.	6	L2	CO1
		Module – 2			
Q.3	**a.**	Calculate I_c, I_E, and β for a Transistor that has $\alpha = 0.98$ and $I_B = 100\mu A$.	6	L3	CO2
	b.	Draw the input and output characteristics of a common – Emitter of a Transistor and explain it.	8	L2	CO2
	c.	For the voltage divider bias circuit shown in Fig Q2(c), determine V_B, V_E, I_E and V_{CE}. Assume $V_{BE} = 0.7V$	6	L3	CO2

Fig Q2(c)

		OR			
Q.4	**a.**	Explain the operation of an n-channel JFET for various bias voltages.	6	L2	CO2
	b.	Mention the advantages of FET over a BJT.	6	L1	CO2
	c.	Explain the construction of Enhancement MOSFET.	8	L2	CO2
		Module – 3			
Q.5	**a.**	Mention the ideal characteristics of Op-Amp.	10	L2	CO2
	b.	Define the following parameters of Op-Amp i) CMRR ii) Slew rate iii) PSRR iv) Input offset voltage.	4	L1	CO2
	c.	Derive the expression of voltage Gain of a Non-inverting Op-Amp.	6	L2	CO2
		OR			
Q.6	**a.**	How Op-Amp can be used as an integrator.	6	L2	CO2

	b.	Draw the block diagram of Typical Op-Amp and mention the function of each block.	6	L1	CO2
	c.	For the circuit shown in Fig Q6(c), find output voltage and voltage gain.	8	L3	CO2

Fig Q6(c)
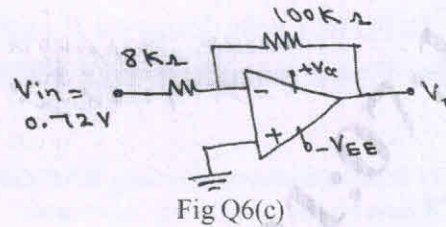
		Module – 4			
Q.7	a.	Perform the following : i) $(532.65) = (\quad)_{16} = (\quad)_2$ ii) $(ABCD)_{16} = (\quad)_2 = (\quad)_8$.	8	L3	CO3
	b.	State and prove the De Morgan's theorem for two variables.	8	L1	CO3
	c.	Using basic Boolean theorem prove that $(x + y) (x + z) = x + yz$.	4	L3	CO3

		OR			
Q.8	a.	Draw the logic circuit for the Boolean expression $Y = \overline{A}BC + A\overline{B}C + ABC$.	4	L1	CO4
	b.	Implement full adder using Two half adder and an OR-Gate.	8	L3	CO4
	c.	Simplify the following Boolean expressions $(A + B)(\overline{A} + B)$ ii) $\overline{A}\,\overline{B}\,\overline{C} + \overline{A}BC + AB\overline{C}$.	8	L3	CO4

		Module – 5			
Q.9	a.	What is strain Gauge? Explain the construction of unbounded strain gauge.	8	L2	CO5
	b.	With the help of circuit diagram and waveform, explain the operation of LVDT.	8	L2	CO5
	c.	What is Thermistor? Mention its applications.	4	L1	CO5

		OR			
Q.10	a.	Explain the working of Photodiode.	7	L2	CO5
	b.	Draw the block diagram of Superhetrodyne receiver and mention the function of each block.	10	L2	CO5
	c.	Mention the need for modulation.	3	L1	CO5

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CBCS SCHEME

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Elements of 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.	State and explain the Kirchoff's laws as applied to an electric circuit.	08	L2	CO1
	b.	Two resistances 50 Ω and 100 Ω are connected in parallel. A resistance of 20 Ω is connected in series with the combination. A voltage of 230 V is applied across the circuit. Determine the current in each resistor and voltage across 20 Ω resistor. Calculate also the power consumed in all resistors.	06	L3	CO1
	c.	State and explain Lenz's law.	06	L2	CO1
		OR			
Q.2	a.	State and explain Faraday's laws of electromagnetic induction.	08	L2	CO1
	b.	Derive an expression for dynamically induced EMF.	08	L3	CO1
	c.	Two 1000 turn air cored coils, 100 cm long, having a cross-sectional area of 500 cm² are placed side by side. The mutual inductance between them is 25 mH. Determine the self inductances of the coils and the co-efficient of coupling.	04	L3	CO1
		Module – 2			
Q.3	a.	Define Root Mean Square (RMS) value of an alternating current and derive the equation for RMS value in terms of maximum value.	08	L1	CO2
	b.	For the current wave i = 200 sin 314t. Determine i) RMS value ii) Average value iii) Frequency iv) Form factor v) Peak factor.	06	L2	CO2
	c.	Show that in a pure inductor, the current lags behind the voltage by 90°. Also draw the voltage and current waveforms.	06	L3	CO2
		OR			
Q.4	a.	Derive an equation for power consumed by an R-L series circuit. Draw the waveform of voltage, current and power.	08	L3	CO2
	b.	A circuit consists of a resistance of 20Ω an inductance of 0.05 H connected in series. A supply of 230V at 50 Hz is applied across the circuit. Determine the current, power factor and power consumed by the circuit.	06	L3	CO2
	c.	Explain i) Real Power ii) Reactive power iii) Power factor With respect to single phase A.C circuits.	06	L2	CO2
		Module – 3			
Q.5	a.	What are the advantages of three phase systems over single phase system? Explain.	06	L2	CO2
	b.	Deduce the relationship between the phase and line voltage, line current and power in a 3 phase star connected system.	08	L3	CO2
	c.	Three coils each having a resistance of 20Ω and an inductive reactance of 15Ω are connected in star to a 400V, 3 phase 50 Hz supply. Calculate i) Line current ii) Power factor iii) Power supplied.	06	L3	CO2

		OR			
Q.6	a.	Show that only two wattmeters are sufficient to measure power in a three phase balanced star connected system with the help of circuit diagram and phasor diagram.	08	L3	CO2
	b.	A balanced 3 phase star connected system draws power from 440 V supply. The two wattmeters connected indicate w_1 = 5 kW and w_2 = 1.2 kW. Calculate power, power factor and current in the circuit.	06	L3	CO2
	c.	Explain the following terms with respect to 3ϕ system: i) Phase sequence ii) Balanced supply iii) Balanced load	06	L3	CO2
		Module – 4			
Q.7	a.	With neat circuit diagram, explain construction and working of Wheatstone Bridge and derive the conditions of balance.	08	L2	CO4
	b.	With neat circuit diagram and truth table, explain two way control of a Lamp load.	06	L2	CO5
	c.	Write a short note on Current transformer.	06	L2	CO4
		OR			
Q.8	a.	Explain important factor to be considered for choice of domestic wiring.	06	L2	CO5
	b.	With neat circuit diagram, explain working of Kelvin double bridge for measurement of low resistance.	08	L2	CO4
	c.	Write a short note on Megger for insulation testing.	06	L2	CO4
		Module – 5			
Q.9	a.	Define tariff. Explain two part tariff for electricity billing.	06	L2	CO5
	b.	What is earthing? With neat diagram explain plate earthing.	08	L2	CO5
	c.	With neat diagram, explain the working of Residual Current Circuit Breaker (RCCB).	06	L2	CO5
		OR			
Q.10	a.	What is an electric shock? What are the precautions to be taken to prevent against shock.	06	L2	CO5
	b.	A consumer has a maximum demand of 100 kW at 60% load factor. If the tariff is Rs.200 per kW of maximum demand plus Rs.5 per kWh. Calculate the overall cost per kWh.	08	L3	CO5
	c.	Write a short note on Fuse as protective device.	06	L2	CO5

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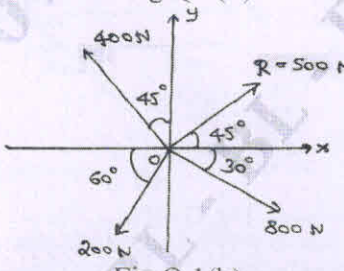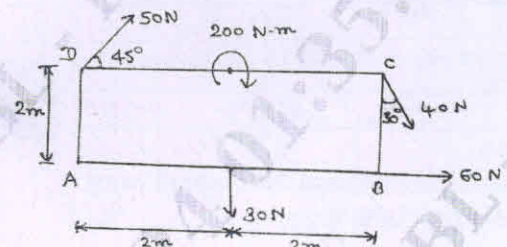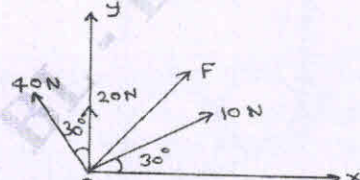
First/Second Semester B.E./B.Tech. Degree Examination, June/July2024
Engineering Mechanics

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 the following: i) Principle of transmissibility of a force ii) Composition of forces and resolution of a force.	6	L2	CO1
	b.	Determine the fourth unknown force in magnitude and direction so that the resultant $\vec{R}$ acts as shown in the Fig.Q.1(b). Fig.Q.1(b)	6	L3	CO1
	c.	Compute the resultant of the force system shown in the Fig.Q.1(c) with respect to point A. Also, locate the point where the resultant cuts the line AB. Fig.Q.1(c)	8	L3	CO1, 2
		OR			
Q.2	a.	State and prove principle of moments.	6	L2	CO1
	b.	Determine the unknown force $\vec{F}$ and its direction so that the resultant $\vec{R}$ of magnitude 72N acts along the positive direction of Y axis (↑). Fig.Q.2(b)	6	L3	CO1

1 of 5

	c.	Compute the magnitude and direction of the resultant of the force system shown in the Fig.Q.2(c) with respect to point A of the equilateral triangle ABC. Side of triangle is 100mm. Also, find the location of the resultant along the edge AC.	8	L3	CO1
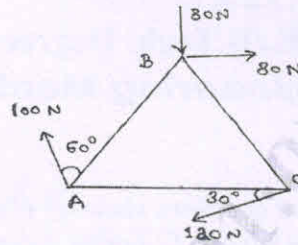
Fig.Q.2(c)

Module – 2

Q.3	a.	Define equilibrium. State the conditions for the equilibrium of coplanar i) Concurrent force system ii) non-concurrent force system.	5	L2	CO2
	b.	In the given string system, determine the tensions in the strings and the angle θ for equilibrium.	7	L3	CO2
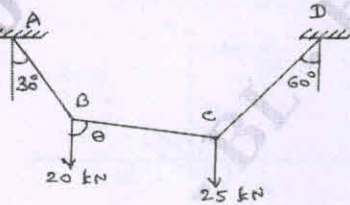
Fig.Q.3(b)

	c.	Determine the reactions in the beam shown in the Fig.Q.3(c).	8	L3	CO2

Fig.Q.3(c)

OR

Q.4	a.	Distinguish between : i) Statically determinate and indeterminate beams. ii) Hinged support and fixed support.	6	L2	CO2
	b.	Compute the reactions at the contact points in the system shown (1, 2, 3, 4). Weight of sphere A = 50N Weight of sphere B = 80N Diameter of sphere A = 50mm Diameter of sphere B = 100mm.	8	L3	CO2

Fig.Q.4(b)

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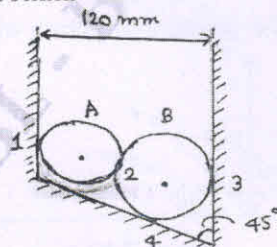
	c.	Determine the support reactions in the beam shown : Fig.Q.4(c)	6	L3	CO2
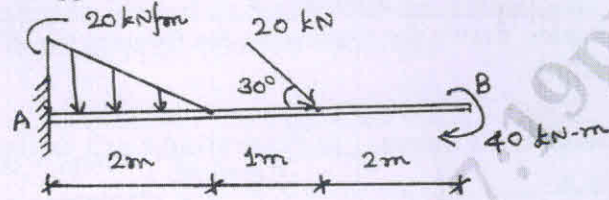
Module – 3

Q.5	a.	Determine the forces in the members of the truss shown in the figure by the method of joints. Fig.Q.5(a)	10	L3	CO3
	b.	State the laws of dry friction.	3	L2	CO3
	c.	A weight 500N just starts moving down a rough inclined plane supported by a force of 200N acting parallel to the plane and it is at the point of moving up the plane when pulled by a force of 300N parallel to the plane. Find the inclination of the plane and the coefficient of friction between the inclined plane and the weight.	7	L3	CO3
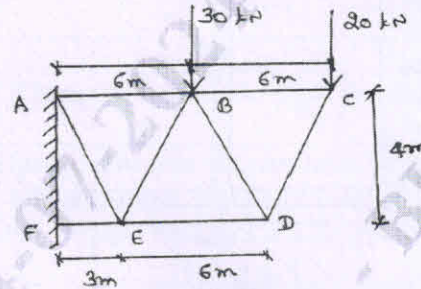
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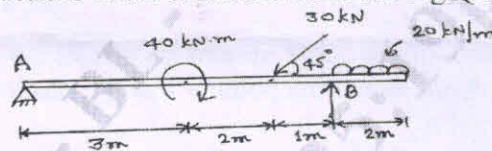|					
Q.6	a.	Compute the forces in the members of the truss shown in the Fig.Q.6(a) by the method of joints. Fig.Q.6(a)	10	L3	CO3
	b.	Distinguish between angle of friction and angle of repose. Illustrate with a sketch.	3	L2	CO3
	c.	A uniform ladder 4m long weighing 300N is placed against a vertical wall with an angle 60° with the floor. The coefficient of friction between the wall and the ladder is 0.25 and that between floor and ladder is 0.35. The ladder has to support a load of 1500N at its top. Find the horizontal force P to be applied at the bottom of the ladder to just prevent slipping.	7	L3	CO3
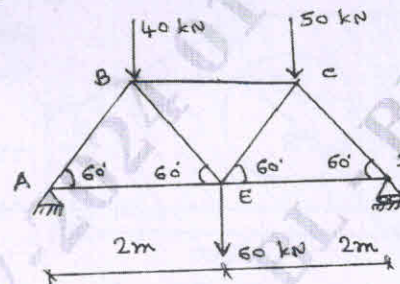
Module – 4					
Q.7	a.	From first principles, derive the expression for locating the centroid of a semi-circular section.	6	L3	CO4
	b.	Illustrate: i) Parallel axis theorem ii) Perpendicular axis theorem.	4	L2	CO4
	c.	Determine the polar moment of inertia of the I-section shown in Fig.Q.7(c). All the dimensions are in mms.	10	L3	CO4
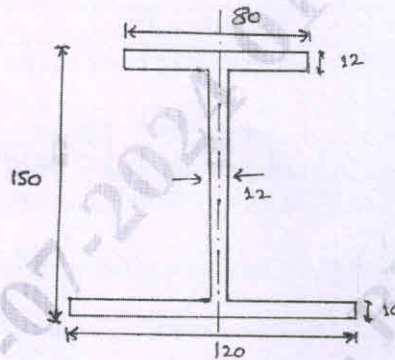
Fig.Q.7(c)

OR					
Q.8	a.	Derive the expression for the moment of inertia of a triangular section about its base. Hence, arrive at the expression about its parallel centroidal axis.	6	L3	CO4
	b.	Define and give the mathematical expressions for : i) Moment of inertia ii) Radius of gyration.	4	L2	CO4
	c.	Locate the centroid of the shaded lamina shown in the Fig.Q.8(c). Given that the centroid of the circle and the shaded lamina coinside.	10	L3	CO4
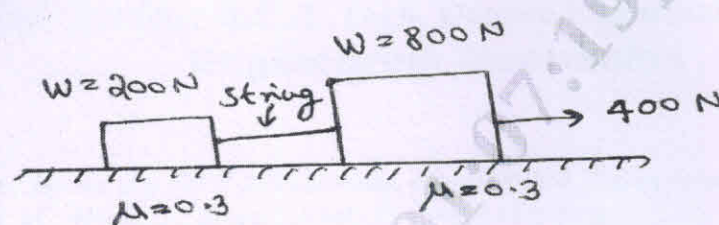
Fig.Q.8(c)

Module – 5					
Q.9	a.	Derive the three fundamental equations of linear motion.	6	L2	CO1
	b.	Determine the least initial velocity with which a projectile is to be projected so that it clears a wall 4m height located at a distance of 5m, and strikes the horizontal plane through the foot of the wall at a distance 4m beyond the wall. The point of projection is at the same level as the foot of the wall.	6	L3	CO5

	c.	Compute the acceleration of the system and the tension in the string shown in the Fig.Q.9(c). Adopt D'Alembert's principle.	8	L3	CO5

Fig.Q.9(c)

		OR			
Q.10	a.	State and explain D'Alembert's principle. Give an example.	6	L2	CO5
	b.	A ball is thrown vertically upwards with an initial velocity of 36m/s. After 2 seconds, another ball is thrown vertically upwards. What should be its initial velocity so that it crosses first ball at a height of 30m?	8	L3	CO5
	c.	A projectile is aimed at a target on the horizontal plane and falls 12m short when the angle of projection is 15°, while it overshots by 24m when the angle is 45°. Determine the angle of projection to hit the target.	6	L3	CO5

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BEMEM103/203

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2024
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. M : Marks , L: Bloom's level , C: Course outcomes.
3. Use of thermodynamic data handbook is permitted.

		Module – 1	M	L	C
Q.1	a.	Discuss the Emerging trends in manufacturing and automotive sector.	8	L2	CO1
	b.	With neat sketch, explain the working of thermal power plant.	6	L2	CO1
	c.	Discuss the difference between renewable and non-renewable energy sources.	6	L2	CO1
		OR			
Q.2	a.	Explain the formation of steam at constant pressure with suitable sketches.	8	L2	CO1
	b.	Define the following terms with respect to steam : (i) Sensible heat (ii) Latent heat (iii) Internal energy	6	L1	CO1
	c.	Find the specific volume and enthalpy of 1 kg of steam at 0.8 MPa, with $T_S = 170.4°C$, $V_S = 0.2403$ m^3/K, $h_f = 720.94$ kJ/kg, $h_{fg} = 2046.5$ kJ/kg : (i) When the dryness fraction is 0.9 (ii) When the steam is super heated to temperature of 300°C. The specific heat of superheated steam is 2.25 kJ/kgK.	6	L3	CO4
		Module – 2			
Q.3	a.	With neat sketch, explain taper turning by swiveling of compound rest method.	8	L2	CO2
	b.	Explain the following operations performed on drilling machine with neat sketch : (i) Reaming (ii) Tapping (iii) Counter boring	6	L2	CO2
	c.	Discuss plane milling, end milling and slot milling operation performed on milling machine.	6	L2	CO2
		OR			
Q.4	a.	Define 3D printing also explain the steps involved in 3D printing with a flow chart.	7	L1	CO2
	b.	Discuss the components of CNC machine with a neat sketch.	7	L2	CO2
	c.	Discuss the advantages of CNC machine also write any three applications of 3D printing.	6	L2	CO2

Module – 3				
Q.5	**a.**	With neat sketch, explain the parts of IC engine.	7	L2	CO2
	b.	Explain the working of 4-stroke petrol engine with neat sketch.	8	L2	CO2
	c.	A gas engine working on four-stroke cycle has a cylinder of 250 mm diameter, length of stroke 450 mm and is running at 180 rpm. Its mechanical efficiency is 80% when the mean effective pressure is 0.65 MPa. Find (i) Indicated power (ii) Brake power (iii) Friction power.	5	L3	CO4
OR				
Q.6	**a.**	With neat sketch, explain the working of room air condition.	7	L2	CO2
	b.	Discuss the properties of good refrigerant.	6	L2	CO2
	c.	Explain with neat sketch, the working of Vapour Compression Refrigerator (VCR).	7	L2	CO2
Module – 4				
Q.7	**a.**	With a neat sketch, derive an expression for velocity ratio in Compound Gear Train.	8	L3	CO3
	b.	Discuss Open and Cross belt driver.	6	L2	CO3
	c.	The velocity ratio of a belt drive is 3 : 2. If the diameter of the driven pulley is 120 cm, which runs at 180 rpm. Find the diameter and speed of the driver pulley and linear velocity of the belt.	6	L3	CO3
OR				
Q.8	**a.**	With neat sketch discuss different types of flames in oxy-acetylene gas welding, also state application of each flame.	8	L2	CO3
	b.	Explain TIG welding process.	6	L2	CO3
	c.	Differentiate between Welding, Soldering and Brazing.	6	L1	CO3
Module – 5				
Q.9	**a.**	With neat sketch, explain the parts of electric vehicles.	8	L2	CO3
	b.	State the advantages and disadvantages of hybrid vehicles.	6	L2	CO3
	c.	Write the difference between electric and hybrid vehicles.	6	L1	CO3
OR				
Q.10	**a.**	List different types of Robots configuration and discuss any two configuration in detail with sketch.	8	L2	CO3
	b.	Explain open and closed loop mechatronic system with an example for each.	6	L2	CO3
	c.	Explain the elements of a Robotic system with neat sketch.	6	L2	CO3

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BPHYE102/202

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Applied Physics for EEE Stream

Time: 3 hrs.

Max. Marks: 100

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

		Module – 1	M	L	C
Q.1	a.	State de Broglie hypothesis and set up one – dimensional time independent Schrodinger Wave equation.	9	L2	CO1
	b.	Define a Wavepacket and explain the terms Phase velocity and Group velocity and mention their expressions.	6	L2	CO1
	c.	In measurement of position and momentum that involved an uncertainty of 0.003%, the speed of an electron was found to be $800 ms^{-1}$. Calculate the corresponding uncertainty that arises in determining its position.	5	L3	CO1
		OR			
Q.2	a.	Using the time independent Schrodinger wave equation, obtain the expression for the normalized wave function for a particle in one dimensional potential well of infinite height.	9	L2	CO1
	b.	Using uncertainty principle, show that an electron cannot exist within the nucleus of an atom.	6	L2	CO1
	c.	An electron is bound in an one dimensional potential well of width $1 A°$, but of infinite wall height. Find its energy values in the ground and in the first two excited states.	5	L3	CO1
		Module – 2			
Q.3	a.	Define Fermi energy and Fermi factor. Discuss the variation of Fermi factor with temperature and energy.	9	L2	CO2
	b.	Define Dielectric polarization and describe the different polarization mechanisms.	7	L2	CO2
	c.	Calculate the probability of an electron occupying an energy level 0.02eV above Fermi level at 200K in a material.	4	L3	CO2
		OR			
Q.4	a.	Derive Clausius – Mossotti equation.	6	L2	CO2
	b.	Explain BCS theory of Superconductivity. Write a short note on Maglev vehicles.	9	L2	CO2
	c.	An elemental solid dielectric material has polarizability 7×10^{-40} Fm^2. Assuming the internal field to be Lorentz field, calculate the dielectric constant for the material if the material has 3×10^{28} atoms/m^3.	5	L3	CO2

		Module – 3			
Q.5	a.	Define Induced absorption , Spontaneous emission and Stimulated emission. Obtain an expression for energy density of radiation under equilibrium condition in terms of Einstein's co-efficient.	10	L2	CO1
	b.	Explain different types attenuations in optical fibers.	6	L2	CO1
	c.	A medium in thermal equilibrium at temperature 300K has two energy levels with a wavelength separation of 1μm. Find the ratio of population densities of the upper and lower levels.	4	L3	CO1
		OR			
Q.6	a.	Describe the construction and working of carbon dioxide laser.	8	L2	CO1
	b.	With neat diagram, derive and expression for numerical aperture of an optical fiber and arrive at the condition for propagation.	7	L2	CO1
	c.	An optical fiber has a core material with refractive index 1.55 and its cladding material has a refractive index of 1.50. The light is launched into it in air. Calculate its numerical aperture, the acceptance angle and also the fractional index change.	5	L3	CO1
		Module – 4			
Q.7	a.	Describe the vector operator ∇ and explain the concepts of gradient, divergence and curl.	7	L2	CO3
	b.	Explain the Gauss's law in electrostatics and magnetism. Express the same in their differential forms.	8	L2	CO3
	c.	Given $\vec{A} = (3x^2 + y + az)\,\hat{a}_x + (bx - 5y^3 - 2z)\,\hat{a}_y + (2x + cy + 3z^2)\,\hat{a}_z$. For what values of a, b, and c the vector $\vec{A}$ is irrotational?	5	L3	CO3
		OR			
Q.8	a.	Derive Gauss's divergence theorem and also mention the Stoke's theorem.	7	L2	CO3
	b.	Derive the electromagnetic wave equation using Maxwell's equation in free space.	8	L2	CO3
	c.	Determine the constant C such that, the vector $\vec{A} = (x + ay)\,\hat{a}_x + (y + bz)\,\hat{a}_y + (x + cz)\,\hat{a}_z$ is Solenoidal.	5	L3	CO3
		Module – 5			
Q.9	a.	Show that the Fermi level lies in the middle of the energy gap for an intrinsic semiconductor.	6	L2	CO4
	b.	What is Hall effect? Obtain the expression for Hall voltage in terms of Hall co-efficient.	9	L2	CO4

	c.	In a diffraction grating experiment, the laser light undergoes third order diffraction with diffraction angle of 11.7°. The grating constant is 10^{-5}m and the distance between the grating and laser source is 1m, find the wavelength of laser light?	5	L3	CO5
		OR			
Q.10	a.	Obtain the expression for electrical conductivity ion extrinsic and intrinsic semiconductors.	7	L2	CO4
	b.	Describe with energy band diagram, the construction and working of a semiconductor diode laser.	8	L2	CO4
	c.	Determine the resonance frequency of an LCR series circuit with inductance = 0.5 henry , Capacitance = 0.45 , Microfarad and resistance = 300Ω.	5	L3	CO5

COs and Pos Mapping

COs	POs											
	1	2	3	4	5	6	7	8	9	10	11	12
CO1	3	2	-	-	-	-	-	-	-	-	-	2
CO2	3	2	-	-	-	-	-	-	-	-	-	2
CO3	3	2	-	-	-	-	-	-	-	-	-	2
CO4	3	2	-	-	1	-	-	-	-	-	-	2
CO5	3	2	1	-	2	-	-	3	3	-	-	2

Note : Level – 3 : Highly Mapped , Level – 2 : Moderately Mapped , Level – 1 : Low Mapped.

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CBCS SCHEME

USN | | | | | | | | | | BPHYS102/202

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2024
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. M : Marks , L: Bloom's level , C: Course outcomes.
3. VTU Hand book is permitted.

		Module – 1	M	L	C
Q.1	a.	Explain the construction and working of semiconductor LASER with a neat sketch and energy level diagram.	9	L2	CO1
	b.	Discuss different types of optical fibers based on modes of propagation and RI profile.	6	L2	CO1
	c.	An optical fiber has refractive index of core and cladding of 1.55 and 1.50, respectively. Calculate its numerical aperture and angle of acceptance if it is kept in air.	5	L3	CO5
		OR			
Q.2	a.	Obtain the expression for energy density of radiation in term of Einstein's A and B coefficients.	8	L2	CO1
	b.	Define numerical aperture and derive an expression for numerical aperture of an optical fiber.	7	L2	CO1
	c.	In a diffraction grating experiment the Laser light undergoes first order diffraction at an angle of 19.3°. Find the wavelength of Laser light. Given the grating constant $d = 1.98 \times 10^{-6}$m.	5	L3	CO5
		Module – 2			
Q.3	a.	Setup one dimensional time independent Schrodinger wave equation.	8	L2	CO
	b.	State Heisenberg's uncertainty principle and apply the same to prove the non-existence of free electron inside the nucleus.	7	L2	CO
	c.	An electron is bound in an infinite potential well of width 0.18nm. Find its energy values in the first two allowed energy states.	5	L3	CO2
		OR			
Q.4	a.	Obtain an expression for Eigen function and Eigen energy values for a particle in an infinite potential well of width 'a'.	9	L2	CO2
	b.	What is wave function? Mention the properties of wave function and give its significance.	6	L2	CO2
	c.	Calculate the kinetic energy of a neutron in eV. Given: de –Broglie wave length is 1 Å and mass of neutron, $m_n = 1.674 \times 10^{-27}$Kg.	5	L3	CO2
		Module – 3			
Q.5	a.	Distinguish between classical computing and Quantum computing.	6	L2	CO2
	b.	Explain the CNOT gate and its operation on four different input states.	6	L2	CO2
	c.	Apply Pauli matrices on the state $|0>$ and $|1>$.	8	L3	CO2
		OR			
Q.6	a.	Explain the working of T-gate mentioning its matrix representation and truth table.	7	L2	CO2
	b.	Explain Orthogonality and Orthonormality with an example of each.	8	L2	CO2

	c.	A linear operator 'X' operates such that X|0> = |0> and X|1> = i|1>. Find the matrix representation of 'X'.	5	L3	CO2
		Module – 4			
Q.7	a.	Mention the failures of classical free electron theory and explain the assumptions of Quantum free electron theory of metals.	7	L2	CO3
	b.	Explain Meissner's effect and the variation of critical field with temperature.	8	L2	CO3
	c.	A lead wire has a critical field of 6.5×10^3 A/m at 0 Kelvin. The critical temperature is 7.18K. At what temperature the critical field will drop to 4.5×10^3 A/m.	5	L3	CO3
		OR			
Q.8	a.	Define Fermi factor and explain the variation of Fermi factor with temperature and energy.	8	L2	CO3
	b.	Differentiate Type – I and Type – II superconductors.	8	L2	CO3
	c.	Calculate the probability of occupation of an energy level 0.02eV above level at temperature 27°C.	4	L3	CO3
		Module – 5			
Q.9	a.	Explain the importance of (i) size and scale and (ii) weight and strength, in animation.	7	L2	CO4
	b.	Mention the general pattern of Monte – Carlo method and hence explain the procedure to find the value of 'π'.	8	L2	CO4
	c.	In the case of animating a jump, the jump height is 2.5m and jump magnification is 5. Calculate the push height and push acceleration. Given gravitational acceleration is 10m/s.	5	L3	CO5
		OR			
Q.10	a.	Describe jumping and parts of jump.	9	L2	CO4
	b.	Distinguish between descriptive and inferential statics.	6	L2	CO4
	c.	On a particular place, volcanic eruption occurs once in every 100years on an average. Calculate the probability of volcanic eruption in a 100 years interval for K = 0, 1 and 2, assuming the Poisson's model appropriate.	5	L3	CO5

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CBCS SCHEME

BPHYC102/202

First/Second Semester B.E./B.Tech. Degree Examination, June/July2024
Applied Physics 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.	Define SHM. Derive the expressions for equivalent force constant for two springs in series combination.	7	L2	CO1
	b.	What are damped oscillations? Give the theory of damped vibrations? Discuss the case of underdamping.	8	L2	CO1
	c.	Calculate the resonance frequency for a simple pendulum of length 1m.	5	L3	CO5
		OR			
Q.2	a.	Explain the construction and working of Reddy shock tube with the help of neat sketch.	7	L2	CO1
	b.	Explain various forces acting on a system under forced vibration and discuss the three cases.	8	L2	CO1
	c.	An object travels a distance of 2km in 4s. Given the speed of sound in air 340m/s. Calculate the Mach No.	5	L3	CO1
		Module – 2			
Q.3	a.	Discuss the brittle and ductile fractures.	6	L2	CO1
	b.	Define bending moment and derive an expression for bending moment with the help of neat sketch.	9	L2	CO1
	c.	Calculate the extension produced in a wire of length 2m and radius 0.013×10^{-2}m due to a force of 14.7 Newton applied along its length. Given, Young's modulus of the material of the wire, $Y = 2.1 \times 10^{11}$N/m^2.	5	L3	CO5
		OR			
Q.4	a.	Define a beam and classify the types of beams.	6	L2	CO1
	b.	Definition, a brief discussion on factors affecting fatigue such as surface effect, design effect and environmental effects.	9	L2	CO1
	c.	Calculate the force required to produce an extension of 1mm in steel wire of length 2m and diameter 1mm. ($Y = 2X, 10^{11}$N/m^2).	5	L3	CO5

Module – 3					
Q.5	a.	Define photometry and explain photometric quantities.	10	L2	CO2
	b.	Elucidate the impact of noise in multi-storied buildings.	5	L2	CO2
	c.	For an empty assembly hall of size $20 \times 15 \times 10$ cubic meter with absorption coefficient 0.106. Calculate reverberation time.	5	L3	CO2
OR					
Q.6	a.	Define reverberation and reverberation time and hence derive sabines formula.	10	L2	CO2
	b.	Mention the conditions for good acoustics.	5	L2	CO2
	c.	Define the five spectral quantities.	5	L3	CO2
Module – 4					
Q.7	a.	Discuss the interaction of radiation with matter and hence explain laser action.	8	L2	CO3
	b.	Explain propagation of light through optical fiber and hence derive an expression for numerical aperture and angle of acceptance.	7	L2	CO3
	c.	Calculate the numerical aperture and acceptance angle for an optical fiber of RI of core 1.5 and RI of cladding 1.48 placed in water of RI 1.33.	5	L3	CO5
OR					
Q.8	a.	Enumerate the requisites of a laser system and describe the construction and working of semiconductor laser with a neat sketch and energy level diagram.	9	L2	CO3
	b.	Define attenuation in fiber with the expression for attenuation coefficient and describe the various fiber losses.	6	L2	CO3
	c.	Calculate the number of photons emitted per second for a laser with power output 10mW, given the wave length of fiber 690 nanometer.	5	L3	CO5
Module – 5					
Q.9	a.	Discuss the classification of earthquakes.	9	L2	CO4
	b.	Enumerate the causes and adverse effect of Tsunami waves.	6	L2	CO4
	c.	Calculate the intensity of earthquake of magnitude 6.5 assuming the base intensity as I_o.	5	L3	CO4
OR					
Q.10	a.	Discuss the landslides and describe the causes for landslides.	8	L2	CO4
	b.	Discuss the engineering structures to withstand earthquakes and Tsunami waves.	7	L2	CO4
	c.	The intensity of one earthquake is 100 times the intensity of the other. If the magnitude of the first earthquake is 8.9, estimate the magnitude of the other.	5	L3	CO4

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BCHEC102/202

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Applied Chemistry 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.	Describe the manufacturing of cement by wet method.	7	L2	CO1
	b.	What are refractories? Mention the properties and applications of refractory materials.	7	L2	CO1
	c.	Mention the properties and applications of Aluminium and its alloys.	6	L2	CO1
		OR			
Q.2	a.	Describe the preparation of Soda-lime glass.	7	L2	CO1
	b.	Explain the testing of cement by EDTA method.	7	L2	CO1
	c.	Mention the properties and applications of Iron and its alloys.	6	L2	CO1
		Module – 2			
Q.3	a.	Explain construction, working and applications of methanol-oxygen fuel cell.	7	L2	CO2
	b.	Explain electrochemical corrosion of steel in concrete.	7	L2	CO2
	c.	Explain construction and working of Li-ion battery.	6	L2	CO2
		OR			
Q.4	a.	Discuss the following types of corrosion: (i) Differential metal corrosion. (ii) Differential aeration corrosion.	7	L2	CO2
	b.	Describe the following corrosion control methods : (i) Galvanization (ii) Sacrificial anode method.	7	L2	CO2
	c.	Explain construction, working and applications of photovoltaic cells.	6	L2	CO2
		Module – 3			
Q.5	a.	Explain softening of water by Ion exchange method.	7	L2	CO3
	b.	Define nanomaterials. Explain the synthesis of nanomaterials by Sol-gel method.	7	L2	CO3
	c.	In a COD test, 28.1 cm^3 and 14 cm^3 of 0.05 N FAS solutions were required for blank and sample titrations respectively. The volume of sample used is 25 cm^3. Find the COD of the sample solution.	6	L3	CO3
		OR			
Q.6	a.	50 ml of hard water sample is titrated with 0.015 M EDTA solution consumes 12 ml EDTA during titration. Now 250 ml of same hard water is boiled to 50 ml, filtered and diluted to 250 ml with distilled water. When 50 ml of boiled water titrated with 0.015 m EDTA, it consumes 8 ml EDTA during titration. Calculate temporary, permanent and total hardness of given water sample.	7	L3	CO3

	b.	Explain desalination of water by Electrodialysis method.	7	L2	CO3
	c.	What are carbon nano tubes? Mention the properties and applications of carbon nanotubes.	6	L2	CO3

Module – 4					
Q.7	a.	What is Geo polymer concrete? Mention the properties and applications of Geo polymer concrete.	7	L2	CO4
	b.	A polymer sample contain 5 molecules having molecular weight 2000 g/mol, 4 molecules having molecular weight 3000 g/mol and 3 molecules having molecular weight 4000 g/mol. Calculate the number average and weight average molecular mass of the polymer.	7	L3	CO4
	c.	Explain synthesis, properties and applications of nylon fibers.	6	L2	CO4

OR					
Q.8	a.	Define biodegradable polymers. Explain synthesis and applications of polylactic acid.	7	L2	CO4
	b.	Explain the properties and applications of fiber reinforced polymer composites.	7	L2	CO4
	c.	Describe synthesis properties and applications of epoxy resin.	6	L2	CO4

Module – 5					
Q.9	a.	What is phase rule? Explain the terms involved in it with example.	7	L2	CO5
	b.	Explain the estimation of acid mixture using conductometric sensor.	7	L2	CO5
	c.	Explain the principle of pH sensor and describe the determination of pH of soil sample using pH sensor.	6	L2	CO5

OR					
Q.10	a.	With the help of neat phase diagram, describe the lead-silver system.	7	L2	CO5
	b.	Describe the construction and working of pH sensor.	7	L2	CO4
	c.	Explain the estimation of Iron in FAS using potentiometric sensors.	6	L3	CO4

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CBCS SCHEME

BCHES102/202

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2024
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 electrochemical sensors? Explain the principle and working of electrochemical sensor.	07	L1	CO1
	b.	Explain the principle, working and any two applications of optical sensor.	06	L1	CO1
	c.	What is Quantum Dot sensitized solar cell? Explain the construction and working of Quantum Dot sensitized solar cell.	07	L1	CO1
		OR			
Q.2	a.	Explain the detection of bio-molecule ascorbic acid using disposable sensor and also write the electro oxidation reaction.	07	L1	CO1
	b.	Explain the working principle of electrochemical gas sensors for the detection of SO_x and NO_x.	06	L1	CO1
	c.	Explain the construction and working of Li-ion battery. Mention any two applications.	07	L1	CO1
		Module – 2			
Q.3	a.	What are memory devices? Explain the classification of electronic memory devices.	07	L2	CO2
	b.	Define optoelectronic device. Explain the working principle of optoelectronic device.	06	L2	CO2
	c.	What are liquid crystals? Explain the classification of liquid crystals.	07	L2	CO2
		OR			
Q.4	a.	Explain the types of organic memory devices by talking p-type and n-type semiconducting materials.	07	L2	CO2
	b.	Explain any three properties and applications of polythiophene (P3HT) suitable for optoelectronic devices.	06	L2	CO2
	c.	What is QLED? Mention any three properties and applications of QLED.	07	L2	CO2
		Module – 3			
Q.5	a.	Define metallic corrosion. Explain electrochemical theory of corrosion.	07	L3	CO3
	b.	A thick steel sheet of area 400 inch^2 is exposed to moist air. After 2 years of period, it was found to experience a weight lost of 375g due to corrosion if the density of steel is 7.9 g/cm^3, calculate CPR in mpy and mmpy.	06	L1	CO3
	c.	What are reference electrodes? Explain the construction, working and applications of calomel electrode.	07	L1	CO3
		OR			
Q.6	a.	What is galvanization? Explain galvanization of Iron. Mention its applications.	07	L1	CO3
	b.	What are concentration cells? Calculate the cell potential of the following cell at 298 K. Ag | AgNO₃(0.005M) || AgNO₃ (0.5M) | Ag	06	L1	CO3
	c.	Explain the principle and instruction of conductometry taking estimation of weak acid using a strong base as an example.	07	L2	CO3

		Module – 4			
Q.7	a.	In a sample of a polymer 20% molecules have molecular mass 15,000g/mol, 35% molecules have molecular mass 20000g/mol. Calculate the number average and weight average molecular mass of the polymer.	07	L3	CO4
	b.	Explain the preparation of Kevlar. Mention any four applications.	06	L2	CO4
	c.	Explain the generation of hydrogen by Alkaline water electrolysis with a neat labelled diagram.	07	L2	CO4
		OR			
Q.8	a.	What are conducting polymers? Explain the conduction mechanism in polyacetylene through oxidative doping technique. Mention any two applications.	07	L3	CO4
	b.	What arc PV cells? Explain the construction and working of photovoltaic cell.	06	L2	CO4
	c.	Explain the generation of hydrogen by proton exchange membrane electrolysis.	07	L2	CO4
		Module – 5			
Q.9	a.	Define E-waste. Explain the sources and composition of E-waste.	07	L2	CO5
	b.	Explain the ill effects of materials used in manufacturing electrical and electronic products.	06	L2	CO5
	c.	Explain pyrometallurgical process of extraction of E-waste.	07	L2	CO5
		OR			
Q.10	a.	Explain the extraction of gold from E-waste.	07	L2	CO5
	b.	Explain direct recycling of E-waste.	06	L2	CO5
	c.	Write a brief note on role of stakeholders for example, producers consumers, recyclers and statutory bodies in management of E-waste.	07	L2	CO5

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BCHEM102/202

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Applied Chemistry for ME Stream

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.
3. VTU Formula Hand Book is permitted.

		Module – 1	M	L	C
Q.1	a.	Define Calorific value. Explain about the determination of Calorific value of fuel using Bomb calorimeter.	7	L2	CO1
	b.	Calculate GCV and NCV of a fuel from the following data : Mass of fuel = 0.75g , W = 350g , t = 3.02°C , Mass of water = 1150 and % H_2 = 2.8.	7	L3	CO1
	c.	Explain the construction and working of Lithium in Battery along with its applications.	6	L2	CO1
		OR			
Q.2	a.	Explain the production of Hydrogen by Electrolysis method and mention its advantages.	6	L2	CO1
	b.	Explain Construction , Working of Photovoltaic cell along with its advantages.	7	L2	CO1
	c.	What are the principles of Green Chemistry? What is Power Alcohol? Explain in brief.	7	L2	CO1
		Module – 2			
Q.3	a.	Explain the Electrochemical theory of corrosion in detail taking Iron as an example.	7	L2	CO2
	b.	Explain i) Differential Metal corrosion. ii) Differential Aeration corrosion.	6	L3	CO2
	c.	Describe Galvanizing and mention its application.	7	L2	CO2
		OR			
Q.4	a.	What is Sacrificial Anodic Protection? Explain.	6	L2	CO2
	b.	What is Metal Finishing? Mention any five of its Technological importance.	7	L2	CO2
	c.	Distinguish between Electro plating and Electro less plating. Explain Electro plating of Chromium (Decorative).	7	L3	CO2
		Module – 3			
Q.5	a.	What are Polymers? Explain the different methods of Polymerization.	7	L3	CO3

	b.	Explain the synthesis of CPVC and mention its applications (CPVC – Chlorinated Polyvinyl Chloride).	6	L2	CO3
	c.	Explain the synthesis , properties and industrial application of Kevlar Fiber.	7	L2	CO3
		OR			
Q.6	a.	Explain the synthesis of Polysterene and mention its applications.	7	L2	CO3
	b.	Describe the properties and applications of Lubricants.	6	L2	CO3
	c.	What are Composites? Explain the properties and application of Carbon – based Reinforced composites (Graphene / Carbon nanotube).	7	L2	CO3
		Module – 4			
Q.7	a.	Define Phase , Components and Degree of Freedom and Phase rule equation.	6	L2	CO4
	b.	Explain the Principle , Instrumentation and Application of Colorimetry.	7	L2	CO4
	c.	Explain the Principle , Instrumentation and Working of Glass Electrode.	7	L2	CO4
		OR			
Q.8	a.	Explain along with diagram Lead – Silver Two Components system.	7	L2	CO4
	b.	Explain the Principle , Instrumentation and Application of Potentiometry sensor.	7	L2	CO4
	c.	Explain the process of estimation of Copper in Industrial water by using Optical sensor.	6	L2	CO4
		Module – 5			
Q.9	a.	What are Alloys? Explain the composition along with properties of AℓNiCo.	6	L3	CO5
	b.	Explain the synthesis of Nanomaterials by Sol – Gel method.	7	L2	CO5
	c.	Explain the Chemical composition , Properties and Application of Pervoskites.	7	L2	CO5
		OR			
Q.10	a.	Explain the composites along with properties of Brass and Stainless steel.	6	L3	CO5
	b.	Explain the size dependent properties of Nano materials and with respect to Catalytic , Thermal and Surface area.	7	L2	CO5
	c.	Explain the properties of application of Carbon Nano tunes and Graphene.	7	L2	CO5

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USN | | | | | | | | | | BCHEE102/202

First/Second Semester B.E/B.Tech. Degree Examination, June/July 2024
Chemistry for EEE Stream

Time: 3 hrs.　　　　　　　　　　　　　　　　　　　　　　　Max. Marks:100

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

		Module – 1	M	L	C
1	a.	Explain classification of materials as conductors, insulators and semiconductors with the help of band theory.	7	L2	CO1
	b.	Explain the preparation, properties and commercial applications for grapheme oxide.	7	L2	CO1
	c.	Describe the purification of electronic grade silicon from quartz by float zone method.	6	L2	CO1
		OR			
2	a.	What are conducting polymers? Explain the mechanism of conduction in polyethylene.	7	L2	CO1
	b.	What is electroless plating? Describe the electroless plating of copper in the manufacture of double-sided PCB.	7	L2	CO1
	c.	A polymer has the following composition 100 molecules of molecular mass 1000 g/mol, 200 molecules of molecular mass 2000g/mol, and 500 molecules of molecular mass 5000g/mol. Calculate the number and weight average molecular weight.	6	L3	CO1
		Module – 2			
3	a.	What are Batteries? Explain the classification of batteries with suitable examples.	6	L2	CO2
	b.	Explain the construction and working of sodium-ion battery. Mention its applications.	7	L2	CO2
	c.	Explain the construction and working of vanadium flow battery. Mention its applications.	7	L2	CO2
		OR			
4	a.	What are photovoltaic cells? Describe the construction and working of a PV cell. Mention its advantages and disadvantages.	7	L2	CO2
	b.	What are fuel cells? Explain the construction and working of methanol – oxygen fuel cell.	6	L2	CO2
	c.	Explain the construction and working of lithium – polymer battery. Mention its application.	7	L2	CO2
		Module – 3			
5	a.	Define corrosion? Explain the electro chemical theory of corrosion taking iron as an example.	7	L2	CO3
	b.	Explain the differentiate metal differential aeration corrosion with an example.	7	L2	CO3
	c.	Calculate the CPR in both MPY and MMPY for a thick steel sheet of area 100 inch^2 which experience a weight loss of 485g after one year. (Density of steel = 7.9g/cm^3).	6	L3	CO3

		OR			
6	a.	What is anodizing? Explain anodizing of aluminium. Mention its application.	7	L2	CO3
	b.	Write a note on : i) Galvanizing ii) Sacrificial anode method.	7	L2	CO3
	c.	What is e-waste? Describe the effects of e-waste on environment and human health.	6	L2	CO3
		Module – 4			
7	a.	Describe the synthesis of nano-materials by sol-gel method with example.	7	L2	CO4
	b.	Write a note on nanofibers and nanosensors.	7	L2	CO4
	c.	What are QLED? Mention its properties along with their applications.	6	L2	CO4
		OR			
8	a.	Describe the synthesis of nano-materials by co-precipitation method with an example.	7	L2	CO4
	b.	What are nano-materials? Explain any two size dependent properties of nano-materials.	7	L2	CO4
	c.	What are OLED's? Mention its properties and applications.	6	L2	CO4
		Module – 5			
9	a.	What are reference electrodes? Explain the construction and working of calomel electrode.	7	L2	CO3
	b.	Explain the working principle and applications of conductometric sensor.	7	L3	CO3
	c.	What are concentration cells? A concentration cell is constructed by immersing two iron electrodes in 0.01m and 0.1m Fe SO_4 solution represent the cell and calculate EMF of the cell at 298K.	6	L3	CO3
		OR			
10	a.	What are ion-selective electrodes? Explain the construction and working principle of glass electrode.	7	L2	CO5
	b.	Explain the working principle and applications of colorimetric sensor.	7	L3	CO5
	c.	Explain how the P^H of the given solution is determined using glass electrode.	6	L2	CO5

* * * * *

USN ☐☐☐☐☐☐☐☐☐☐

| Question Paper Version : B |

First/Second Semester B.E./B.Tech./B.Design Degree Examination, June/July 2024
Communicative English
(COMMON TO ALL BRANCHES)

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.

Complete the following sentences by using the correct question tag :
[Q.No. 1 to Q.No. 5]

1. Now you can make question tags _____?
   a) can you   b) won't you   c) can't you   d) will you

2. Few people know that you are an artist _____?
   a) do they   b) don't they   c) aren't they   d) haven't they

3. You are a bit late today _____?
   a) don't you   b) aren't you   c) are you   d) do you

4. We are learning English Grammar _____?
   a) are we   b) shall we   c) aren't we   d) shan't we

5. He was asleep _____?
   a) was he   b) wasn't he   c) didn't he   d) did he

Fill in the blank with the right prefix or suffix [Q.No. 6 to Q.No. 10].

6. She was acting very _____ during the performance.
   a) dislike   b) unhappiness   c) unlikely   d) unhappy

7. The magician's tricks were truly _____?
   a) likeable   b) dislike   c) impossible   d) carefully

8. The puppy showed great _____ when learning new things.
   a) careful   b) interest   c) unhappiness   d) interest

9. Sarah decided to _____ her wardrobe by adding some new accessories.
   a) unlikely   b) careful   c) enhance   d) dislike

10. The Scientist conducted a series of _____ experiments to test the hypothesis.
    a) unlikely   b) careful   c) unprecedented d) dislike

Choose the appropriate form of the verb : [Q.No. 11 to Q.No. 15].

11. Every thing _____ find when its done correctly.
    a) works   b) working   c) worked   d) doesn't work

12. None of them _____ able to solve this question.
    a) where   b) was   c) were   d) wear

13. A pair of trousers _____ all that I brought along.
    a) is   b) was   c) were   d) where

14. The wind _____ furiously.
    a) Blue   b) blew   c) blow   d) blown

15. He _____ to his mother every week.
    a) right   b) wrote   c) writes   d) write

Choose the right preposition [Q.No. 16 to Q.No 20].

16. Could you put your idea _____ paper?
    a) at   b) on   c) with   d) from

17. Do not waste time _____ regret?
    a) with   b) at   c) on   d) above

18. He is very simple _____ heart.
    a) on   b) under   c) at   d) for

19. She was blind _____ the age of ten.
    a) by   b) a   c) over   d) at

20. The shops are _____ walking distance.
    a) with in   b) with   c) by   d) on

21. Develop _____
    a) ccvcvcc   b) cvcvcvc   c) cvcvcvcv   d) vccvccv

22. Principal _____
    a) ccv cv vcc cv b) ccvc cv cv c c) cvc cvcc   d) cvc cvc

23. Mathematics _____
    a) cvc vcvcvcc   b) cvc cv cv cv cvvc   c) cvcvcvcvcc   d) cvccv

24. Window _____
    a) cvccvc   b) cvccv   c) cvcvc   d) cvccv

Ver – B – 2 of 4

25. Degree _____
    a) cvccv   b) cvccvc   c) cvccvvc   d) cvccvcv

Choose the correct option from those given in each of the sentences below :
[Q.No. 26 to Q.No. 30].

26. Communication is a _____ process of understanding between two or more persons.
    a) One - way   b) Three - way   c) Two - way   d) No - way

27. Total number of sounds in English language is _____
    a) 8   b) 20   c) 12   d) 44

28. The direction in which the formal communication flow is always _____
    a) Upwards   b) Downwards   c) Horizontal way   d) All of these

29. Which one of the following cannot become a type of written communication _____
    a) Picture and Visual   b) Rules and Instructions
    c) Meeting and Conference   d) Letter and Suggestion

30. Which of the following is/are not included in the tools of Verbal Communication _____
    a) Graphics   b) Writing   c) Reading   d) Listening

Choose the correct word / Phrase / Number. [Q.No. 31 to Q.No. 35].

31. One Vowel in a word usually make _____ sound.
    a) Long sound   b) Very long sound   c) Short sound   d) Very short sound

32. Long sound usually have _____ vowels.
    a) 3   b) 2   c) 4   d) 6

33. Double 'OO' is pronounced as _____
    a) ai   b) Za   c) U   d) e

34. 'G' and 'K' are always silent before _____
    a) X   b) Z   c) N   d) S

35. STON is pronounced as _____
    a) SH   b) SCH   c) Shun   d) ai

Silent and non silent words : Select the missing or silent letter
[Q.No. 36 to Q.No. 40].

36. _____ Sychology.
    a) P   b) t   c) K   d) Z

37. _____ rong.
    a) X   b) C   c) W   d) F

38. Do you have a _____ ?
    a) doubt   b) dot   c) dout   d) dought

39. I always _____ in class.
    a) lisen   b) listen   c) lizen   d) listen

40. _____ nife.
    a) C   b) K   c) Z   d) W

Name the parts of speech which are underlined [Q.No. 41 to Q.No. 45].

41. He walked <u>around</u> the part.
    a) Noun   b) Preposition   c) Verb   d) Conjunction

42. She got a strawberry <u>ice – cream</u>.
    a) Noun   b) Verb   c) Interjection   d) Adverb

43. <u>Older</u> people have less energy.
    a) Verb   b) Adjective   c) Adverb   d) Preposition

44. I like Chips <u>and</u> Cake.
    a) Adverb   b) Noun   c) Conjunction   d) Verb

45. My sister answered <u>quietly</u>.
    a) Verb   b) Adverb   c) Noun   d) Conjunction

46. I bought _____ pair of shoes.
    a) the   b) no article   c) an   d) a

47. I saw _____ movie last night.
    a) an   b) the   c) no article   d) a

48. Did you get married after leaving _____ University.
    a) no article   b) a   c) an   d) the

49. I was at _____ railway station when you called me.
    a) an   b) the   c) a   d) no article

50. _____ Mexico is a beautiful Country.
    a) An   b) A   c) The   d) no article

* * * * *

CBCS SCHEME

USN ☐☐☐☐☐☐☐☐☐☐

Question Paper Version : A

First/Second Semester B.E./B.Tech./B.Design Degree Examination, June/July 202
Professional Writing Skills in 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.

Choose the part of the sentence that has an error :

1. If I had known (a) this yesterday (b) I will have helped him (c) no error (d)

2. Having received your letter (a) this morning, we was writing (b) to thank you for the same (c) no error (d)

3. A large number of peoples (a) have gathered (b) to greek the leader (c) no error (d)

4. Driving for five hundred kilometers in a day (a) are a tiring proposition (b) no error (c)

Directions : Fill in the blanks with suitable phrasal verbs :

5. His arrogance _____ his ruin.
   a) brought in   b) brought up
   c) brought about   d) none of these

6. Henry _____ the magazine quickly.
   a) Looked through   b) Looked up
   c) Looked in   d) None of these

Directions : Choose a suitable verb to complete the sentence :

7. One of our employees _____ retiring today.
   a) are   b) is
   c) were   d) none of these

8. Either the teacher or the student _____ to be blamed for his performance in the final exam.
   a) are
   b) is
   c) were
   d) none of these

Directions : Fill in the blanks with suitable tenses :

9. Suddenly she gave a loud scream and _____ to the ground.
   a) had fallen
   b) has fallen
   c) fell
   d) none of these

10. The room _____ but the police failed to find anything suspicious.
    a) Searched
    b) was searched
    c) had searched
    d) none of these

Directions : Do as directed :

11. Okay, see you _____ the concert.
    a) at
    b) in
    c) for
    d) none of these

12. The children were _____ at having been informed about the trip.
    a) thrilling
    b) thrills
    c) thrilled
    d) none of these

13. _____ you ever been to Kashmir?
    a) Have
    b) Did
    c) Had
    d) None of these

14. Don't narrate _____ stories, they scare me.
    a) ghastly
    b) ghostly
    c) both 'a' and 'b'
    d) none of these

15. That _____ be true. He wouldn't do something like that.
    a) wouldn't
    b) shouldn't
    c) can't
    d) none of these

Directions : Rearrange the sentence :

16. defined as a place (a) where man is passive (b) and the rest of the nature is active (c) a sanctuary may be (d)
    a) a, b, c, d
    b) d, c, a, b
    c) b, c, d, a
    d) d, a, b, c

17. are simply at a loss (a) of 500 and 1000 rupee notes (b) all the corrupt politicians and their cronics (c) after the demonetization (d)
    a) c, a, d, b
    b) b, a, c, d
    c) d, c, b, a
    d) b, c, a, d

Directions : Change the voice of the following sentences :

18. You need to clean your shoes properly.
    a) Your shoes are needed to clean properly.
    b) You are needed to clean your shoes properly
    c) Your shoes need to be cleaned properly
    d) Your shoes are needed by you to clean properly

19. James watt discovered the energy of steam.
    a) The energy of steam discovered James watt
    b) The energy of steam was discovered by James watt.
    c) James watt discovering the energy of steam
    d) James watt had been discovered energy by the steam

Directions : Convert the following sentences from Direct to Indirect speech :

20. "I am sorry", he said.
    a) He apologized that he was sorry   b) He cried that he was to be sorry
    c) He demanded that he was sorry   d) All of these

Directions : Do as directed :

21. A sentence that introduces the topic or the main idea to the readers is called.
    a) Topic sentence   b) First sentence
    c) Both 'a' and 'b'   d) None of these

22. A paragraph which is written after analyzing a situation is called,
    a) Descriptive paragraph   b) Analytical paragraph
    c) Illustrative paragraph   d) narrative paragraph

23. The important parts of an essay are :
    a) Introduction   b) Body
    c) Conclusion   d) All of these

24. _____ is a gist of any passage written in as few words as possible.
    a) Essay writing   b) Precis writing
    c) Analytical writing   d) None of these

25. Which among the following is not a feature of reports?
    a) Focuses on facts and data   b) Is written for a specific purpose
    c) Includes irrelevant information   d) Is structured in an organized way

26. Reports which are submitted at regular intervals is called,
    a) Routine report   b) Periodic report
    c) Both 'a' and 'b'   d) None of these

27. A technical report establishes a,
    a) illogical conclusion   b) logical conclusion
    c) personal prejudice   d) misplaced learning

28. _____ is drafted in response to an advertisement or demand.
    a) Solicited proposal
    b) Unsolicited proposal
    c) Both 'a' and 'b'
    d) None of these

29. Childhood is a time when there are _____ responsibilities to make life difficult. If a child _____ good parents, he is fed, looked _____ and loved.
    a) many, had, up
    b) few, has, after
    c) little, have, at
    d) all of these

30. Listening is a vital skill which helps in enhancing our learning.
    a) True
    b) False

31. Which among the following are barriers to listening?
    a) Forged attention
    b) Poor interpersonal relations
    c) Premature evaluation
    d) All of these

32. Which among the following should not be implemented for effective listening?
    a) Having an open mind
    b) Not being prejudiced
    c) Employing critical thinking
    d) Asking irrelevant questions

33. A business letter must be,
    a) written in proper format
    b) short and concise
    c) polite in tone
    d) All of these

34. The date on a business letter should appear after the salutation.
    a) True
    b) False

35. This format of the letter has the heading, dateline, complementary closure and signature right aligned.
    a) Block format
    b) Informal format
    c) Modified block format
    d) None of these

36. Which among the following is not to be mentioned in a resume?
    a) Educational qualification
    b) Work experience
    c) Strengths
    d) Weaknesses

37. The _____ format of resume lists your work history with dates, with your most recent employer and job title listed first.
    a) Historical
    b) Functional
    c) Chronological
    d) All of these

38. BCC in an email refers to :
    a) British council careers
    b) Blind carbon copy
    c) Booked carbon copy
    d) None of these

39. The cover letter is written,
    a) To introduce oneself as the suitable candidate for the job.
    b) To give biographical details of the candidate.
    c) To try for the job
    d) To let the employer know of our writing skills

40. _____ communication is a direct, written or oral communication that occurs between two or more persons
    a) Interpersonal   b) Extra-personal   c) Intrapersonal   d) None of these

41. In a group discussion one must communicate with,
    a) Hostility   b) Arrogance
    c) Long sentences   d) Knowledge

42. Which among the following should not be followed while appearing for an interview?
    a) Arriving late to the venue   b) Knowing your resume
    c) Being formally dressed   d) Knowledge of the company

43. When giving a presentation in front of an audience you should do all of the following except :
    a) Speak loud and clear   b) Provide handouts if needed
    c) Dress professionally   d) Lack of eye contact with the audience

44. A group discussion checks and monitors,
    a) Leadership skills   b) Listening ability
    c) Confidence   d) All of these

45. Communication helps to make accurate decisions and influence organizational performance positively.
    a) True   b) False

Directions : Fill in the Blanks :

46. What actually scared us _____ the fact that there was no one around to help us.
    a) were   b) was
    c) with   d) all of these

47. He was the man _____ they thought was dead.
    a) of   b) who   c) whom   d) all of these

48. The flowers smell _____.
    a) Sweet   b) Sweetly   c) Sweeter   d) Sweetest

49. The Guptas are travelling _____ plane.
    a) at   b) in   c) on   d) by

50. Which of the following sentence does not contain misplaced modifier?
    a) Tired after a long day at work, Rita napped with her cat.
    b) Happy that school was over, the afternoon was quite relaxing
    c) We glued together the vase we broke quietly
    d) My uncle had to see a doctor with indigestion

* * * * *

BKSKK107/207
Question Paper Version : A

First/Second Semester B.E/B.Tech. Degree Examination, June/July 2024

ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ

(COMMON TO ALL BRANCHES)

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

ಸೂಚನೆಗಳು

1. ಎಲ್ಲ ೫೦ ಪ್ರಶ್ನೆಗಳಿಗೂ ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ ಒಂದು ಅಂಕ.

2. ಓ.ಎಂ.ಆರ್ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ಯು.ಎಸ್.ಎನ್ ಸಂಖ್ಯೆ ಹಾಗೂ ಪಶ್ನೆ ಪತ್ರಿಕೆಯ ಶ್ರೇಣೆಯನ್ನು 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.

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1. ತಾಳಗುಪ್ಪ ಗಿರಿಜನ ಶ್ರಮ ಶಾಲೆಯ ಮಾಸ್ತರರು ಯಾರು?

   a) ಸಮಪಾಲುಗೋಪಣ್ಣ   b) ಪ್ರಹ್ಲಾದ   c) ಹುಚ್ಚಪ್ಪ   d) ಕರೀಂಖಾನ

2. ಗೋಪಣ್ಣ ಮಾಸ್ತರು ಕಣಗಲಿ ಗಿಡದಲ್ಲಿ ಏನು ನೋಡಿದರು?

   a) ಹೂ   b) ಹಣ್ಣು   c) ಬಟ್ಟೆ   d) ಜನಿವಾರ

3. ಹಾಡುವಳ್ಳಿಗೆ ಹಿಂದೆ ------ಹೆಸರಿತ್ತು.

   a) ಸಂಗೀತಪುರ   b) ಭಟ್ಕಳ   c) ಸಾಗರ   d) ಕಾರವಾರ

4. ಹೊಸಚಿಗುರು ----- ಕೂಡಿರಲು ಮರಸೊಬಗು

   a) ಹೊಸ ಎಲೆ   b) ಹೊಸ ಹಸಿರು   c) ಹೊಸಕಾಂಡ   d) ಹಳಬೇರು

5. "ಪರಿಸರ, ಪರಂಪರೆ ಹಾಗೂ ಪ್ರತ್ಯಕ್ಷ ಜೀವನದ ಅನೇಕ ಸಂಸ್ಕಾರಗಳ ಮೂಲಕ ಮನುಷ್ಯನ ಅಂತರಂಗ ಪಡೆಯುವ ಪರಿಪಕ್ವತೆ" ಯನ್ನು ------ ಎನ್ನಬಹುದು.

   a) ಕಲೆ   b) ಸಂಸ್ಕಾರ   c) ಸಂಸ್ಕೃತಿ   d) ಕೆಂಪು

6. ಕುಣಬಿ ಜನರ ಮುಖ್ಯವಾದ ಹಬ್ಬ ಯಾವುದು?

   a) ಯುಗಾದಿ   b) ದಸರಾ   c) ಹೋಳಿ ಹುಣ್ಣಿಮೆ   d) ದೀಪಾವಳಿ

7. ಬಣ್ಣಗಳನ್ನು ನೀಡುವ ಗಿಡಗಳು ಭಾರತದಲ್ಲಿ ಎಷ್ಟವೆ.

   a) 400   b) 300   c) 500   d) 600.

8. ಕರಕುಶಲ ಕಲೆಗಳಿಗೆ ಪೆಟ್ಟು ಬಿದ್ದಿದ್ದು ಯಾವುದರಿಂದ?

   a) ಜಾಗತೀಕರಣ

   c) ಕೈಗಾರಿಕರಣ

   b) ಖಾಸಗೀಕರಣ

   d) ಸೋಂಬೇರಿತನ.

9. ಸತಿ ಪದದ ಅರ್ಥವೇನು?

   a) ಹೆಂಡತಿ   b) ಪತಿ   c) ಮಕ್ಕಳು   d) ತಾಯಿ.

10. ವಿದ್ಯಾವರ್ಧಕ ಸಂಘ ಎಲ್ಲಿ ಸ್ಥಾಪನೆಯಾಯಿತು?

    a) ಬೆಂಗಳೂರು

    c) ಶಿವಮೊಗ್ಗ

    b) ಧಾರವಾಡ

    d) ಮೈಸೂರು.

11. ಕಾಲಿಗೆ ಬಿದ್ದವರ ಯಾವುದು ತುಳಿಯುತ್ತಲಿತ್ತು?

    a) ಹಣ   b) ಕಾಂಚಾನ   c) ಬಂಗಾರ   d) ಕುರುಡ ಕಾಂಚಾಣ.

12. ಭಾಷೆಗೆ ಎಷ್ಟು ಪ್ರಮುಖ ಕೌಶಲ್ಯಗಳು ಇರುತ್ತವೆ?

    a) 10   b) 20   c) 08   d) 04

13. ಆಡಳಿತ ಭಾಷೆ ಯಾವಾಗಲೂ ------ ಇರಬೇಕು.

    a) ಕಷ್ಟಕರವಾಗಿ

    c) ಸರಳ ಮತ್ತು ಸ್ಪಷ್ಟವಾಗಿ

    b) ಅರ್ಥವಾಗದಂತೆ

    d) ಗೊಂದಲದಿಂದ.

14. ಸರ್ಕಾರಿ ಆಸ್ಪತ್ರೆಯಲ್ಲಿ ಮಾಸ್ತರಿಗೆ ಸಹಾಯ ಮಾಡಿದ ದಾದಿ ಯಾರು?

    a) ಚಾಂದಿನಿ   b) ರಾಧ   c) ಫಾತಿಮಾ   d) ರುಕ್ಮಿಣಿ.

15. ------ ಭಾರತದ ಕೆಲವು ನೇಕಾರರು ಚಿಂದಿ ಬಟ್ಟೆಯ ಕಂಬಳಿಗಳನ್ನು ತಮ್ಮ ಮಗ್ಗಗಳಲ್ಲಿ ನೇಯುವರು.

    a) ಉತ್ತರ   b) ಪೂರ್ವ   c) ಪಶ್ಚಮ   d) ದಕ್ಷಿಣ.

16. ಎಲ್ಲರನು ಸಲಹುವವನು ಯಾರು?

    a) ಪುರಂದರ ವಿಠಲ

    c) ಮಲ್ಲಿಕಾರ್ಜುನ

    b) ಕಾಗಿನೆಲೆ ಆದಿಕೇಶವ

    d) ಕೂಡಲಸಂಗಮದೇವ.

17. ಶ್ರೀಮಂತರು ಯಾರ ಕಣ್ಣಿನ ಕವಡೆಯನ್ನು ಜೋಮಾಲೆ ಮಾಡಿಕೊಂಡು ಹಾಕಿಕೊಳ್ಳುವರು?

a) ಬಾಣಂತಿ   b) ಸಣ್ಣ ಕಂದಮ್ಮ   c) ಮುದುಕರು   d) ಹೆಂಗಸರು.

18. ಯಾವ ಜನಾಂಗದ ಚಿತ್ರಿಕರಣ ಲೇಖಕರ ಮನದಲ್ಲಿತ್ತು?

a) ಗೊಂಡ   b) ತೊಡವ   c) ನಾಗ   d) ಅಲೆಮಾರಿ.

19. ಕುಂಬಾರಕಿ ಯಾವುದರ ಮೇಲೆ ಮುಗಿಯನ್ನು ಇಡುವಳು?

a) ಕಲ್ಲು   b) ಗಡಿಗೆ   c) ವಸುಧೆ   d) ಕಟ್ಟೆ.

20. ವಿಷಸರ್ಪಗಳಿಗೆ ಯಾವುದರ ಗೂಡು ಹುತ್ತವಾಗುವುದು?

a) ಗೆದ್ದಲಿರುವೆ   b) ಉಡ   c) ಇಲಿ   d) ಗೀಜಗ.

21. ಎಲ್ಲರೊಳಗೆ ನಾವು ಏನಾಗಬೇರಂದು ಡ.ವಿ.ಜಿ ತಿಳಿಸಿದ್ದಾರೆ?

a) ಬೇರೆಯಾಗಬೇಕು   b) ಒಂದಾಗಬೇಕು

c) ದೂರವಾಗಬೇಕು   d) ಮಾತಾಡಬೇಕು.

22. ಕಬ್ಬಿಗರ ಕಾವ್ಯ ಇದರ ಕತೃ ಯಾರು?

a) ಪಂಪ   b) ಆಂಡಯ್ಯ   c) ಬಸವಣ್ಣ   d) ಹಂಪನಾ.

23. ಹುಲಿಗಂಜಿ ಹುತ್ತವ ಹೊಕ್ಕಡೆ ------ ತಿಂಬುದ ಮಾಬುದೆ?

a) ಸರ್ಪ   b) ಆನೆ   c) ಸಿಂಹ   d) ಚಿರತೆ.

24. ಪುರಂದರ ದಾಸರ ವಚನಗಳ ಅಂಕಿತನಾಮ ಯಾವುದು?

a) ರಾಮನಾಥ   b) ವಿಠಲ

c) ಗುಹೇಶ್ವರ   d) ಪುರಂದರ ವಿಠಲ.

25. ತಲ್ಲಣಿಸಿದಿರು ಕಂಡ್ಯ ತಾಳು ಮನವೇ ಕೀರ್ತನೆ ಕೀರ್ತನಕಾರರು ಯಾರು?

a) ಪುರಂದರದಾಸರು   b) ಕನಕದಾಸರು

c) ಶಿವಯೋಗಿ   d) ಶಿಶುನಾಳ ಶರೀಫರು.

26. ಕುಂಬಾರಕಿ ಆರು ಕಾಸಿಗೊಂದು ಏನೆನ್ನು ಮಾರುತ್ತಾಳೆ?

a) ಕುಡಕೆ   b) ಮಡಿಕೆ

c) ಗುಡಾಣ   d) ಗಡಿಗೆ.

27. ಕನ್ನಡ ಭಾಷೆಯ ಲಿಪಿಯನ್ನು ಲಿಪಿಗಳ ರಾಣಿ ಎಂದು ಕರೆದವರು ಯಾರು?

    a) ಸರೋಜಿನಿ ನಾಯ್ಡು   b) ಮದರ ತರೆಸಾ

    c) ವಿನೋಬಾ ಭಾವೆ   d) ಒನಕೆ ಓಬವ್ವ.

28. ಮೋಹಿನಿಗೆ ಮರುಳಾದವರು ಯಾರು?

    a) ಮಾನವನು   b) ಮಹಿಳೆಯರು

    c) ಮೂರ್ಖದಾನವರ   d) ಯಾರು ಇಲ್ಲ.

29. ಹೊಸಬಾಳಿನ ಗೀತೆ ಕವನದ ಕವಿ ಯಾರು?

    a) ಕುವೆಂಪು   b) ಬೇಂದ್ರೆ   c) ಶಿವರುದ್ರಪ್ಪ   d) ಡಿ.ವಿ.ಜಿ.

30. ಅವರವರ ಭಕುತಿಗೆ ಅವರವರ ಭಾವಕ್ಕೆ ಎಂದು ಹಾಡಿದವರು ಯಾರು?

    a) ಶಿಶುನಾಳ ಶರೀಫ   b) ಕುವೆಂಪು

    c) ಡಿ.ವಿ.ಜಿ   d) ಬಾಲಲೀಲಾ ಮಹಾಂತ ಶಿವಯೋಗಿ.

31. ಮೈಸೂರು ರಾಜ್ಯಕ್ಕೆ ಕರ್ನಾಟಕ ಎಂದು ನಾಮಕರಣ ಮಾಡಿದ ವರ್ಷ --------.

    a) 1973   b) 1964   c) 1955   d) 1947.

32. ಸರ್. ಎಂ. ವಿಶ್ವೇಶ್ವರಯ್ಯನವರು ಪಡೆದಿರುವ ದೇಶದ ಅತ್ಯುತ್ತಮ ಪ್ರಶಸ್ತಿ ಯಾವುದು?

    a) ಪದ್ಮಶ್ರೀ   b) ಪದ್ಮಭೂಷಣ

    c) ಪದ್ಮವಿಭೂಷಣ   d) ಭಾರತ ರತ್ನ.

33. ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ಆಡಳಿತ ಭಾಷೆ ಯಾವುದು?

    a) ಕನ್ನಡ   b) ತಮಿಳು   c) ತೆಲುಗು   d) ಹಿಂದಿ.

34. ಕರ್ನಾಟಕದ ರಾಜಧಾನಿ ಯಾವುದು?

    a) ಮೈಸೂರು   b) ಬೆಂಗಳೂರು

    c) ಧಾರವಾಡ   d) ಬೆಳಗಾವಿ.

35. ಸಂತ ಶಿಶುನಾಳ ಶರೀಫರು ಹೆಸರುವಾಸಿಯಾಗಿದ್ದುದು ----- ಗಳಿಗೆ.

    a) ಜನಪದ   b) ಕೀರ್ತನೆ   c) ವಚನ   d) ತತ್ವಪದ.

36. ಬಟ್ಟೆ ಮೇಲಿನ ಮುದ್ರಣ ಕಲೆಗೆ ಯಾವ ದೇಶವು ಮೂಲ ನೆಲೆಯಾಗಿದೆ.

    a) ಇಂಗ್ಲೇಂಡ್   b) ಫ್ರಾನ್ಸ್   c) ಭಾರತ   d) ಅಮೇರಿಕಾ.

37. ಪ್ರಹ್ಲಾದನ ತಾಯಿಯ ಹೆಸರೇನು?

    a) ರುದ್ರಮ್ಮ   b) ಕಾಳಮ್ಮ   c) ರುಕ್ಮಿಣಿ   d) ತಾಯಮ್ಮ.

38. ಸಂವಿಧಾನದ ಯಾವ ಅನುಚ್ಛೇದದ ಅನುಸಾರ ರಾಜ್ಯಗಳಲ್ಲಿ ಬಳಕೆಯಾಗುವ ಭಾಷೆಗಳನ್ನೆ ಆಡಳಿತ ಭಾಷೆಯೆಂದು ತೀರ್ಮಾನಿಸಲಾಗಿದೆ.

    a) 343   b) 443   c) 543   d) 643.

39. ಮೇಗಾನೆ ಗ್ರಾಮದಲ್ಲಿ ವಾಸವಿರುವ ಬುಡಕಟ್ಟು ಜನಾಂಗದ ಹೆಸರೇನು?

    a) ಕುಣಬಿ   b) ನಾಗ   c) ಭದ್ರ   d) ಮಲಯ.

40. "ಕರ್ನಾಟಕ ಸಂಸ್ಕೃತಿ" ಲೇಖನದ ಕರ್ತೃ ಯಾರು?

    a) ಕುವೆಂಪು   b) ಹಂಪ ನಾಗರಾಜಯ್ಯ

    c) ಗೋವಿಂದ ಪೈ   d) ಬೇಂದ್ರೆ.

41. ಅಲ್ಲಮಪ್ರಭು ಹೆಸರುವಾಸಿಯಾಗಿದ್ದು ------- ಗಳಿಗೆ.

    a) ಜನಪದ   b) ಕೀರ್ತನೆ   c) ವಚನ   d) ತತ್ವಪದ.

42. ಅಕ್ಕಮಹಾದೇವಿಯವರ ಅಂಕಿತನಾಮ ಯಾವುದು?

    a) ಚೆನ್ನಮಲ್ಲಿಕಾರ್ಜುನ   b) ಅಲ್ಲಮಪ್ರಭು

    c) ಕೊಡಲಸಂಗಮದೇವ   d) ಗುಹೇಶ್ವರ.

43. ಕುಪ್ಪಳ್ಳಿ ವೆಂಕಟಪ್ಪ ಪುಟ್ಟಪ್ಪ ಇವರ ಕಾವ್ಯನಾಮ ತಿಳಿಸಿ.

    a) ದ.ರಾ.ಬೇಂದ್ರೆ   b) ಕುವೆಂಪು   c) ಡಿ.ವಿ.ಜಿ   d) ತ.ರಾ.ಸು.

44. ಕರ್ನಾಟಕ ಗತವೈಭವ ಗ್ರಂಥದ ಲೇಖಕರು ಯಾರು?

    a) ಕುವೆಂಪು   b) ಮಾಸ್ತಿ

    c) ಜಿ.ಎಸ್.ಎಸ್   d) ಆಲೂರು ವೆಂಕಟರಾಯರು

45. 'ಅಟ್ಟಕೇರಿಸು' ಈ ನುಡಿಗಟ್ಟಿನ ವಿಶೇಷಾರ್ಥ--------.

    a) ಅಣರೆಸು   b) ತೆಗಳು

    c) ಹೊಗಳು   d) ನಗಿಸು.

46. ಸಂಗೀತಪುರವು ಈ ಹಿಂದೆ ಯಾರ ಊರಾಗಿತ್ತು?

    a) ಬೌದ್ಧರ   b) ತಮಿಳರ

    c) ಪಾರ್ಸಿಗಳ   d) ಜೈನರ.

47. ೧೯೫೫ರಲ್ಲಿ ರಾಯಚೂರಿನಲ್ಲಿ ನಡೆದ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪರಿಷತ್ತಿನ ಸಮ್ಮೇಳನದ ಅಧ್ಯಕ್ಷರು ಆಗಿದ್ದವರು ಯಾರು?

    a) ಶ್ರೀರಂಗರು   b) ದಾ.ರಾ.ಬೇಂದ್ರೆ

    c) ಚಂದ್ರಶೇಖರ ಕಂಬಾರ   d) ಡಿ.ವಿ.ಜಿ.

48. ಅಲ್ಲಮಪ್ರಭುಗಳ ವಚನದ ಕಾವ್ಯನಾಮ ಯಾವುದು?

    a) ಗುಹೇಶ್ವರ   b) ಸಂಗಮದೇವ

    c) ಚೆನ್ನಮಲ್ಲಿಕಾರ್ಜುನ   d) ಶಿಮೇಶ್ವರ.

49. ಕುರುಡು ಕಾಂಚಾಣವನ್ನು ಯಾವ ಕವನ ಸಂಕಲನದಿಂದ ಆಯ್ದುಕೊಳ್ಳಲಾಗಿದೆ.

    a) ನಾಕುತಂತಿ   b) ಮರಳಿ ಮಣ್ಣಿಗೆ

    c) ಕಲ್ಲು ಕರಗುವ ಸಮಯ   d) ನಾದಲೀಲೆ.

50. "ನಾಡ ಗೀತೆ"ಯನ್ನು ರಚಿಸಿರುವ ಕವಿ ಯಾರು?

    a) ಬೇಂದ್ರೆ   b) ಕುವೆಂಪು

    c) ರಾಜರತ್ನಂ   d) ಪಿ. ಲಂಕೇಶ್.

* * * * *

USN ☐☐☐☐☐☐☐☐☐☐

Question Paper Version : A

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Balake Kannada
(COMMON TO ALL BRANCHES)

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.

Write the Kannada vocabulary for the following English words.

1. Who _____
    a) Enu   b) Eke   c) Yaaru   d) Elli

2. This_____
    a) Idu   b) Adu   c) Avu   d) Ivu

3. She _____
    a) avanu   b) avaLu   c) avaru   d) Ivaru

4. His_____
    a) avariage   b) avaLu   c) avana   d) Nanage

5. When _____
    a) Yaaru   b) Hege   c) Estu   d) Yavaga

Fill in the blank for the given English words into Kannada meaning.

6. Long _____
    a) Chikka   b) Dappa   c) agala   d) Udda

7. New_____
    a) gaTTi   b) Hosa   c) HaLeya   d) Taaja

8. Hard _____
    a) SaNNA   b) gaTTi   c) hagura   d) dubaari

9. Salty _____
    a) Uppu   b) huLi   c) Khaara   d) Sihi

10. Dirty _____
    a) Subhra   b) BiLi   c) ONa   d) galiiju

Translate the following English sentence into Kannada sentence.

11. Who are you?
   a) Naanu Yaaru   b) avaLu Yaaru   c) niinu Yaaru   d) adu Yaaru

12. What is your name?
   a) Ninna Hesaru Enu?   b) Nanna Hesaru Enu
   c) Idara Hesaru Enu?   d) AvaLa Hesaru Enu

13. Where is your House?
   a) Avana Mane Elli Ide?   b) Ninna Mane Elli Ide?
   c) AvaLa Mane Elli Ide?   d) Adara Mane Elli Ide?

14. Who is he?
   a) Adu Yaaru?   b) Avanu Yaaru?   c) Idu Yaaru?   d) Idu Elli?

15. Where is your younger sister?
   a) Ninna Tamma Elli Iddale?   b) Ninna Akka Elli Iddale?
   c) Ninna Tangi Elli Iddale?   d) Ninna Anna Elli Iddale?

Match the following using the Table given below?

a)	Student	i)	Vidyalaya
b)	Younger brother	ii)	Vidyarthi
c)	Teacher	iii)	Vaidya
d)	Doctor	iv)	Tamma
e)	College	v)	Shikshaka

16. Student _____
   a) = i   b) = ii   c) = iii   d) = iv

17. Younger Brother _____
   a) = i   b) = ii   c) = iii   d) = iv

18. Teacher _____
   a) = i   b) = ii   c) = iv   d) = v

19. Doctor _____
   a) = i   b) = ii   c) = iii   d) = iv

20. College _____
   a) = i   b) = ii   c) = iii   d) = iv

Write the English Word for the following :

21. Mane _____
   a) Hotel   b) House   c) Shop   d) Street

22. Mara _____
   a) Tree   b) Leaf   c) Flower   d) Fruit

23. Maga _____
   a) Father   b) Mother   c) Uncle   d) Son

24. Amma _____
   a) Younger Brother   b) Elder Brother   c) Mother   d) Elder Sister

25. HaNNu _____
   a) Fruit   b) Flower   c) Seed   d) Plant

Match the following using the table given below :

a)	Green	i)	Huduga
b)	Fruit	ii)	Sihi
c)	Boy	iii)	HaNNu
d)	Son	iv)	Hasiru
e)	Sweet	v)	Maga

40. Green _____
    a) = i   b) = ii   c) = iii   d) = iv

41. Fruit _____
    a) = i   b) = ii   c) = iii   d) = v

42. Boy _____
    a) = i   b) = ii   c) = iii   d) = iv

43. Son _____
    a) = i   b) = ii   c) = iv   d) = v

44. Sweet _____
    a) = i   b) = ii   c) = iii   d) = v

Translate the following English words into Kannada.

45. Book _____
    a) Buk   b) Pustaka   c) Byag   d) Pencil

46. Her House
    a) IvaLa Mane   b) AvaLa Mane   c) Avana Mane   d) Adara Mane

47. Big Tree
    a) Chikka Mara   b) doDDa Mara   c) AgaLa Mara   d) SaNNa Mara

Translate the following Kannada words into English.

48. MagaLu
    a) Son   b) Mother   c) Daughter   d) Sister

49. Kappu BaNNa
    a) Black color   b) Red color   c) White color   d) Green color

50. Obba Vidyarthi
    a) One Teacher   b) One Servant   c) One Brother   d) One Student.

* * * * *

Transform the following Kannada words as per the given model (example) :

Example : angaDi – angaDiyalli

26. Kacheri _____
    a) Maneyalli   b) Kacheriyalli   c) Shaleyalli   d) Halliyalli

27. Batte _____
    a) Batteyalli   b) Angiyalli   c) BaNNadalli   d) Batteyinda

28. How would you write "his Mother" in Kannada?
    a) Avana Tande   b) Avana Tamma   c) Avana Taayi   d) Avana Tangi

29. How would you write "This is My College" in Kannada?
    a) Adu Nmma Vidyalya
    b) Idu Nanna Vidyalaya
    c) Adu Avara Vidyalaya
    d) Idu Ivana Vidyalaya

30. How would you write "Who is She?" in Kannada?
    a) AvaLu Yaaru?   b) Avanu Yaaru?   c) Idu Yaaru   d) Ivaru Yaaru?

31. What is the meaning of "Don't – go"?
    a) Bara Beda   b) Hoga Beda   c) Tinna Beda   d) Kudiya Beda

32. What is the meaning of "My Book" in Kannada?
    a) Nanna Mitra   b) Nanna Pustaka   c) Nanna Angi   d) Nama Mane

33. What is the meaning of "Flower" in Kannada?
    a) HaNNu   b) Hoovu   c) Ele   d) Mane

34. Which one of the following means the color "Red" in Kannada?
    a) Kempu   b) BiLi   c) NeeLi   d) HaLadi

Write appropriate words for the following :

35. Where _____
    a) ELLi   b) Yaake   c) Yaaru   d) Estu

36. Teacher _____
    a) GeLathi   b) Shikshaka   c) Vidyarti   d) Huduga

37. Girl _____
    a) Huduga   b) Mitra   c) Hudugi   d) Snehita

38. Bitter _____
    a) Sihi   b) Uppu   c) Kahi   d) Khara

39. Library _____
    a) Shale   b) Vidyakaya   c) AngaDi   d) Granthalaya

Match the following using the table given below :

a)	Green	i)	Huduga
b)	Fruit	ii)	Sihi
c)	Boy	iii)	HaNNu
d)	Son	iv)	Hasiru
e)	Sweet	v)	Maga

40. Green _____
 a) = i   b) = ii   c) = iii   d) = iv

41. Fruit _____
 a) = i   b) = ii   c) = iii   d) = v

42. Boy _____
 a) = i   b) = ii   c) = iii   d) = iv

43. Son _____
 a) = i   b) = ii   c) = iv   d) = v

44. Sweet _____
 a) = i   b) = ii   c) = iii   d) = v

Translate the following English words into Kannada.

45. Book _____
 a) Buk   b) Pustaka   c) Byag   d) Pencil

46. Her House
 a) IvaLa Mane   b) AvaLa Mane   c) Avana Mane   d) Adara Mane

47. Big Tree
 a) Chikka Mara   b) doDDa Mara   c) AgaLa Mara   d) SaNNa Mara

Translate the following Kannada words into English.

48. MagaLu
 a) Son   b) Mother   c) Daughter   d) Sister

49. Kappu BaNNa
 a) Black color   b) Red color   c) White color   d) Green color

50. Obba Vidyarthi
 a) One Teacher   b) One Servant   c) One Brother   d) One Student.

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