



|| Jai Sri Gurudev ||

BGSKH Education Trust(R.) - A unit of Sri Adichunchanagiri Shikshana Trust(R.)

BGS College Of Engineering and Technology



VTU - Model & Oct 2023 - Exam Question Papers

Physics Cycle





||Jai Sri Gurudev ||
BGSKH Education Trust (R.) – A unit of Sri Adichunchanagiri Shikshana Trust(R.)
BGS College of Engineering and Technology
Mahalakshampuram, West of Chord Road, Bengaluru-560086
(Approved by AICTE, New Delhi and Affiliated to VTU, Belagavi)

Physics Cycle 2022-Scheme

Model & Theory Question Papers for 2nd Semester

Sl,No	Name of the Subject
1	Mathematics for CSE Stream-02
2	Applied Physics for CSE Stream
3	Introduction to Electrical Engineering
4	Principal of Programming Using C
5	Renewable Energy Sources for CSE Stream
6	Waste Management
7	Innovation & Design thinking
8	Introduction to Internet of Things
9	Communicative English
10	Samskruthika Kannada
11	Balake Kannada

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BMATS201

Second Semester B.E./B.Tech. Degree Examination, June/July 2023
Mathematics – II 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.	Evaluate $\int_0^1 \int_0^{\sqrt{1-x^2}} \int_0^{\sqrt{1-x^2-y^2}} xyz \, dz \, dy \, dx$.	7	L2	CO1
	b.	Evaluate by changing the order of integration $\int_0^a \int_0^a \frac{x}{x^2+y^2} \, dx \, dy$.	7	L3	CO1
	c.	Show that $\beta(m,n) = \frac{\Gamma(m)\Gamma(n)}{\Gamma(m+n)}$.	6	L2	CO1
OR					
Q.2	a.	Evaluate $\int_{-2}^2 \int_0^{\sqrt{4-x^2}} (2-x) \, dy \, dx$ by changing into polar coordinates.	7	L3	CO1
	b.	A pyramid is bounded by three coordinate planes and the plane $x+2y+3z=6$. Compute the volume by double integration.	7	L3	CO1
	c.	Using Mathematical tools, write the code to find the area of the cardioids $r = a(1 + \cos \theta)$ by double integration.	6	L3	CO5
Module – 2					
Q.3	a.	Show that the two surfaces $xz + y + z^2 = 9$ and $z = 4 - 4xy$ at $(1, -1, 2)$ are orthogonal.	7	L3	CO2
	b.	If $F = \text{grad}(xy^3z^2)$, find $\text{div}F$ and $\text{curl}F$ at the point $(1, -1, 1)$.	7	L2	CO2
	c.	Prove that the cylindrical coordinate system is orthogonal.	6	L3	CO2
OR					
Q.4	a.	Find the directional derivative of $\phi = x \log z - y^2 + 4$ at $(-1, 2, 1)$ in the direction of the vector $2i - j - 2k$.	7	L2	CO2
	b.	Find the constants a, b and c such that $F = (axy - z^3)i + (bx^2 + z)j + (bxz^2 + cy)k$ is irrotational.	7	L2	CO2
	c.	Using the Mathematical tools, write the codes to find the gradient of $\phi = xy^2z^3$.	6	L3	CO5
1 of 3					

Module - 3

Q.5	a.	Let $W = \{(x, y, z) \mid lx + my + nz = 0\}$, then prove that W is a subspace of \mathbb{R}^3 .	7	L2	CO3
	b.	Find the basis and the dimension of the subspace spanned by the vectors $\{(2, 4, 2), (1, -1, 0), (1, 2, 1), (0, 3, 1)\}$ in $V_3(\mathbb{R})$.	7	L2	CO3
	c.	Prove that $T : \mathbb{R}^3 \rightarrow \mathbb{R}^3$ be defined by $T(x, y, z) = (2x-3y, x+4, 5z)$ is not a linear transformation.	6	L3	CO3

OR

Q.6	a.	Show that the matrix $E = \begin{bmatrix} -1 & 7 \\ 8 & -1 \end{bmatrix}$ lies in the sub space span $\{A, B, C\}$ of vector space M_{22} of 2×2 matrices, where $A = \begin{bmatrix} 1 & 0 \\ 2 & 1 \end{bmatrix}$, $B = \begin{bmatrix} 2 & -3 \\ 0 & 2 \end{bmatrix}$ and $C = \begin{bmatrix} 0 & 1 \\ 2 & 0 \end{bmatrix}$.	7	L2	CO3
	b.	Verify the Rank-nullity theorem for the linear transformation $T : \mathbb{R}^3 \rightarrow \mathbb{R}^3$ defined by $T(x, y, z) = (x + 2y - z, y + z, x + y - 2z)$.	7	L3	CO3
	c.	Define an Inner product space. Consider $f(t) = 4t + 3$, $g(t) = t^2$, the inner product $\langle f, g \rangle = \int_0^1 f(t)g(t)dt$. Find $\langle f, g \rangle$ and $\ g\ $.	6	L2	CO3

Module - 4

Q.7	a.	Find the real root of the equation $x \log_{10} x - 1.2$ by the Regula-Falsi method between 2 and 3. (Carryout three iterations).	7	L2	CO4												
	b.	From the following table, estimate the number of students who have obtained the marks between 40 and 45. <table border="1" style="margin-left: 20px;"> <tr> <td>Marks</td> <td>30 - 40</td> <td>40 - 50</td> <td>50 - 60</td> <td>60 - 70</td> <td>70 - 80</td> </tr> <tr> <td>Number of students</td> <td>31</td> <td>42</td> <td>51</td> <td>35</td> <td>31</td> </tr> </table>	Marks	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80	Number of students	31	42	51	35	31	7	L2	CO4
	Marks	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80											
Number of students	31	42	51	35	31												
c.	Compute the value of $\int_{0.2}^{1.4} (\sin x - \log x + e^x) dx$ using Simpson's $\frac{3}{8}$ rule taking six parts.	6	L3	CO4													

OR

Q.8	a.	Using Newton-Raphson method compute the real root of the equation $x \sin x + \cos x = 0$ near $x = \pi$, correct to four decimal places.	7	L2	CO4
	b.	If $y(0) = -12$, $y(1) = 0$, $y(3) = 6$ and $y(4) = 12$, find the Lagrange's interpolation polynomial and estimate $y(2)$.	7	L2	CO4
	c.	Evaluate $\int_0^3 \frac{dx}{4x+5}$ using Trapezoidal rule by taking 7 ordinates.	6	L3	CO4

Module - 5

Q.9	a.	Employ Taylor's series method to obtain $y(0.1)$ for $\frac{dy}{dx} = 2y + 3e^x$, $y(0) = 0$ considering upto 4 th degree terms.	7	L2	CO4
	b.	Using Runge-Kutta method of fourth order, solve $y' = \log_{10} \left[\frac{y}{1-x} \right]$ given $y(0) = 1$ at $x = 0.2$	7	L3	CO4

	c.	Solve $\frac{dy}{dx} = 2e^x - y$, $y(0) = 2$, $y(0.1) = 2.010$, $y(0.2) = 2.040$, $y(0.3) = 2.090$, find $y(0.4)$ using Milne's method.	6	L2	CO4										
OR															
Q.10	a.	Given $\frac{dy}{dx} = x + \sqrt{y}$, $y(0) = 1$. Compute $y(0.4)$ with $h = 0.2$ using Euler's modified method. Perform two modifications in each stage.	7	L2	CO4										
	b.	Apply Milne's predictor-corrector formulae to compute $y(4.5)$, given that $5x \frac{dy}{dx} = 2 - y^2$ and	7	L2	CO4										
		<table border="1" style="margin-left: 20px;"> <tr> <td>x</td> <td>4.1</td> <td>4.2</td> <td>4.3</td> <td>4.4</td> </tr> <tr> <td>y</td> <td>1.0049</td> <td>1.0097</td> <td>1.0143</td> <td>1.0187</td> </tr> </table>	x	4.1	4.2	4.3	4.4	y	1.0049	1.0097	1.0143	1.0187			
x	4.1	4.2	4.3	4.4											
y	1.0049	1.0097	1.0143	1.0187											
	c.	Using modern mathematical tools, write the code to find the solution of $\frac{dy}{dx} = x - y^2$ at $y(0.2)$. Given that $y(0) = 1$ by Runge-Kutta 4 th order method. (Take $h = 0.2$)	6	L3	CO5										

CBCS SCHEME

BMATS101

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First Semester B.E./B.Tech. Degree Examination, June/July 2023
Mathematics-I 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.	With usual notations prove that $\tan\phi = r \frac{d\theta}{dr}$	06	L2	CO1
	b.	Find the angle between the curves $r^n = a^n \cos n\theta$ and $r^n = b^n \sin n\theta$	07	L2	CO1
	c.	Find the radius of curvature for $\sqrt{x} + \sqrt{y} = \sqrt{a}$ at $[\frac{a}{4}, \frac{a}{4}]$	07	L3	CO1
OR					
Q.2	a.	With usual notations prove that $\rho = \frac{(1+y_1^2)^{3/2}}{y_2}$	07	L2	CO1
	b.	Obtain pedal equation for the curve $r^n = a^n \cos n\theta$	08	L2	CO1
	c.	Using modern mathematical tool write a program/code to plot the curve $r = 2 \cos 2\theta $	05	L3	CO5
Module – 2					
Q.3	a.	Expand $\text{Log}(\cos x)$ by Maclaurin's series upto term containing x^6	06	L2	CO2
	b.	If $u = f\left(\frac{x}{y}, \frac{y}{z}, \frac{z}{x}\right)$, show that $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} + z \frac{\partial u}{\partial z} = 0$	07	L2	CO2
	c.	Find the extreme values of the function $x^3 + y^3 - 3x - 12y + 20$	07	L3	CO2
OR					
Q.4	a.	Evaluate $\lim_{x \rightarrow 0} \left(\frac{a^x + b^x + c^x + d^x}{4} \right)^{1/x}$	07	L2	CO3
	b.	If $u = \frac{yz}{x}$, $v = \frac{zx}{y}$, $w = \frac{xy}{z}$, show that $\frac{\partial(u, v, w)}{\partial(x, y, z)} = 4$	08	L2	CO3
	c.	Using modern mathematical tool write a program/code to show that $u_{xx} + u_{yy} = 0$ give $u = e^x (x \cos y - y \sin y)$	05	L2	CO5
Module – 3					
Q.5	a.	Solve : $x \frac{dy}{dx} + y = x^3 y^6$	06	L2	CO3
	b.	Find the orthogonal trajectories of the family of the curves $r^n \sin n\theta = a^n$ where 'a' is parameter.	07	L3	CO3
	c.	Solve : $xyp^2 - (x^2 + y^2)p + xy = 0$	07	L2	CO3
OR					

Q.6	a.	Solve $(x^2 + y^2 + 6x)dx + y^2x dy = 0$	06	L2	CO3
	b.	Find the general and singular solutions of $xp^2 + xp - yp + 1 - y = 0$	07	L3	CO3
	c.	Find the general solution of the equation $(px - y)(py + x) = 2p$ by reducing into Clairaut's form by taking the substitution $X = x^2, Y = y^2$.	07	L2	CO3
Module - 4					
Q.7	a.	Find the least positive values of 'x' such that i) $78 + x \equiv 3 \pmod{5}$ ii) $89 \equiv (x + 3) \pmod{4}$	06	L2	CO4
	b.	Find the solution of the linear congruence $14x \equiv 12 \pmod{18}$	07	L2	CO4
	c.	Encrypt the message STOP using RSA with key (2537, 13) using the prime numbers 43 and 59.	07	L2	CO4
OR					
Q.8	a.	i) Find the remainder when 2^{23} is divided by 47. ii) Find the last digit in 7^{118} .	06	L2	CO4
	b.	Solve the system of linear congruence $x \equiv 2 \pmod{3}; x \equiv 3 \pmod{5}; x \equiv 2 \pmod{7}$ using Remainder Theorem.	07	L2	CO4
	c.	i) Find the remainder when $175 \times 113 \times 53$ is divided by 11. ii) Solve $x^3 + 2x - 3 \equiv 0 \pmod{9}$	07	L2	CO4
Module - 5					
Q.9	a.	Find the rank of the matrix $A = \begin{bmatrix} 2 & 3 & -1 & -1 \\ 1 & -1 & -2 & -4 \\ 3 & 1 & 1 & 3 \\ 6 & 3 & 0 & -7 \end{bmatrix}$	06	L2	CO4
	b.	Test for consistency and solve $2x + 5y + 7z = 52; 2x + y - z = 0; x + y + z = 9.$	07	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 $X_0 = \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix}$.	07	L2	CO4
OR					
Q.10	a.	Solve the system of equations $x + 2y - z = 3; 3x - y + 2z = 1; 2x - 2y + 3z = 2$ by using Gauss-Jordan method.	07	L2	CO4
	b.	Solve the system of equations $20x + y - 2z = 17, 3x + 20y - z = -18; 2x - 3y + 20z = 25$ by using Gauss - Seidel method.	08	L2	CO4
	c.	Using modern mathematical tool write a program/code to find the largest eigen value of $A = \begin{bmatrix} 1 & 1 & 3 \\ 1 & 5 & 1 \\ 3 & 1 & 1 \end{bmatrix}$ by power method.	05	L3	CO5

CBCS SCHEME

BPHYS102/202

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First/Second Semester B.E./B.Tech. Degree Examination, June/July 2023
Physics for CSE Stream

Max. Marks: 100

Time: 3 hrs.

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.

4. Constants : Speed of Light $C = 3 \times 10^8$ m/s, Boltzmann const. $K = 1.38 \times 10^{-23}$ J/K, Planck's const $h = 6.625 \times 10^{-34}$ JS, Acceleration due to gravity $g = 9.8$ m/s², mass of electron $m = 9.1 \times 10^{-31}$ Kg

Module - 1			M	L	C
Q.1	a.	Derive an expression for energy density in terms of Einstein's coefficients in Laser action.	10	L2	CO1
	b.	Explain types of optical fibers.	6	L2	CO1
	c.	The ratio of population inversion of two energy levels is 1.059×10^{-30} . Find the wavelength of Light emitted by spontaneous emissions at 330K.	4	L3	CO1
OR					
Q.2	a.	Derive an expression for Numerical aperture in an optical fiber.	8	L2	CO1
	b.	Discuss construction and working of semiconductor diode Laser with energy level diagram.	8	L2	CO1
	c.	The angle of acceptance of an optical fiber is 30° ; when kept in air. Find the angle of acceptance when it is in a medium of refractive index 1.33.	4	L3	CO1
Module - 2					
Q.3	a.	What is wave packet? Give physical significance and properties of wave function? Define group velocity.	8	L2	CO1
	b.	State and explain Heisenberg's uncertainty principle. Give its physical significance. Show that electron cannot exist inside the nucleus.	8	L2	CO2
	c.	A particle of mass $0.5m_e$ has kinetic energy 100eV. Find its de Broglie wavelength, where 'C' is the velocity of light.	4	L3	CO2
OR					
Q.4	a.	Derive an expression for Schrödinger's Time independent equation one dimensional form.	8	L2	CO2
	b.	Obtain the expression for energy eigen values using Schrodinger's time independent equation.	8	L2	CO2
	c.	In a measurement of position and velocity of an electron moving with a speed of 6×10^5 m/s, calculate highest accuracy with which its position could be determined, if the inherent error in the measurement of its velocity is 0.01% for the speed stated.	4	L3	CO2

Module – 3

Q.5	a.	Explain single qubit gate and multiple qubit gate with example for each.	8	L2	CO2
	b.	Discuss CNOT gate and its operation on four different input states.	8	L2	CO2
	c.	Given $A = \begin{pmatrix} 0 & -i \\ i & 0 \end{pmatrix}$ prove that $A^\dagger = A$.	4	L3	CO2

OR

Q.6	a.	Elucidate the differences between classical computing and Quantum computing.	8	L2	CO2
	b.	Discuss the working of phase gate mentioning its matrix representation and truth table.	8	L2	CO2
	c.	Find the inner product of states $ 1\rangle$ and $ 0\rangle$ and draw conclusion on the result.	4	L3	CO2

Module – 4

Q.7	a.	Distinguish between Type – I and Type – II super conductors.	8	L2	CO3
	b.	Discuss the effect of temperature and impurity on electrical resistivity of conductors and hence explain for superconductors.	8	L2	CO3
	c.	In a diffraction grating experiment the laser light undergoes second order diffraction, if the distance between screen and grating is 20cm, and average distance of 2 nd order spot 2.7cm grating constant 1×10^{-5} m, calculate the wavelength of laser light.	4	L3	CO5

OR

Q.8	a.	Explain B.C.S theory of superconductivity.	7	L2	CO1
	b.	Define Fermi energy level. Discuss various energy states by the electrons at $T = 0$ K and $T > 0$ K on the basis of fermifactor.	8	L2	CO1
	c.	Calculate the acceptance angle and numerical aperture of given optical fiber having diameter of spot is 2.6cm and distance between screen and optical fiber 3.0cm.	5	L2	CO1

Module – 5

Q.9	a.	Elucidate the importance of size and scale and weight and strength in animations.	8	L2	CO4
	b.	Discuss modeling probability of proton decay.	8	L2	CO4
	c.	The number of particles emitted per second by a random radioactive source has a Poisson's distribution with $\lambda = 4$. Calculate the probability of $P(X = 0)$ and $P(X = 1)$	4	L3	CO4

OR

Q.10	a.	Discuss timing in Linear motion, uniform motion, show in and flow out.	8	L2	CO4
	b.	Discuss salient features of Normal distribution using Bell curves.	8	L2	CO4
	c.	A slowing in object in an animation has a first frame distance 0.5m and first slow in frame 0.35m. Calculate the base distance and the number of frames in sequence.	4	L3	CO4

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First Semester B.E./B.Tech. Degree Examination, June/July 2023
Introduction to Electrical Engineering

Max. Marks: 100

Time: 3 hrs.

- 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 a typical electric power system with the help of a single line labelled diagram.	8	L2	CO1
	b.	Draw and explain the working of Hydel power plant.	7	L2	CO1
	c.	A direct - current circuits comprises two resistors, 'A' of value 25 ohms, 'B' of unknown value, connected in parallel, together with third resistor 'C' of value 5 ohms connected in series with the parallel group. The potential difference across 'C' is found to 90V and total power dissipated in the whole circuit is 4320 watts, Calculate : i) The value of resistor 'B' ii) The voltage applied to the whole circuit.	5	L3	CO1
OR					
Q.2	a.	Write a note on conventional and non-conventional energy resources.	7	L2	CO1
	b.	State and explain Kirchoff's laws applicable to d.c circuits.	7	L2	CO1
	c.	Find the currents I_1 and I_2 of Fig Q2(c)	6	L3	CO1
<p style="text-align: center;">Fig Q2(c)</p>					
Module - 2					
Q.3	a.	Define following terms applied to alternating current wave : i) Average value ii) R.M.S value iii) Form factor iv) Peak factor.	6	L3	CO2
	b.	Establish relation between voltage and current in a.c. circuit containing pure inductance only. Draw the phasor diagram.	8	L3	CO2
	c.	A balanced delta connected load has per phase impedance of $(8 + j6)$ ohm and line voltage is 400V at the load terminals. Find the current p.f and power delivered to the load.	6	L2	CO2

OR					
Q.4	a.	Explain the generation of three phase a.c and list the advantages.	6	L2	CO2
	b.	A coil has inductance of 0.05H and a resistance of 10Ω . It is connected to a sinusoidal 200V, 50Hz supply. Calculate the impedance, current and power consumed.	6	L3	CO2
	c.	A series RLC circuit is composed of 10Ω resistor, one 0.1H inductance and one $50.00\ \mu\text{F}$ capacitor. A voltage of $v = 141.4 \sin 100\pi t$ is impressed upon the circuit. i) Find the current ii) Calculate V_R , V_L , and V_C iii) Active power iv) Apparent power.	8	L3	CO2
Module - 3					
Q.5	a.	Derive E.M.F equation of the D.C generator.	6	L3	CO3
	b.	Explain the characteristics of D.C shunt motor.	7	L2	CO3
	c.	A Shunt generator supplies 195A at 220V Armature resistance = 0.02Ω , shunt field resistance is 44Ω , find the e,m,f generated.	7	L3	CO3
OR					
Q.6	a.	Derive torque equation of the d.c. motor.	6	L3	CO3
	b.	An 8-pole lap wound d.c. Generator armature rotated at 350rpm is required to generate 260V. The useful magnetic flux per pole is 0.05wb. Find the total number of conductors.	7	L3	CO3
	c.	A 6-pole lap wound shunt motor has 500 conductors. The armature and field resistances are 0.05Ω and 25Ω respectively. Find the speed of motor it takes 120A from a d.c. supply of 100V. Flux per pole is 20 mwb.	7	L3	CO3
Module - 4					
Q.7	a.	Describe the operation of a single phase transformer, explaining clearly the functions of the different parts.	7	L2	CO4
	b.	A 100KVA, 6600/440V, 50Hz single phase transformer has 80 turns on the low voltage winding. Calculate i) the maximum flux in the core ii) the number of turns on the high voltage winding iii) the current in each winding iv) voltage per turn.	7	L3	CO4
	c.	A 3-phase, 6-pole, 50Hz induction motor has a slip of 1% at no load, and 3% at full load. Determine: i) Synchronous speed ii) No-load speed iii) Full load speed.	6	L3	CO4
OR					
Q.8	a.	Explain how rotating magnetic field is producing in the three phase induction motor.	7	L2	CO4
	b.	A 500KVA transformer has an iron loss of 700 w and a full load copper loss of 1800W. Calculate : i) Efficiency at full load, 0.8p.f lagging ii) Efficiency at half load, UPF.	7	L3	CO4

	c.	A 4-pole, 3-phase induction motor operates from a supply whose frequency is 50Hz. Calculate : i) Speed at which magnetic field is rotating ii) Speed of the rotor when its slip is 0.04	6	L3	CO4
Module – 5					
Q.9	a.	With neat wiring diagram and truth table explain three way control of lamp.	7	L2	CO5
	b.	In a residential house, the following loads are connected : i) Six lamps of 40w each, switched on for 5 hours a day ii) Two fans of 60w each, switched on for 12 hours a day iii) One 1000w heater working for 2 hours per day iv) One refrigerator of 250w working for 10 hours per day. If each unit of energy costs Rs. 6.50, what will be the total cost in the month of April?	7	L3	CO5
	c.	What is electric shock? List the preventive measures against the shock.	6	L2	CO5
OR					
Q.10	a.	What is earthing? With neat diagram, explain any one type of earthing.	7	L2	CO5
	b.	Explain working principle of Fuse and miniature circuit breaker.	7	L2	CO5
	c.	What are the desirable characteristics of a tariff and explain two part tariff.	6	L2	CO5

CBCS SCHEME

BPOPS103/203

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

Module - 1			M	L	C
Q.1	a.	Define Computer. Describe the characteristics of computer in detail.	10	L2	CO1
	b.	Explain various Input devices.	10	L2	CO1
OR					
Q.2	a.	Explain the following programming paradigms. i) Procedural Programming ii) Structured Programming iii) Object Oriented Programming.	10	L2	CO2
	b.	Explain printf() and scanf() functions with their syntax. Give the illustrative examples.	10	L2	CO2
Module - 2					
Q.3	a.	Explain any five types of operators in C language with the illustrative examples.	10	L2	CO2
	b.	Write a C program to find the roots of quadratic equation by accepting the coefficients. Print appropriate messages.	10	L3	CO2
OR					
Q.4	a.	What are iterative statements? Explain three types of iterative statements with their syntax.	10	L2	CO2
	b.	Write a program to print the following pattern. <div style="text-align: center; margin-left: 100px;"> 1 1 2 1 2 3 1 2 3 4 </div>	10	L3	CO2
Module - 3					
Q.5	a.	Explain the syntax of function declaration and function definition with example.	06	L2	CO2, CO5
	b.	Write a C program to swap two numbers using call by reference method.	06	L3	CO2, CO5
	c.	Describe different types of storage classes with examples.	08	L2	CO2
OR					
Q.6	a.	What is an array? Explain how arrays are declared and initialized with example.	08	L2	CO3
	b.	Write a C program to transpose a 3×3 matrix.	08	L3	CO3
	c.	List applications of arrays.	04	L3	CO3

Module – 4

Q.7	a.	Write a C program to convert characters of a string into upper case without using built-in function.	10	L3	CO3
	b.	Discuss the working of the following string manipulation functions with suitable examples. i) strcmp ii) strlen iii) strcpy iv) strcat v) strcmp	10	L2	CO3

OR

Q.8	a.	Define Pointer. Explain the declaration of a pointer variable with an example.	05	L2	CO2, CO4
	b.	Mention the applications of pointers.	05	L2	CO4
	c.	Develop a C program to compute the sum, mean and standard deviation of all elements of an array using pointers.	10	L3	CO3, CO4

Module – 5

Q.9	a.	What is structure? Explain the declaration of a structure with an example.	06	L2	CO4
	b.	Differentiate between Structures and Unions.	06	L3	CO4
	c.	Develop a C program to read and display the information of all the students in the class.	08	L3	CO4

OR

Q.10	a.	Define Enumerated datatype. Explain the declaration and access of enumerated datatypes with a code in C.	06	L2	CO2
	b.	Explain the process of opening a file in C.	06	L2	CO2
	c.	Write a C program to demonstrate fwrite() function.	08	L3	CO2

CBCS SCHEME

BETCK205E/E205

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Second Semester B.E./B.Tech. Degree Examination, June/July 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.	List and explain principles of Renewable Energy.	7	L2	CO1
	b.	Explain advantages of Renewable Energy and obstacles to implement Renewable Energy.	6	L2	CO1
	c.	Write short note on Geothermal Energy.	7	L2	CO1
OR					
Q.2	a.	Write short note on Geothermal Energy.	6	L2	CO1
	b.	Describe the process of production of synthetic crude oil from oil shale.	7	L2	CO1
	c.	Define Internet of Energy (IOE) and also list its benefits and applications.	7	L2	CO1
Module – 2					
Q.3	a.	Define the terms : i) Altitude angle ii) Incident angle iii) Zenith angle iv) Solar Azimuth angle v) Latitude angle vi) Declination angle vii) Hour angle.	7	L1	CO2
	b.	With neat sketch, explain the function of main components of Solar flat plate collector.	7	L2	CO2
	c.	Calculate the angle made by beam radiation with the normal to a flat plate collector on Dec 1 st at 9.00 am, solar time for a location at 28° 35'N. The collector is tilted at an angle of latitude plus 10° with the horizontal and pointing drive south.	6	L3	CO2
OR					
Q.4	a.	Explain Beam and diffuse radiation with neat sketch.	7	L2	CO2
	b.	Briefly explain Attenuation of beam radiation.	6	L3	CO2
	c.	Explain working principle of Pyrheliometer, with neat sketch.	7	L2	CO2
Module – 3					
Q.5	a.	Derive an expression for wind power and also discuss the conditions in traversing a wind rotor.	7	L3	CO3
	b.	Explain basic components of wind energy conversion system.	7	L2	CO3
	c.	Explain the process of photosynthesis in biomass production and also list necessary conditions for photosynthesis.	6	L2	CO3

OR

Q.6	a.	Explain Site selection considerations to install wind machine.	7	L2	CO3
	b.	With neat sketch, explain working principle of Savonius rotor.	6	L2	CO3
	c.	Explain construction and operation of Janta Biogas Plant.	7	L2	CO3

Module – 4

Q.7	a.	Briefly explain Single basin tidal power plant.	6	L2	CO4
	b.	Explain working principle of closed cycle OTEC system.	7	L2	CO4
	c.	List advantages and limitations of Wave energy.	7	L2	CO4

OR

Q.8	a.	With a neat sketch, explain Double basin tidal system.	7	L2	CO4
	b.	Explain Claude cycle OTEC system.	7	L2	CO4
	c.	Write a note on Energy utilization in OTEC.	6	L2	CO4

Module – 5

Q.9	a.	Explain working principle of Alkaline fuel cell, with a neat diagram.	10	L2	CO5
	b.	Explain Electrolytic production used for hydrogen generation showing chemical reactions undergoing.	10	L2	CO5

OR

Q.10	a.	Explain working principle of Molten Carbonate fuel cell.	10	L2	CO5
	b.	Explain methods of Storing hydrogen energy.	10	L2	CO5

CBCS SCHEME

BETCKF205/BETCK205F

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Second Semester B.E/B.Tech. Degree Examination, June/July 2023 Waste Management

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
1	a.	With a neat schematic diagram, explain the functional elements of the solid waste management.	10	L2	CO1	
	b.	Define the term solid waste. Explain the classification and sources of solid waste.	10	L2	CO1	
OR						
2	a.	Write a note on ESSWM [Environmentally Sound Solid Waste Management] and explain factors affecting solid waste management.	10	L2	CO1	
	b.	What is e-waste? Explain Indian and global scenario of e-waste.	10	L2	CO1	
Module - 2						
3	a.	Briefly explain in detail chemical and physical characteristics of solid waste.	10	L3	CO1	
	b.	Explain in detail the purpose and functions WSA [Waste Stream Assessment].	10	L3	CO2	
OR						
4	a.	Explain any one case study results from an Indian city on solid waste management/waste composition.	10	L3	CO1	
	b.	Comparatively assess waste generation and composition of solid waste in developed and developing nation.	10	L3	CO1	
Module - 3						
5	a.	List and explain the important factors considered for site location in design of transfer station.	10	L3	CO2	
	b.	Discuss in detail collection and storage containers of solid waste management.	10	L3	CO2	
OR						
6	a.	List and explain site selection factors for solid waste disposal site and any one sanitary landfill method.	10	L3	CO2	
	b.	Write a short note on : i) Leachate and its formation ii) Landfill gas emission control.	10	L3	CO2	
Module - 4						
7	a.	Explain the following process techniques : i) Mechanical volume reduction ii) Mechanical size reduction.	10	L3	CO3	
	b.	Explain briefly components of separation techniques along with classification.	10	L3	CO3	

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

8	a.	Explain in detail commonly recycled materials and process.	10	L3	CO3
	b.	Apply the concept of SWM for monitoring and evaluation of source reduction.	10	L3	CO3

Module – 5

9	a.	Define Hazardous waste and classification of hazardous waste treatment.	10	L3	CO4
	b.	Explain physical and thermal treatment methods of hazardous waste treatment.	10	L3	CO4

OR

10	a.	Apply the concept of pollution prevention and waste minimization for any industry.	10	L3	CO4
	b.	Explain the importance and advantages of E-waste recycling along with the examples.	10	L3	CO4

CBCS SCHEME

BIDTK158/258

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Question Paper Version : A

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2023 Innovation and Design Thinking

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. To empathize, one has to
 - a) Observe
 - b) Engage
 - c) Listen
 - d) All of these
2. _____ story telling is the most compelling type of story.
 - a) Aural
 - b) Visual
 - c) Textual
 - d) All of these
3. Which of the following principles are not considered for design thinking?
 - a) Embrace experimentation
 - b) Human centric design
 - c) Profit centric
 - d) Pattern identification for problem solving
4. Which of the following are not tools of visualization?
 - a) Maps
 - b) Images
 - c) Stories
 - d) Videos
5. What happens in the test stage of design thinking?
 - a) You conduct a written test of your design team.
 - b) You allow consumers to test a product or service.
 - c) You engage in internal testing with employees.
 - d) You test products design by competitors.
6. Collecting _____ is an important portion of testing a prototype in the test stage of design.
 - a) Pictures
 - b) Money
 - c) Feedback
 - d) Emails

7. Process Innovation refers to
 - a) The development of a new service
 - b) The development of a new product
 - c) The implementation of new or improved production method
 - d) The development of new product or services

8. What is the first step in The Design Thinking Process?
 - a) Define
 - b) Ideate
 - c) Prototype
 - d) Empathize

9. After you define the problem, the next step is to _____.
 - a) Test
 - b) Prototype
 - c) Ideate
 - d) Empathize

10. Mind maps are used to _____ ideas.
 - a) Generate
 - b) Visualize
 - c) Structure
 - d) All of these

11. Which of these are not components of a mind map?
 - a) Branches
 - b) Arrows
 - c) Central idea
 - d) All of these

12. _____ is used with the objective of identifying needs that customers are often unable to articulate.
 - a) Mind mapping
 - b) Experience mapping
 - c) Story telling
 - d) Rapid concept development

13. Journey mapping maps which phase of activity of service for a customer?
 - a) Before a service
 - b) During a service
 - c) After a service
 - d) All of these

14. A prototype is a simple experimental model of a proposed solution used to
 - a) Test ideas
 - b) Validate ideas
 - c) Both of these
 - d) None of these

15. A Hypothesis is _____.
 - a) A wished for result that the researcher concludes the research with.
 - b) A complicated set of sentences that pulls variables into proposed complex relationships
 - c) A conjecture that is grounded in support background originating from secondary research
 - d) None of the above.

16. Which of these should be completed before you build something?
 - a) Do some research
 - b) Try something
 - c) Reflect on your solution
 - d) Define the problem

17. What is the usual order of problem solving process?
 - a) Try, Reflect, Prepare, Define
 - b) Prepare, Try, Reflect, Define
 - c) Try and Reflect
 - d) Define, Prepare, Try, Reflect

18. Which step of the problem solving process is this? I am thinking of the Pros and Cons to my idea?

a) Define	b) Prepare
c) Try	d) Reflect

19. Which of the below firm is associated the most with design thinking?

a) IKea	b) Ideo
c) Idea	d) IKeI

20. Design thinking typically helps in _____.
 - a) Innovation
 - b) Data analytics
 - c) Financial planning
 - d) Operational Efficiency

21. Which of the following well known consulting firms are offering design thinking is a solution?

a) McKinsey and Co.	b) BCG
c) Bain and Co.	d) All of these

22. During which step of the design process, do you test the solution or product?
 - a) Identify a problem or need.
 - b) Design a solution or product
 - c) Evaluate the solution or product
 - d) Implement the design

23. A company wants to build a new type of spaceship for transporting astronauts to the moon. What should the company do first?

a) Evaluate the design	b) Build a model
c) Test the prototype	d) Identify needs

24. An engineer has designed and built a prototype to improve the brake system of a car. What is the next step the engineer should take in the process?
 - a) Test the working prototype
 - b) Make sketches of the prototype
 - c) Evaluate the design for envision
 - d) Collect and analyze the test results

25. Learning Launches are designed to test the key underlying value-generating assumptions of a potential new growth initiative in the market place.
 - a) True
 - b) False
 - c) Cannot be said
 - d) None of these

26. A case study is
 - a) A research strategy
 - b) An empirical inquiry
 - c) a descriptive and exploratory analysis
 - d) All of these

27. MVP stands for
 - a) Minimum Viable Product
 - b) Maximum Viable Product
 - c) Most Viable Product
 - d) None of these

28. At what step do you want to complete the POV – point of view?
 - a) Empathy
 - b) Prototype
 - c) Define
 - d) Ideate

29. The purpose of MVP is not
 - a) Be able to test a product hypothesis with maximum resources.
 - b) Accelerate learning
 - c) Reduced wasted engineering hours
 - d) Get the product to early customers as soon as possible.

30. The three 'I's of design thinking do not include.
 - a) Interest
 - b) Implementation
 - c) Inspiration
 - d) Ideation

31. Collaborative team work is essential in design thinking for
 - a) Equal importance to all members
 - b) Solving multifaceted problems
 - c) Unbiased selection of ideas
 - d) Better failure management

32. Frank Robinson defined and coined the term
 - a) Design thinking
 - b) Mind mapping
 - c) MVP
 - d) Hypothesis

33. User persons are created during which phase of design process?
 - a) Design stage
 - b) Discover stage
 - c) Develop stage
 - d) none of these

34. _____ was IDEO's first expression of design thinking.
 - a) Deep-Design
 - b) Deep-Dive
 - c) Deep-Structure
 - d) Study-Dive

35. Human centric design was reinterpreted as an acronym to mean
 - a) Hear, Create, Deliver
 - b) Hear, Create, Design
 - c) Hold, Create, Deliver
 - d) Hear, Complete, Deliver

36. The ultimate goal of design thinking is to help you design better.
 - a) Services
 - b) Products
 - c) Experiences
 - d) All of these

37. Design thinking typically is a
 - a) Non-linear process
 - b) Linear process
 - c) Cyclic process
 - d) None of these

38. _____ is the way to narrow down the thoughts to reach at the final solution.
 - a) Convergent thinking
 - b) Divergent thinking
 - c) None of these
 - d) Both of these

39. Design thinking follows
 - a) Waterfall model
 - b) Agile methodology
 - c) Both of these
 - d) None of these

40. The goal of the prototype phase is
 - a) To understand what component of your idea didn't work.
 - b) To understand what component of your idea worked.
 - c) Both of these
 - d) None of these

41. BPM stands for
 - a) Building Product Management
 - b) Business Product Management
 - c) Business Process Management
 - d) Basic Product Management

42. Which is not a good interview strategy for the Empathy step?
 - a) Encourage the person to talk about experience
 - b) Encourage short answers that get right to the point
 - c) Ask follow-up questions to get more information
 - d) Try to uncover needs people may or may not be aware of

43. The final step in the design process is to _____.
 - a) Test
 - b) Define
 - c) Ideate
 - d) Empathize

44. Design thinking is best suited to addressing problems at the intersection of
- a) Business and society
 - b) Logic and emotion
 - c) Human needs and economic demands
 - d) All of these
45. _____ helps the design team and client to visualize and handle the design concept.
- a) Define
 - b) Ideate
 - c) Empathize
 - d) Prototype
46. In the create phase we do not
- a) Recognize existing knowledge in the challenge space.
 - b) Recruit participants for the codesign task from a diverse pool of those affected
 - c) Maintain awareness of sensitivities by avoiding judgements
 - d) Encouraging storytelling and expression
47. Design thinking is also known as
- a) Adaptable enquiry
 - b) Strategic design thinking
 - c) Transformation by design
 - d) All of these
48. Which of the following sequences is correct for waterfall methodology?
- a) Define – Design – Develop – Test – Deploy
 - b) Define – Develop – Design – Test – Deploy
 - c) Define – Design – Develop – Deploy – Test
 - d) Design -- Define – Develop -- Test – Deploy
49. When defining a problem, your problem statement should include a solution?
- a) True
 - b) False
50. A college is redesigning its website. Current students are the main users of the website. Which one of the below elements should definitely be on the website?
- a) College rules and regulations
 - b) Information on faculty members
 - c) Information about courses
 - d) Alumni details

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First Semester B.E./B.Tech. Degree Examination, June/July 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? Explain the sequence of technological developments leading to the shaping of the modern IOT.	5	L2	CO1	
	b.	Explain the different Network Topologies with neat diagram.	5	L2	CO2	
	c.	With the help of neat block diagram, explain ISO-OSI Layered Network Model.	10	L2	CO2	
OR						
Q.2	a.	Explain various enablers of IOT and the complex interdependencies among them.	10	L2	CO1	
	b.	Define: (i) M2M (ii) CPS (iii) IOE (iv) IOP. Brief the differences between IOT & M2M and IOT & WOT.	10	L1	CO1	
Module - 2						
Q.3	a.	Define sensors. Classify the various sensors based on power requirement.	8	L1	CO1	
	b.	Explain the functional blocks of a typical sensor node in IOT.	8	L2	CO2	
	c.	Define Actuators. Explain briefly the actuator types.	4	L1	CO3	
OR						
Q.4	a.	What are the major factors influences the choice of sensors in IOT based sensing solutions? Explain briefly.	8	L2	CO2	
	b.	Explain the different sensing categories based on the nature of the environment being sensed and the physical sensors.	6	L2	CO1	
	c.	Explain the different characteristics of actuators.	6	L2	CO1	
Module - 3						
Q.5	a.	Classify the IOT processing topologies and explain them briefly.	10	L2	CO2	
	b.	What is processing offloading? Explain the different data offloading methods.	10	L2	CO2	
OR						
Q.6	a.	What are the different data formats found in IOT network traffic streams? Explain in brief.	7	L2	CO2	
	b.	Briefly explain the different types of data to be processed based on the urgency of processing.	6	L2	CO2	
	c.	Explain the deciding factors for selecting a processor for the design of a sensor node in IOT devices.	7	L2	CO2	
Module - 4						
Q.7	a.	Define cloud computing. What are the advantages of cloud computing?	6	L1	CO1	
	b.	What is virtualization? Explain the advantages of virtualization.	7	L2	CO2	
	c.	Explain the different types of virtualization.	7	L2	CO2	

OR					
Q.8	a.	With a neat block diagram, explain the cloud model.	10	L2	CO2
	b.	With a neat diagram, explain the components used in an agricultural IOT.	10	L2	CO2
Module – 5					
Q.9	a.	With a neat diagram, explain the architecture of vehicular IOT.	6	L2	CO1
	b.	With a neat diagram, explain the components used in vehicular IOT.	8	L2	CO2
	c.	Explain the advantages of IOT in transportation.	6	L2	CO1
OR					
Q.10	a.	With a neat diagram, explain the components used in Healthcare IOT.	12	L2	CO2
	b.	Explain the advantages and risk of Healthcare IOT.	8	L2	CO1

* * * * *

10. A rumour in the city is a form of _____ communication
 a) Grapevine b) downward c) radial d) horizontal
11. How many IPAs are there?
 a) 46 b) 44 c) 21 d) 26
12. Do not boast _____ your wealth.
 a) for b) of c) in d) from
13. The ship was bound _____ India.
 a) to b) for c) of d) with
14. I prefer tea _____ cold drinks.
 a) to b) from c) than d) for
15. Tick the correct phonetic transcription of the word 'Sheep'.
 a) /ʃhip/ b) /chi:p/ c) /ʃi:p/ d) /hiip/
16. Tick the correct phonetic transcription of the word 'Judge'.
 a) /dʒAdʒ/ b) /dʒjuj/ c) /zuɪj/ d) /zudʒ/
17. Tick the correct phonetic transcription of the word 'These'.
 a) /ði:z/ b) /ðiz/ c) /theez/ d) /diiz/
18. Tick the correct phonetic transcription of the word 'Cheese'.
 a) /chiz/ b) /tʃiiz/ c) /tʃi:j/ d) /tʃi:z/
19. Tick the correct phonetic transcription of the word 'Teacher'.
 a) /ti:tʃə/ b) /ti:ch ə/ c) /tiitʃə/ d) /techrə/
20. Tick the correct phonetic transcription of the word 'Church'.
 a) /tʃ ɜ:tʃ/ b) /tʃ v tʃ ə/ c) /tʃ ɜ:ʃə/ d) /tʃ ə tʃ ə/
21. In which of the following words any silent letter is present.
 a) cup b) same c) Post d) pull
22. In which of the following words letter P is not is silent
 a) cupboard b) pneumonia c) coup d) None of these
23. Find collective noun in the sentence : 'He was part of the film crew'.
 a) He b) Film c) Crew d) None of these
24. Find abstract noun in : 'The theatre was engulfed in darkness'.
 a) Theatre b) Darkness c) Both A & B d) None of these
25. Someone's life history written by another writer _____
 a) autobiography b) bibliography c) biography d) story
26. Person who does not believe in the existence of God:
 a) Heretic b) Fanatic c) Atheist d) Theist
27. Tendency to favour one's relatives _____
 a) Favourisms b) Nepotism c) Expiation d) Spinster

28. One who totally abstains from drinking _____
 a) Heretic b) Teetotaler c) Pilgrim d) Stub
29. What is the emphatic form of pronoun 'I'?
 a) I b) Me c) Mine d) Myself
30. I have _____ my holidays in Kolkata. (Fill with correct verb.)
 a) spent b) spend c) spending d) spended
31. _____ Raktim or Sandip will receive you. (Fill with correct conjunction.)
 a) but b) either c) and d) none of these
32. What is the root word, in the word 'BILINGUAL'.
 a) bi b) bil c) lingual d) ingual
33. What is the full form of B2C?
 a) Business to Counter b) Business to Consumer
 c) Bank to Customer d) Brand to Consumer
34. What is the full form of CTO?
 a) Chief Transmission Officer b) Chief Telecom Officer
 c) Chief Technology Officer d) Chief Technology Operator
35. The correct contracted form of 'would not' is?
 a) would'nt b) wouldnot c) wouldn't d) wouldnt'
36. Tick the minimal pair with medial sound difference.
 a) mug-jug b) ship-sheep c) eab-cap d) pit-bit
37. Tick the minimal pair with final sound difference.
 a) loop-loot b) day-they c) mat-sat d) pull-pool
38. She was very fond of chocolates. (Tick suitable Question Tag.)
 a) Wasn't she? b) Do I? c) Isn't it? d) Isn't she?
39. Have some more cold coffee. (Tick suitable Question Tag.)
 a) Have you? b) Will/would you? c) Won't you? d) Weren't you?
40. Punctilious. (Tick the word having closest meaning.)
 a) meticulous b) casual c) Final d) none of these
41. Opulence. (Tick the word having closest meaning.)
 a) poverty b) penury c) affluence d) indigence
42. Mr. Chatterjee is _____ MLA. Which article will be suitable to fill this blank?
 a) A b) An c) The d) None
43. My brother studies in _____ university. Which article will be suitable to fill this blank?
 a) A b) An c) The d) None of the above
44. He did not wash the clothes. Tick the present progressive form if the sentence
 a) He is not washing the clothes. b) He will not be washing the clothes.
 c) He was not washing the clothes. d) He has not washed the clothes.

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First/Second Semester B.E/B.Tech. Degree Examination, June/July 2023

ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ - Samskruthika Kannada

(COMMON TO ALL BRANCHES)

Time: 1 hrs.]

[Max. Marks: 50

ಸೂಚನೆಗಳು

1. ಎಲ್ಲ ಋಂ ಪ್ರಶ್ನೆಗಳಿಗೂ ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ ಒಂದು ಅಂಕ.
2. ಓ.ಎಂ.ಆರ್ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ಯು.ಎಸ್.ಎನ್ ಸಂಖ್ಯೆ ಹಾಗೂ ಪಶ್ಚಿ 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. ಕಬ್ಬಿಗರ ಕಾವ್ಯ ಇದರ ಕರ್ತೃ ಯಾರು?
a) ಆಂಡಯ್ಯ b) ಹಂಪನಾ c) ಪಂಪ d) ಬನವಣ್ಣ
2. ವಿಜಯನಗರ ಕಾಲದಲ್ಲಿ ಧರ್ಮಸಮನ್ವಯತೆಯನ್ನು ಕಾಪಾಡಿದ ರಾಜ ಯಾರು?
a) ಕೃಷ್ಣದೇವರಾಯ b) ಬುಕ್ಕರಾಯ c) ದೇವರಾಯ d) ಹಕ್ಕರಾಯ
3. ಕನ್ನಡ ನಾಡಿನ ಶಾಸನಗಳು ಮುಕ್ಯಾಲು ಪಾಲು ಯಾವುದರ ವಿವರಣೆ ಮತ್ತು ಪ್ರಶಸ್ತಿಗೆ ಮೀಸಲಾಗಿದೆ?
a) ದಾನ b) ವೀರ c) ಸಾಹಿತ್ಯ d) ಭಾಷೆ
4. ಸುಮಾರು 1800 ರಲ್ಲಿಯೇ ಕರ್ನಾಟಕ ಏಕೀಕರಣದ ಅಭಿಪ್ರಾಯವನ್ನು ಬ್ರಿಟಿಷ್ ಹಿರಿಯ ಅಧಿಕಾರಿಗಳಿಗೆ ತಿಳಿಸಿದ್ದವರು ಯಾರು?
a) ವಾಲ್ಟರ್ b) ಮಾರ್ಕೆಟ್ಬನ್ c) ಥಾಮಸ್ ಮನ್ರೋ d) ಮೆಕಾಲೆ.

5. ಕರ್ನಾಟಕ ಗತವೈಭವ ಗ್ರಂಥದ ಲೇಖಕರು ಯಾರು?
a) ಕುವೆಂಪು b) ಆಲೂರುವೆಂಕಟರಾಯರು c) ಮಾಸ್ತಿ d) ಜಿ.ಎಸ್. ಎಸ್.
6. 1973 ನವೆಂಬರ್ 1 ರಂದು ಮೈಸೂರು ರಾಜ್ಯಕ್ಕೆ -----ಎಂದು ನಾಮಕರಣ ಮಾಡಲಾಯಿತು?
a) ಮೈಸೂರು b) ನವಕರ್ನಾಟಕ c) ನವಮೈಸೂರು d) ಕರ್ನಾಟಕ
7. ಕನ್ನಡಭಾಷೆ ಯಾವ ಭಾಷಾ ವರ್ಗಕ್ಕೆ ಸೇರಿದೆ?
a) ಸೆಮಿಟಿಕ್ b) ತುರೇನಿಯನ್ c) ದ್ರಾವಿಡ d) ಇಂಡೋಆರ್ಯನ್
8. ಎಷ್ಟನೇ ಅನುಚ್ಛೇದದ ಅನುಸಾರ ಆಯಾ ರಾಜ್ಯಗಳಲ್ಲಿ ಬಳಕೆಯಾಗುವ ಭಾಷೆಗಳನ್ನೇ ಆಡಳಿತ ಭಾಷೆಯೆಂದು ತೀರ್ಮಾನಿಸಲಾಯಿತು.
a) 343 b) 344 c) 345 d) 346
9. ಕನ್ನಡ ಭಾಷೆಯ ಲಿಪಿಯನ್ನು ಲಿಪಿಗಳ ರಾಣಿ ಎಂದು ಕರೆದವರು ಯಾರು?
a) ಸರೋಜಿನಿ ನಾಯ್ಡು b) ಮದರ್ ತೆರೆಸಾ
c) ವಿನೋಬಾ ಭಾವೆ d) ಝಾನ್ಸಿ ರಾಣಿ ಲಕ್ಷ್ಮೀಬಾಯಿ
10. ಕರ್ನಾಟಕದ ಆಡಳಿತ ಭಾಷೆ
a) ಇಂಗ್ಲೀಷ್ b) ಕನ್ನಡ c) ತುಳು d) ಕೊಂಕಣಿ
11. ಜೇಡರ ದಾಸಿಮಯ್ಯನ ವಚನಗಳ ಅಂಕಿತ ಯಾವುದು?
a) ಗುಹೇಶ್ವರ b) ಕೂಡಲಸಂಗಮದೇವಾ c) ರಾಮನಾಥ d) ಚೆನ್ನಮಲ್ಲಿಕಾರ್ಜುನ
12. ಹುಲಿಗಂಜಿ ಹುತ್ತವ ಹೊಕ್ಕಡೆ ಏನು ತಿಂಬುದ ಮಾಬುದೆ?
a) ಸರ್ಪ b) ಆನೆ c) ಕರ್ಮ d) ಮೃತ್ಯು
13. ಕರಿಘನ ಅಂಕುಶ ಕಿರಿದೆನ್ನಬಹುದೆ ಬಾರದಯ್ಯ ವಚನದ ವಚನಕಾರರು ಯಾರು?
a) ಅಕ್ಕಮಹಾದೇವಿ b) ಆಯ್ಕೆ ಲಕ್ಕಮ್ಮ c) ಆಯ್ಕೆ ಮಾರಯ್ಯ d) ಬಸವಣ್ಣ

14. ಕುರುಡ ಕಣ್ಣ ಕಾಣಲರಿಯದೆ ಏನನ್ನು ಬಯ್ಯನು?
 a) ಶಶಿಯು b) ಕನ್ನಡಿಯು c) ಕರ್ಮವ d) ರವಿಯು
15. ಕಾಯಕವೇ ಕೈಲಾಸವಾದ ಕಾರಣ ಅಮರೇಶ್ವರ ಲಿಂಗವಾಯಿತ್ತಾದಡು ----- ದೊಳಗು.
 a) ಮನಸ್ಸು b) ಕರ್ಮ c) ಕಾಯಕ d) ಕನ್ನಡಿ
16. ಹಲವು ಕಾಲ ಕಲ್ಲು ನೀರೊಳಗಿದ್ದರೇನು ಬಲು ನೆನೆದು ಈ ಶಿಲೆಯಾಗುವುದೇ?
 a) ಅಮೃತ b) ಅಮರ್ತು c) ವ್ಯರ್ಥ d) ಯಾವುದು ಅಲ್ಲ.
17. ತಲ್ಲಣಿಸದಿರು ಕಂಡ್ಯ ತಾಳು ಮನವೇ ಕೀರ್ತನೆಯ ಕೀರ್ತನಕಾರರು ಯಾರು?
 a) ಪುರಂದರದಾಸರು b) ಕನಕದಾಸರು c) ಶಿಶುನಾಳ ಶರೀಫರು d) ಶಿವಯೋಗಿ
18. ಕುಂಬಾರಕಿ ಮೂರು ಕಾಸಿಗೊಂದು ಏನನ್ನು ಮಾರುತ್ತಾಳೆ?
 a) ಕುಡಕಿ b) ಗಡಿಗೆ c) ಮಡಿಕೆ d) ಗುಡಾಣ
19. ಪುರಂದರ ದಾಸರ ವಚನಗಳ ಅಂಕಿತನಾಮ ಯಾವುದು?
 a) ರಾಮನಾಥ b) ವಿಠಲ c) ಗುಹೇಶ್ವರ d) ಪುರಂದರ ವಿಠಲ
20. ಕುಂಬಾರಕಿ ಮಡಿಕೆ ಮಾಡಲು ಬಳಸುವ ಮಣ್ಣನ್ನು ಶರೀಫರು ಯಾವುದಕ್ಕೆ ಹೋಲಿಸಿದ್ದಾರೆ?
 a) ಚೆನ್ನ b) ಮುತ್ತು c) ರತ್ನ d) ಲವಣ
21. ಮಂಕುತಿಮ್ಮನ ಕಗ್ಗ ಕಾವ್ಯಭಾಗದ ಕವಿ ಯಾರು?
 a) ಬಿ.ಎಂ.ಶ್ರೀ b) ತೀ.ನಂ. ಶ್ರೀ c) ಜಿ.ಎಸ್. ಎನ್ d) ಡಿವಿಜಿ.
22. ಇರುವೆಗಳು ಕಟ್ಟಿದ ಗೂಡು ಯಾವುದಕ್ಕೆ ಹುತ್ತವಾಗುವುದು?
 a) ಇಲಿ b) ಬಾವುಲಿ c) ಛಿಷನರ್ಪ d) ಮುಂಗುಸಿ

23. ಬೇಂದ್ರೆಯವರ ಯಾವ ಕವನ ಸಂಗ್ರಹಕ್ಕೆ ಜ್ಞಾನಪೀಠ ಪ್ರಶಸ್ತಿ ಬಂದಿದೆ?
 a) ಮೂಕಜ್ಜಿಯ ಕನಸುಗಳು
 b) ನಾಕುತಂತಿ
 c) ಸಮಗ್ರ ಸಾಹಿತ್ಯ
 d) ಸಾಹಿತ್ಯ
24. ಸಾಬಾಣ ಪದದ ಅರ್ಥವೇನು?
 a) ಸಾಬೂನು
 b) ಸರಕು
 c) ಸಂಯಮ
 d) ಯಾವುದು ಅಲ್ಲ
25. ಕಾಲಿಗೆ ಬಿದ್ದವರ ಯಾವುದು ತುಳಿಯುತ್ತಲಿತ್ತು?
 a) ಹಣ
 b) ಕಾಂಚಾನ
 c) ದುಡ್ಡು
 d) ಕುರುಡ ಕಾಂಚಾಣ
26. ಕುವೆಂಪುರವರ ಆತ್ಮಕಥೆ ಯಾವುದು?
 a) ಗಿರಿಜನ
 b) ನೆನಪಿನ ದೋಣಿ
 c) ಗಿರಿಜನ ಪಯಣ
 d) ಯಾವುದು ಅಲ್ಲ
27. ಮೋಹಿನಿಗೆ ಮರುಳಾದವರು ಯಾರು?
 a) ಮಾನವನು
 b) ಮಹಿಳೆಯರು
 c) ಮೂರ್ಖದಾನವರು
 d) ಯಾರು ಅಲ್ಲ.
28. ಭಗವಂತ ಮಾನವರಿಗೆ ಕಾಣಿಸಿಕೊಂಡರೆ, ಮೊದಲು ಅನ್ನದ ರೂಪದಲ್ಲಿ ಕಾಣಿಸಿಕೊಳ್ಳಬೇಕು ಎಂದು ಹೇಳಿದವರು ಯಾರು?
 a) ಗಾಂಧೀಜಿ
 b) ನೆಹರು
 c) ವಿಶ್ವೇಶ್ವರಯ್ಯ
 d) ಮೂರ್ತಿರಾವ್
29. ಯಾರು ಹುಟ್ಟಿದ ದಿನವನ್ನು ಇಂಜಿನಿಯರ್ ದಿನವನ್ನಾಗಿ ಆಚರಿಸಲಾಗುತ್ತಿದೆ?
 a) ಆರ್ಕಿಮಿಡಿಸ್
 b) ನಿಕಲೋ ಚೆಸ್ಸಾ
 c) ಬ್ರುನೇಲ್
 d) ವಿಶ್ವೇಶ್ವರಯ್ಯ
30. 56ನೇ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪರಿಷತ್ತು ಯಾವಾಗ ನಡೆಯಿತು?
 a) 1983
 b) 1984
 c) 1985
 d) 1986
31. ಬಟ್ಟೆಯ ಮೇಲಿನ ಮುದ್ರಣ ಕಲೆಗೆ ಯಾವ ದೇಶವು ಮೂಲ ನೆಲೆಯಾಗಿದೆ?
 a) ಭಾರತ
 b) ಇಂಗ್ಲೆಂಡ್
 c) ಫ್ರಾನ್ಸ್
 d) ಅಮೇರಿಕಾ
32. ಡಾ. ಕರೀಗೌಡ ಬೀಚನಹಳ್ಳಿ ಅವರ ಕಾದಂಬರಿ ಯಾವುದು?
 a) ಮಳೆಬಿಲ್ಲು
 b) ಮಳೆ
 c) ಕಾಮನಬಿಲ್ಲು
 d) ಮಳೆಕೋಗಿಲೆ

33. ಭಾರತದಲ್ಲಿ ಬೇರೆ ಬೇರೆ ಬಣ್ಣಗಳನ್ನು ನೀಡುವ ಸುಮಾರು ಎಷ್ಟು ಗಿಡಗಳಿವೆ ಎಂದು ಅಂದಾಜು ಮಾಡಲಾಗಿದೆ?
a) 200 b) 300 c) 400 d) 500
34. ಎಷ್ಟು ವರ್ಷಗಳಿಂದ ಭಾರತೀಯ ಕರಕುಶಲ ಕಲೆಗಳಿಗೆ ಅಪಾರ ಬೇಡಿಕೆ ಇದೆ?
a) ಕ್ರಿ. ಪೂ. 2300 b) ಕ್ರಿ. ಶ. 2300 c) ಕ್ರಿ. ಪೂ. 2500 d) ಕ್ರಿ. ಶ 2500
35. ಪ್ರಸ್ತುತ ದಿನಗಳಲ್ಲಿ ಇದನ್ನು ತಯಾರಿಸಲು ಯಂತ್ರಗಳೇ ಇಲ್ಲ.
a) ಬಿದಿರಿನ ಬುಟ್ಟಿ b) ಬುಟ್ಟಿ c) ಬೆದರಿನಬುಟ್ಟಿ d) ಬಿಟ್ಟಿ
36. ವಸುಧೇಂದ್ರ ಅವರ ಕಾದಂಬರಿ ಯಾವುದು?
a) ಹರಿಚಿತ್ತ b) ಸತ್ಯ c) ಚಿತ್ತ d) ಹರಿಚಿತ್ತ ಸತ್ಯ
37. ಗೋಪಣ್ಣ ಮಾಸ್ತರರ ಸ್ನೇಹಿತನ ಹೆಸರೇನು?
a) ಕಾಸಿಂ ಸಾಬರು b) ಸಾಹೇಬ್ c) ಕರೀಂಖಾನ್ d) ಖಾನ್ ಸಾಹೇಬ್
38. ಪ್ರಹ್ಲಾದನ ತಾಯಿಯ ಹೆಸರೇನು?
a) ರುದ್ರಮ್ಮ b) ಕಾಳಮ್ಮ c) ರುಕ್ಮಿಣಿ d) ತಾಯಮ್ಮ
39. ಪ್ರತಿವರ್ಷ ಮೊಹರಂ ದಿನ ದರ್ಗಾಕ್ಕೆ ಹೋಗಿ ಯಾವ ದೇವರಿಗೆ ಸೇವೆಸಲ್ಲಿಸುವ ಸಂಪ್ರದಾಯವನ್ನು ಮಾಸ್ತರರು ಧೂ ಧಿಸಿಕೊಂಡಿದ್ದರು?
a) ಪೀಲು b) ಪೀರ್ c) ಪೀರು d) ಪೀರು
40. ಕಾಸಿಂಸಾಬರ ಮಗನ ಹೆಸರೇನು?
a) ಇಸ್ಮಲ್ b) ಇಸ್ಮಾಲ್ c) ಇಮ್ರಾನ್ d) ಇನ್ಸಾಯಿಲ್
41. ಯುಗಾದಿ ಕಥೆಯಲ್ಲಿ ಬರುವ ದಾದಿ ಯಾರು?
a) ರಮ್ಯ b) ರಾಧಿಕಾ c) ರಾವಣ d) ರಾಧಾ

42. ರುಕ್ಮಿಣಮ್ಮ ಸತ್ತ ಏಷು ವರ್ಷಗಳು ಕಳೆದಿವೆ?
a) 10 b) 15 c) 20 d) 25
43. ಹಾಡುವಳ್ಳಗೆ ಹಿಂದೆ ಇದ್ದ ಹೆಸರೇನು?
a) ಸಂಗೀತಪುರ b) ಸಂಗೀತವಳ್ಳಿ c) ಸಂಗೀತಹಳ್ಳಿ d) ಸಂಗೀತನಗರ
44. ಡಾ. ಹಿ.ಚಿ ಬೋರಲಿಂಗಯ್ಯನವರ ಮಾರ್ಗದರ್ಶಕರು ಯಾರು?
a) ಕರಿಯ b) ಕುಪ್ಪಯ್ಯ c) ಕುಪ್ಪಯ ಕರಿಯ d) ಕಾಳ
45. ಮೆಗಾನೆ ಂಬ ಪ್ರದೇಶದಲ್ಲಿ ವಾಸವಾಗಿರುವ ಜನಾಂಗ ಯಾವುದು?
a) ಕುಣವಿ b) ಕುಣಬಿ c) ಕುಣವ d) ಕುಣಬ
46. ಹಾಡಿಯ ಯಜಮಾನ ಯಾರು?
a) ಯಂಕ b) ಯಶು c) ಯಶ d) ಯಂಕು
47. ಯಂಕುವಿನ ಪೂರ್ವಜರು ಯಾವ ಕಡೆಯವರು?
a) ಗೋವಾ b) ಕರ್ನಾಟಕ c) ಕೇರಳ d) ತಮಿಳುನಾಡು
48. ಡಾ. ಹಿ.ಚಿ ಬೋರಲಿಂಗಯ್ಯನವರ ಪ್ರವಾಸ ಕಥನ ಕೃತಿ ಯಾವುದು?
a) ಗಿರಿಜನ b) ಗಿರಿಜನರು c) ಗಿರಿಜನನಾಡಿಗೆ ಪಯನ d) ಯಾವುದು ಅಲ್ಲ
49. ಮೆಗಾನೆ ಪರ್ವತದ ಏತ್ತರ
a) 6 ಸಾವಿರ ಅಡಿ b) 5 ಸಾವಿರ ಅಡಿ c) 5 ಕಿ.ಮೀ d) 5 ಅಡಿ
50. ಡಾ. ಹಿ.ಚಿ ಬೋರಲಿಂಗಯ್ಯನವರ ಸ್ನೇಹಿತನ ಹೆಸರೇನು?
a) ನಿಂಗೇಗೌಡ b) ರಾಮೇಗೌಡ c) ಭದ್ರೇಗೌಡ d) ಲಿಂಗೇಗೌಡ

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21. avaru _____ gurugaLaa! (Choose the right word).
a) Enu b) yaake c) nimma d) yaava
22. avanu nimma _____?
a) akkana b) geLeyana c) tangina d) ammana
23. Krishnanu arjunanige _____
a) aNNa b) Saarathi c) geLeya d) maava
24. naaLe niinu manege _____
a) baa b) Enu c) yaava d) bara
25. nanage Tea _____
a) kuDi b) tinnu c) bantu d) beaDa
26. Taste _____
a) baNNa b) sihi c) Ruchi d) kahi
27. "Salty" word in kannada,
a) taaja b) uppu c) Kaara d) huLi
28. "clean" meaning in kannada,
a) Subhra b) asubhra c) shucha d) dark
29. He is my son _____
a) adu nanna magu b) avanu nanna maga
c) nanna geLeya d) avanu maga
30. _____ yaava Uuru?
a) nanna b) namma c) idu d) indu
31. 'Mane' in kannada means,
a) Mouse b) Spouse c) Home d) Browse
32. Choose the suitable kannada word for 'easy',
a) Nasta b) Ista c) Kashta d) sulabha
33. Choose the correct kannada word for 'brother'?
a) amma b) aNNa c) appa d) ajja
34. avanu _____ huDuga.
a) Ondu b) yaake c) OLLeYa d) tumba
35. niinu means _____
a) you b) your c) them d) they
36. avaLu _____
a) I b) We c) You d) She

37. That, means _____.
a) Enu b) yaavadu c) adu d) yaake
38. This is house _____.
a) idu Enu b) idu building c) idu guDi d) idu mane
39. "Good morning" means _____.
a) Shubhodaya b) Shubha vagali c) Shubha rathri d) Shubha sanje
40. This is story _____.
a) idu paaTha b) idu kathe c) idu drama d) idu kavana
41. nimma hesaru _____.
a) Enu b) yaaru c) yaavdu d) naavu
42. Choose correct English letter for the kannada word "father".
a) amma b) aNNa c) appa d) Chikkappa
43. "Identification" means _____.
a) mark b) gurutu c) chinne d) land
44. Who are you ? Means.
a) yaaru niinu b) yaaru nimma c) niinu d) niinu yaaru?
45. Kaaleju illinda _____ duura ide?
a) heege b) eshtu c) idu d) heenu
46. Do you want rice? Means _____.
a) ninage Uta beaka b) ninage anna c) ninage anna beaka d) aNNa beaka
47. He is my friend _____.
a) ivanu geLeya b) snehitha c) OLLeya geLeya d) ivanu nanna geLeya
48. "All the best" word in kannada _____.
a) Shubhavaagali b) VandanegaLu c) Shubhadina d) Shubhoodaya
49. Which is your place? _____.
a) Uuru yaavudu? b) nimma Uuru yaavudu c) nimma Uuru d) yaavudu Uuru
50. What is this? _____.
a) adu Enu? b) idu yaake? c) idu Enu? d) adu esTu?

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