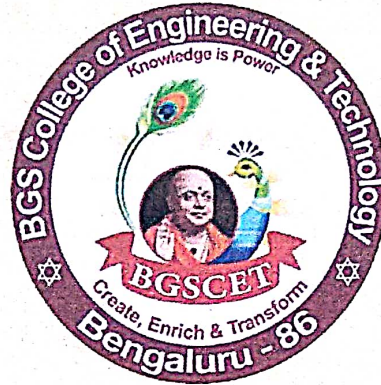
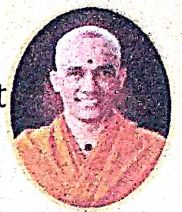




|| Jai Sri Gurudev ||

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

BGS College of Engineering and Technology



VTU - Dec. 2023 /Jan.2024 - I Sem Question Papers

Physics Cycle





Physics Cycle 2022-Scheme

Theory Question Papers for Ist Semester

Sl,No	Name of the Subjects
1	Mathematics for CSE Stream-01
2	Mathematics for CSE Stream-02
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
12	Applied Physics for CSE Stream
13	Introduction to cyber Security

CBCS SCHEME

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1 | M | P | 2 | 3 | A | I | 0 | 6 | 2

BMATS101

First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024 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 notation prove that $\tan\phi = r \cdot \frac{d\theta}{dr}$.	6 ✓	L2	CO1
	b.	Find the angle between the curves $r = 6\cos\theta$ and $r = 2(1 + \cos\theta)$.	7	L2	CO1
	c.	Find the radius of curvature for the Folium of De-Cartes $x^3 + y^3 = 3axy$ at the point $\left(\frac{3a}{2}, \frac{3a}{2}\right)$ on it.	7 ✓	L2	CO1
OR					
Q.2	a.	Show that the curves $r = a(1 + \sin\theta)$ and $r = a(1 - \sin\theta)$ cut each other orthogonally.	8	L2	CO1
	b.	Find the pedal equation of $r^n = a(1 + \cos n\theta)$.	7	L2	CO1
	c.	Using modern mathematical tool, write a program/code to plot the curve sine and cosine curve.	5	L3	CO5
Module - 2					
Q.3	a.	Using Maclaurin's series, expand $\sqrt{1 + \sin 2x}$ in powers of x upto the terms x^4 .	7	L2	CO1
	b.	If $U = e^{ax+by} f(ax - by)$, prove that $b \frac{\partial U}{\partial x} + a \frac{\partial U}{\partial y} = 2abU$.	6	L2	CO1
	c.	Find the extreme values of the function $\sin x + \sin y + \sin(x + y)$.	7	L3	CO1
OR					
Q.4	a.	Evaluate the $\lim_{x \rightarrow 0} \left[\frac{a^x + b^x + c^x + d^x}{4} \right]^{\frac{1}{x}}$.	8 ✓	L2	CO1
	b.	If $U = f(2x - 3y, 3y - 4z, 4z - 2x)$, prove that $\frac{1}{2} \frac{\partial U}{\partial x} + \frac{1}{3} \frac{\partial U}{\partial y} + \frac{1}{4} \frac{\partial U}{\partial z} = 0$.	7 ✓	L2	CO1
	c.	Using modern mathematical tool, write a program/code to evaluate $\lim_{x \rightarrow \infty} \left(1 + \frac{1}{x}\right)^x$.	5 ✓	L3	CO5
Module - 3					
Q.5	a.	Solve $\frac{dy}{dx} + \frac{y}{x} = x^2 y^6$.	6	L2	CO2
	b.	Find the orthogonal trajectories of the family $r = a(1 + \sin\theta)$.	7 ✓	L3	CO2
	c.	Find the solution of the equation $x^2(y - Px) = P^2 y$ by reducing into Clairaut's form using the substitution $X = x^2, Y = y^2$.	7	L2	CO2
OR					

Q.6	a.	Solve $(8xy - 9y^2)dx + 2(x^2 - 3xy)dy = 0$.	6	L2	CO2
	b.	A voltage Ee^{-at} is applied at $t = 0$ to a circuit of inductance L and resistant R . Find the current at any time t given that the current is initially zero when $t = 0$.	7	L3	CO2
	c.	Solve $x(y')^2 - (2x + 3y)y' + 6y = 0$.	7	L2	CO2
Module - 4					
Q.7	a.	i) Find the last digit in 7^{289} . ii) Find the remainder when $135 \times 74 \times 48$ is divided by 7.	7	L2	CO3
	b.	Solve the linear congruence $6x \equiv 15 \pmod{21}$.	6	L2	CO3
	c.	Using Wilson's theorem, show that $4(29)! + 5!$ is divisible by 31.	7	L2	CO3
OR					
Q.8	a.	Solve the set of simultaneous congruences $x \equiv 5 \pmod{3}$, $x \equiv 2 \pmod{5}$, $x \equiv 1 \pmod{11}$.	7	L2	CO3
	b.	Solve $7x + 3y \equiv 10 \pmod{16}$, $2x + 5y \equiv 9 \pmod{16}$.	6	L2	CO3
	c.	Show that $2^{340} - 1$ is divisible by 31, using Fermat's little theorem.	7	L2	CO3
Module - 5					
Q.9	a.	Find the rank of the matrix $\begin{bmatrix} 1 & 2 & 4 & 3 \\ 2 & 4 & 6 & 8 \\ 4 & 8 & 12 & 16 \\ 1 & 2 & 3 & 4 \end{bmatrix}$	6	L2	CO4
	b.	Solve the system of equation by using Gauss-Jordan method. $x + y + z = 8$, $-x - y + 2z = -4$, $3x + 5y - 7z = -14$	7	L3	CO4
	c.	Using Rayleigh's power method, find the largest eigen value and the corresponding eigen vector of the matrix $A = \begin{bmatrix} 2 & -1 & 0 \\ -1 & 2 & -1 \\ 0 & -1 & 2 \end{bmatrix}$ by taking initial vector as $[1 \ 1 \ 1]^T$. Perform 6 iterations.	7	L3	CO4
OR					
Q.10	a.	Solve the system of equation by using Gauss elimination method. $x + 2y + z = 3$, $2x + 3y + 3z = 10$, $3x - y + 2z = 13$	8	L3	CO4
	b.	Solve the following system of equations by Gauss-Seidal method $20x + y - 2z = 17$, $3x + 20y - z = -18$, $2x - 3y + 20z = 25$	7	L3	CO4
	c.	Using modern mathematical tool, write a programme/code to test the consistency of the equation: $x + 2y - z = 1$, $2x + y + 4z = 2$, $3x + 3y + 4z = 1$	5	L3	CO5

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BMATS201

Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024 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 $\int_{-1}^z \int_{x-z}^{x+z} \int_0^x (x+y+z) dy dx dz$.	7	L2	CO1
	b.	Evaluate $\int_0^\infty \int_0^\infty e^{-(x^2+y^2)} dx dy$ by changing into polar coordinates.	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 $\int_0^1 \int_y^{\sqrt{y}} (x^2y + xy^2) dx dy$ by changing the order of integration.	7	L3	CO1
	b.	Show that $\int_0^{\pi/2} \frac{d\theta}{\sqrt{\sin \theta}} \times \int_0^{\pi/2} \sqrt{\sin \theta} d\theta = \pi$	7	L2	CO1
	c.	Using mathematical tools, write the code to find the area of an ellipse by double integration $A = 4 \int_0^a \int_0^{\frac{b}{a}\sqrt{a^2-x^2}} dy dx$, taking $a = 4$, $b = 6$.	6	L3	CO5
Module – 2					
Q.3	a.	Find the directional derivative of $\phi = 4xz^3 - 3x^2y^2z$ at $(2, -1, 2)$ along vector $2i - 3j + 6k$.	7	L2	CO2
	b.	Show that the vector $\vec{F} = \frac{xi + yj}{x^2 + y^2}$ is both solenoidal and irrotational.	7	L2	CO2
	c.	Prove that the spherical coordinate system is orthogonal.	6	L3	CO2
OR					
Q.4	a.	Find the angle between the surfaces $x^2 + y^2 + z^2 = 9$ and $z^2 + y^2 - x = 3$ at $(2, -1, 2)$.	7	L2	CO2
	b.	Express the vector $\vec{A} = zi - 2xj + yk$ in cylindrical coordinates.	7	L2	CO2
	c.	Using mathematical tools, write the code to find the curl of $\vec{F} = x^2yz\hat{i} + y^2zx\hat{j} + z^2xy\hat{k}$.	6	L3	CO5
1 of 3					

Module - 3

Q.5	a.	Prove that the subset $W = \{(x, y, z) : ax + by + cz = 0; x, y, z \in \mathbb{R}\}$ of the vector space \mathbb{R}^3 is a subspace of \mathbb{R}^3 .	7	L2	CO3
	b.	Determine the following vectors are linearly independent or not, $x_1 = (2, 2, 1)$, $x_2 = (1, 3, 7)$ and $x_3 = (1, 2, 2)$ in \mathbb{R}^3 .	7	L2	CO3
	c.	Show that the function $T : \mathbb{R}^2 \rightarrow \mathbb{R}^3$ given by $T(x, y) = (x + y, x - y, y)$ is a linear transformation.	6	L2	CO3

OR

Q.6	a.	Determine whether the vectors $v_1 = (1, 2, 3)$, $v_2 = (3, 1, 7)$ and $v_3 = (2, 5, 8)$ are linearly dependent or linearly independent.	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	L2	CO3
	c.	Consider the vectors $u = (1, 2, 4)$, $v = (2, -3, 5)$, $w = (4, 2, -3)$ in \mathbb{R}^3 . Find: i) $\langle u, v \rangle$ ii) $\langle u, w \rangle$ iii) $\langle v, w \rangle$ iv) $\langle (u + v), w \rangle$	6	L2	CO3

Module - 4

Q.7	a.	Find an approximate value of the root of the equation $x^3 - x^2 - 1 = 0$, using the Regula-Falsi method upto four decimal places of accuracy, where root lies between 1.4 and 1.5.	7	L2	CO4
	b.	Using Newton's divided difference formula evaluate $f(4)$ from the following:	7	L2	CO4
	c.	Evaluate $\int_0^6 \frac{1}{1+x^2} dx$ by using Trapezoidal rule by taking 7 ordinates.	6	L3	CO4

OR

Q.8	a.	Find an approximate root of the equation $x \log_{10} x - 1.2 = 0$ corrected to five decimal places where root lies near 2.5 by Newton-Raphson method.	7	L2	CO4
	b.	The area A of a circle of diameter d is given for the following values. Calculate the area of a circle of diameter 82 by using Newton's forward interpolation formula.	7	L2	CO4
	c.	Use Simpson's $1/3^{\text{rd}}$ rule to find $\int_0^{0.6} e^{-x^2} dx$ by taking seven ordinates.	6	L2	CO4

Module - 5

Q.9	a.	Find by Taylor's series method the value of y at $x = 0.1$ to five places of decimals from $\frac{dy}{dx} = x^2y - 1$ with an initial condition $y(0) = 1$.	7	L2	CO4
	b.	Using the Runge-Kutta method of fourth order solve $\frac{dy}{dx} = \frac{y^2 - x^2}{y^2 + x^2}$ with $y(0) = 1$ at $x = 0.2$ taking $h = 0.2$.	7	L2	CO4
	c.	Given that $\frac{dy}{dx} = x^2(1 + y)$ and $y(1) = 1$, $y(1.1) = 1.233$, $y(1.2) = 1.548$ and $y(1.3) = 1.979$. Compute y at $x = 1.4$ by applying Milne's method.	6	L2	CO4
OR					
Q.10	a.	Using modified Euler's method, solve $\frac{dy}{dx} = 3x + \frac{y}{2}$ at $x = 0.1$ corrected to four decimal places by taking $h = 0.1$, with initial condition $y(0) = 1$.	7	L2	CO4
	b.	Given that $\frac{dy}{dx} = x - y^2$ and $y(0) = 0$, $y(0.2) = 0.02$, $y(0.4) = 0.0795$, $y(0.6) = 0.1762$. Compute $y(0.8)$ by Milne's method.	7	L2	CO4
	c.	Using mathematical tools, write the code to find the solution of $\frac{dy}{dx} = 1 + \frac{y}{x}$ at $y(2)$ taking $h = 0.2$. Given that $y(1) = 2$ by Runge-Kutta method of 4 th order.	6	L3	CO5

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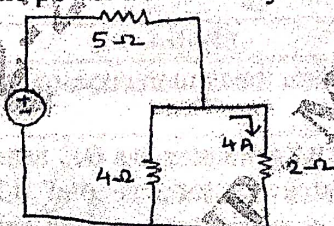
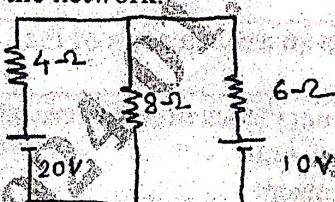
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First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024 Introduction to Electrical Engineering

Time: 3 hrs.

Max. Marks: 100

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

Module - 1			M	L	C
Q.1	a.	Explain nuclear power generation with the help of neat block diagram.	7	L1	CO1
	b.	In the circuit shown find the power delivered by the source. <div style="text-align: center;">  <p style="text-align: center;">Fig.Q.1(b)</p> </div>	7	L3	CO1
	c.	State and explain Ohm's law with its limitations.	6	L1	CO2
OR					
Q.2	a.	State and explain Kirchoff's current and voltage laws.	7	L1	CO1
	b.	Explain the general structure of electrical power system, using single line diagram.	7	L1	CO1
	c.	Calculate the currents in the network. <div style="text-align: center;">  <p style="text-align: center;">Fig.Q.2(c)</p> </div>	6	L3	CO2
Module - 2					
Q.3	a.	Obtain the behavior of voltage, current and power in a pure resistor connected to 1-φ A.C. supply. Draw the voltage, current and power waveforms.	7	L2	CO2
	b.	A current of average value 18.019A is flowing in a circuit to which a voltage of peak value 141.42V is applied. Determine: i) Impedance in polar form. ii) rms values of voltage and current. iii) Power consumed by the circuit. Assume voltage lags current by 30°.	7	L3	CO2

	c.	Define following terms related to sinusoidal waveform of AC parameter: i) Instantaneous value ii) Amplitude iii) Frequency iv) Time period v) Form factor vi) Peak factor.	6	L1	CO1
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OR

Q.4	a.	Derive the equation of the power consumed by R-L series circuit. Also draw the waveforms of voltage current and power.	7	L3	CO2
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	b.	A circuit consist of a resistance of 20Ω , an inductance of $0.05H$ connected in series. A supply voltage of $230V$, $50Hz$ is applied across the circuit. Find the current, P.F. and power consumed by the circuit. Draw the vector diagram.	7	L3	CO2
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	c.	What are the advantages of a 3- ϕ system over a single phase system?	6	L1	CO1
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Module - 3

Q.5	a.	With a neat diagram, explain the construction of D.C. generator.	7	L1	CO2
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	b.	A 4 pole lap connected DC generator has 600 armature conductors and run at 1200rpm. The generator has total flux of $0.24wb$, calculate the emf induced. Find the speed at which it should be driven to produce the same emf when wave connected.	7	L3	CO2
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	c.	Derive the torque equation of a D.C. motor.	6	L2	CO2
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OR

Q.6	a.	A 4 pole, 250V series motor has wave connected armature with 1254 conductors. The flux per pole is $22mwb$, when the motor is taking $50A$. The armature and series field coil resistances are 0.3Ω and 0.2Ω respectively. Calculate the speed and torque of the motor and also power developed in watts.	7	L3	CO2
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	b.	With usual notations derive an emf equation of D.C. generator.	7	L2	CO2
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	c.	Explain the following characteristics of a D.C. shunt motor: i) Torque vs armature current ii) Speed vs armature current.	6	L2	CO2
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Module - 4

Q.7	a.	Derive the emf equation of a transformer and hence obtain the voltage and current transformation ratios.	6	L2	CO2
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	b.	With neat figure explain the construction of two types of rotor of a 3- ϕ induction motor.	7	L2	CO1
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	c.	A 125KVA transformer has a primary voltage of $2000V$ at $60Hz$ with 182 and 40 turns on primary and secondary respectively. Calculate: i) no load secondary emf ii) Full load primary and secondary currents iii) Max value of flux in the core.	7	L3	CO2
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OR

Q.8	a.	Explain how a rotating magnetic flux is created in the stator of 3- ϕ induction motor.	7	L2	CO2
	b.	A 3- ϕ , 6 pole, 50Hz induction motor has a slip of 3% at full load. Find the synchronous speed, rotor speed and the frequency of rotor current at full load.	7	L3	CO2
	c.	Explain the various losses in a transformer and how to minimize them.	6	L1	CO2

Module – 5

Q.9	a.	Explain two way and three way control of lamps with circuit diagram and truth table.	7	L1	CO2
	b.	Define “unit” used for consumption of electrical energy and explain the two part tariff with its advantages and disadvantages.	6	L1	CO2
	c.	What is earthing? Explain plate earthing with neat figure.	7	L2	CO4

OR

Q.10	a.	What is electric shock? Write a note on precautions against electric shock.	6	L2	CO5
	b.	List out the power rating of household appliances including air conditioners, PCs, laptops, printers etc.	7	L2	CO5
	c.	Explain casing-capping wiring with neat diagram.	7	L2	CO4

CBCS SCHEME

BPOPS103/203

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First/Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.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.*

Module - 1			M	L	C
Q.1	a.	Define a Computer. Explain the characteristics of a digital computer.	10	L1	CO1
	b.	Explain the basic structure of a C program with a neat diagram.	10	L1	CO1
OR					
Q.2	a.	With a neat diagram explain the steps in the execution of C program.	10	L1	CO1
	b.	Explain the input and output statements in C with examples for each.	10	L2	CO1
Module - 2					
Q.3	a.	Explain the various operators in C.	10	L2	CO1
	b.	Explain the different forms of if statement with flowcharts.	10	L1	CO2
OR					
Q.4	a.	Explain the switch statement with an example.	10	L2 L3	CO2
	b.	Explain break and continue statements with examples for each.	04	L2 L3	CO2
	c.	Write a C program to find the largest of 3 numbers using nested if statement.	06	L3	CO2
Module - 3					
Q.5	a.	Discuss in detail the parts of a user-defined function.	10	L2	CO3
	b.	Discuss the storage classes in C.	10	L2	CO3
OR					
Q.6	a.	Define recursion. Write a C program to find the factorial of 'n' using recursion.	05	L1 L3	CO3
	b.	What is an array? Explain the declaration and initialization of 1-D arrays.	05	L1 L2	CO3
	c.	Write a C program to perform Matrix Multiplication.	10	L3	CO3
Module - 4					
Q.7	a.	Write functions to implement string operations such as compare concatenate and string length. Convince the parameter passing techniques.	10	L3	CO4
	b.	Develop a program using pointers to compute, sum, mean and standard deviation of all the elements stored in an array.	10	L3	CO4
OR					
Q.8	a.	Define a pointer. Discuss the declaration of pointer variables.	05	L2	CO4
	b.	Discuss the various string handling functions in C.	10	L2	CO4
	c.	Write a C program to swap two numbers using call by reference technique.	05	L3	CO4
Module - 5					
Q.9	a.	Define a structure. Explain the types of structure declarations with examples for each.	10	L1	CO4
	b.	Implement structures to read, write and compute average marks and the students scoring below and above average in a class of 'N' students.	10	L3	CO4
OR					
Q.10	a.	Differentiate between structures and union.	06	L2	CO5
	b.	Define a structure by name DOB consisting of three members dd, mm and yy. Develop a C program that would read values to the individual member and display the date in the form dd/mm/yyyy.	06	L3	CO5
	c.	Explain the various file operations with syntax for each.	08	L2	CO5

CBCS SCHEME

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BETCK105E/BETCKE105

First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024 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.	Briefly explain the principles of renewable energy, energy and sustainable development, fundamental and social implication of renewable energy.	10	L2	CO1
	b.	Briefly describe biomass energy and Internet of energy.	10	L2	CO1
OR					
Q.2	a.	Briefly describe energies from ocean.	10	L2	CO1
	b.	Briefly describe geothermal energy and solar energy.	10	L2	CO1
Module - 2					
Q.3	a.	Explain solar radiation and its estimation on horizontal and inclined surfaces.	10	L2	CO2
	b.	With neat sketches, explain the working principles of Pyranometer and Pyreheliometer.	10	L2	CO2
OR					
Q.4	a.	Explain solar pond and solar distillation.	10	L2	CO2
	b.	Explain the principle of photovoltaic system with applications.	10	L2	CO2
Module - 3					
Q.5	a.	Explain with a neat block diagram, the basic components of Wind Energy Conversion System (WECS) specifying the components of a wind turbine.	10	L2	CO3
	b.	Stating advantages and disadvantages, elaborate in detail, the working principle of a horizontal axis wind turbines.	10	L2	CO3
OR					
Q.6	a.	Elaborate on photosynthesis process.	6	L2	CO3

	b.	Explain biomass conversion technologies.	8	L2	CO3
	c.	Explain with a neat sketch, downdraft garifier.	6	L2	CO3
Module – 4					
Q.7	a.	Explain with sketches, working of single and double basin tidal power plants.	10	L2	CO4
	b.	Summarize the advantages and limitation of tidal power generation.	10	L2	CO4
OR					
Q.8	a.	Explain with sketches, working principles of open and closed cycle Ocean Thermal Energy Conversion (OTEC) system.	10	L2	CO4
	b.	What are the problems associated with OTEC?	10	L2	CO4
Module – 5					
Q.9	a.	Classify fuel cells and explain the working of hydrox (H_2 , O_2) fuel cell.	10	L2	CO5
	b.	Describe in detail about hydrogen energy storage and applications.	10	L2	CO5
OR					
Q.10	a.	Explain with a sketch, electrolysis method used for hydrogen energy production.	10	L2	CO5
	b.	Discuss the problems associated with hydrogen energy.	10	L2	CO5

CBCS SCHEME

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BETCK105F / BETCKF105

First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024 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
Q.1	a.	Define Solid Waste. Explain the classification of the same based on sources.	10	L2	CO1
	b.	With a neat flow chart, explain the functional elements of solid waste management system.	10	L2	CO1
OR					
Q.2	a.	Write short notes on ESSWM (Environmentally Sound Solid Waste Management) and EST (Environment Sound Technology)	10	L2	CO1
	b.	Explain the various factors affecting Solid Waste Management.	10	L2	CO1
Module - 2					
Q.3	a.	Describe the Rationale for analysis for Waste Stream Assessment and steps involved in Field investigation.	10	L2	CO1
	b.	Explain the various factors causing variation in waste quantity and composition of solid wastes.	10	L2	CO1
OR					
Q.4	a.	Enumerate the various chemical characteristics of solid wastes.	10	L2	CO1
	b.	Explain the various environmental effects due to inadequate and improper waste management.	10	L2	CO1
Module - 3					
Q.5	a.	Outline the various factors that influence the waste collection system.	10	L2	CO2
	b.	Write short notes on : i) Collection vehicle routing ii) Transfer station	10	L2	CO2

OR					
Q.6	a.	Explain the various disposal options of solid wastes.	10	L2	CO2
	b.	Describe the different processes for the feasibility of disposal of solid waste through sanitary land-filling.	10	L2	CO2
Module – 4					
Q.7	a.	Explain the process of mechanical volume Reduction.	10	L2	CO2
	b.	List out different components separation techniques used in solid waste management system and explain any two in detail.	10	L1	CO2
OR					
Q.8	a.	Write a note on Drying and Dewatering operations used in SWM.	10	L2	CO3
	b.	What are the various recycling programmes elements used in SWM and explain any two?	10	L2	CO3
Module – 5					
Q.9	a.	Describe the various characteristics of Hazardous wastes.	10	L2	CO4
	b.	Explain the different classification of Hazardous wastes.	10	L2	CO4
OR					
Q.10	a.	Explain the different treatment methods used for Hazardous wastes.	10	L2	CO4
	b.	Write a note on pollution prevention and waste minimization.	10	L2	CO4

CBCS SCHEME

BIDTK158/BIDTK258/22BD16

USN

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Question Paper Version : A

First/Second Semester B.E./B.Tech./B.Des. Degree Examination, Dec.2023/Jan.2024
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. The stages of the design thinking process in order are
 - a) Understand > Draw > Ideate > Create > Test
 - b) Empathize > Define > Ideate > Prototype > Test
 - c) Empathize > Design > Implement > Produce > Test
 - d) Understand > Define > Ideate > Produce > Try
 2. The comprehensive principle of design thinking does not include
 - a) Relationship
 - b) Collaboration
 - c) Communication
 - d) Suppliers
 3. Design Thinking typically help in _____.
 - a) Innovation
 - b) Data Analysis
 - c) Marketing Management
 - d) Operation Management
 4. Mr. ABC wants to design a new bed that he can sell to nursing homes to use with their patients. However, Mr. ABC doesn't want anything to do with older adults or people with disabilities. According to the design thinking process, Mr. ABC will face problems because he is missing.
 - a) Empathy
 - b) Creativity
 - c) Practicality
 - d) Imagination
 5. The three I's of design thinking do not include
 - a) Interest
 - b) Implementation
 - c) Inspiration
 - d) Ideation
 6. In design, where does the information used to put together a problem statement come from?
 - a) The design stage
 - b) The ideate stage
 - c) The define stage
 - d) The testing stage

7. Collecting _____ is an important portion of testing a prototype in the test stage of design.
 - a) Pictures
 - b) Money
 - c) Feedback
 - d) E mails
8. A pototype is a simple experimental model of a proposed solution used to
 - a) Test ideas
 - b) Validate ideas
 - c) Both
 - d) None of these
9. Identify the correct statement
 - a) To derive the power of design thinking, individuals, teams and organizations must have a leap of faith about the existence of a solution.
 - b) Leap of faith is the page in the manual of design thinking containing the core philosophy about design thinking
 - c) Design thinking presupposes that some people are inherently creative and become successful in creative product development. The team should have atleast one such person.
 - d) None of these
10. Which is not basic modes of thinking?
 - a) Analytical
 - b) Judical
 - c) Critical
 - d) Synthetic
11. Design thinker in an organization are
 - a) People
 - b) Employees
 - c) Managers
 - d) All of these
12. What is the main objective of the empathize stage in design thinking?
 - a) Understanding the problem
 - b) Generating ideas
 - c) Identifying the user needs
 - d) Building prototypes
13. Mind mapping diagram provides information about
 - a) Customer and product interaction
 - b) Idea and its interaction among other ideas
 - c) Visualization of problem statement
 - d) None of these
14. Value chain analysis process provides
 - a) Better understanding of customer expectations
 - b) Uncover the information about partners capabilities
 - c) Better market analysis
 - d) All of these
15. Which one of the below helps in generating hypothesis about potential new business opportunities?
 - a) Prototype
 - b) Rapid concept development
 - c) Ideate
 - d) Learning launches
16. A visualization activity was performed by the employees of a bulb manufacturing company which included information in the form of
 - a) Images of various types of bulbs produced by the company
 - b) Its application suitability to the customers in the form of stories
 - c) Clears or reduces the possibilities of unmatched mental models/pictures
 - d) All of the above

17. The goal of the prototype phase is
- To understand what component of your idea didn't work
 - To understand what component of your idea worked
 - Both of them
 - None of them
18. _____ is a tool to use the design details and terms to develop new business opportunities.
- Visualization
 - Journey mapping
 - Rapid concept development
 - None of these
19. Which tool is used for feasibility check of assumptions of the new business ideas?
- Value chain analysis
 - Rapid concept development
 - Prototype
 - Assumption testing
20. Identify the process that brings users and designers together to work towards a shared goal.
- Problem statement formulation
 - Customer co-creation
 - Value chain analysis
 - None of these
21. Which process is a quick and inexpensive learning test to collect market driven data?
- Learning launches
 - Prototyping
 - Customer co-creation
 - None of these
22. What is an example of a method for conducting user research?
- Surveys
 - Usability testing
 - Design sprints
 - All of these
23. What is the process of collecting and analyzing data on how users interact with a design in real time called?
- Real Time design interaction capture
 - Real Time design analysis
 - Real Time design interaction analysis
 - Real Time design interaction capture and analysis.
24. What is the main goal of enabling efficient collaboration in digital space?
- To create a digital environment where team members can easily share ideas, provide feedback and work together on projects in real time.
 - To develop a project management software for team members
 - To train team members on how to use design collaboration software
 - To implement video conferencing tools for remote team members
25. What is the purpose of user testing?
- To gather feedback and identify areas for improvement in a product or service
 - To create a user-centered design
 - To create empathy map
 - To conduct user research
26. Which one of the following is not a part of various business process model steps?
- Process maps
 - Process detection
 - Process imitation
 - Process termination

27. An employer Mrs. ABC divides her business processes into basic components based on their functions and performance for the business is called:
 - a) Building Product Management
 - b) Business Product Management
 - c) Business Process Modelling
 - d) Basic Product Management
28. What is the main focus of design thinking in IT?
 - a) Efficiency
 - b) Cost effectiveness
 - c) User-centeredness
 - d) Innovation
29. Which stage in Design Thinking Process allows for the collaboration between designers, developers and stakeholders?
 - a) Empathize
 - b) Define
 - c) Ideate
 - d) Test
30. Which one of the following are advantages of Business Process Modeling?
 - a) Align operations with business strategy
 - b) Improves process communication
 - c) Improves operational efficiencies
 - d) All of these
31. How can Design Thinking in IT improve product services and processes?
 - a) By identifying user needs and pain points
 - b) By considering different perspectives
 - c) By rapid prototyping and testing
 - d) All of these
32. Which one of the following is part of Agile Virtual collaboration approach?
 - a) Allow openness
 - b) Establish a culture of continuous communication
 - c) Develop a culture of courage and flexibility
 - d) All of these
33. What is the main benefit of using a design?
 - a) Efficiency
 - b) Cost-effectiveness
 - c) Improved user satisfaction
 - d) Innovation
34. Business process modeling replaced the organization's previous effective packages
 - a) Time and motion study
 - b) Total quality management
 - c) a and b
 - d) None of these
35. Which method can be used to design complex software programs based on models, both structural and behavioural models?
 - a) Scenario based prototype
 - b) Agile discussion
 - c) Simple prototype
 - d) None of these
36. For a website development project in an industry, the software developers divide the main project into many smaller projects and adopt an iterative approach to incorporate any changes needed as per frequent customer feedback. This type of approach is found in
 - a) Agile method
 - b) Waterfall method
 - c) Sprints
 - d) All of these

37. A time boxed iteration of continuous development cycle for a planned amount of work that has to be completed by the team and made ready for review is called
- a) Prototyping
 - b) Sprint
 - c) Experience Design
 - d) Business Model Design
38. Which one is the process of setting goals, procedures and objectives in order to make a company or organization more competitive?
- a) Visualization
 - b) Strategic management
 - c) Group discussion
 - d) Prototype
39. Which one of the following is not part of any type of innovation?
- a) Disruptive
 - b) Radical
 - c) Conceptual
 - d) Architectural
40. Which innovation type is related to new concept, product or service which will create new value to the existing market and also create a completely new market?
- a) Incremental
 - b) Sustaining
 - c) Disruptive
 - d) Radical
41. Duration of design thinking workshop can be
- a) 2 hrs
 - b) 2 days
 - c) one week
 - d) Depends on the context of the workshop
42. Which one of the following are part of the scope of strategic innovation?
- a) Managed innovation process
 - b) Strategic Alignment
 - c) Industries foresight and implementation
 - d) All of these
43. 'The willingness to try something by building, it is the evidence of experimentation'. The statement refers to
- a) Story telling
 - b) Prototyping
 - c) Mind mapping
 - d) Conceptualizing
44. How does experience design relate to humanization in product development?
- a) Experience design focuses on creating a positive user experience while, humanization focuses on making products more user friendly.
 - b) Experience design and humanization are unrelated.
 - c) Experience design and humanization focuses on creating a positive user experience
 - d) None of these
45. Which one is not part of planning stage of design thinking workshop?
- a) Learning goals
 - b) Pre-meeting
 - c) Developing flow of activity
 - d) Idea testing

46. _____ innovation happens when a new technology completely disrupts existing business or economy and creates a new business model.
- a) Incremental
 - b) Sustaining
 - c) Disruptive
 - d) Radical
47. Which of the following is not consideration while representing the story of the product?
- a) The central idea of the product
 - b) Engaging the participants
 - c) Other products in market
 - d) Incorporate adequate detail
48. A company collects, analyses and rework by considering negative feedback to learn and improve to create a solution that is
- a) Desirable to customer
 - b) Feasible to implement
 - c) Viable for long term success
 - d) All of these
49. What step of the design process was not considered for this tea pot?



- a) Research and Design
 - b) Prototype and Testing
 - c) Design and Manufacturing
 - d) All of these
50. Mr. XYZ is starting a clothing company. Instead of making clothing that fits models, he wants to start thinking about what non models/common people/end users need and plan his design around them. Accordingly, he is engaging in
- a) Design thinking
 - b) Model design
 - c) End user generation
 - d) Model thinking

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First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024 Introduction to Internet of Things

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.	Differentiate between point to point and point to multipoint connection type.	5	L1	CO1
	b.	Discuss the advantages and disadvantages of the following network topologies: (i) Star (ii) Ring (iii) Bus (iv) Mesh, with neat diagram.	5	L2	CO1
	c.	Explain OSI model with the help of neat diagram.	10	L2	CO1
OR					
Q.2	a.	Explain communication protocol for TCP/IP suite with considering host A and host B with the help of diagram.	8	L2	CO1
	b.	Differentiate between IoT and M2M.	4	L1	CO1
	c.	Explain various networking components of IoT.	8	L2	CO1
Module - 2					
Q.3	a.	Define a sensor node. Explain simple sensing operation in IoT node with its functional blocks.	8	L2	CO2
	b.	Briefly list and explain characteristics of sensor.	5	L1	CO2
	c.	Define actuators. Explain briefly the actuators type.	7	L2	CO2
OR					
Q.4	a.	Explain sensorial deviation's with respect to analog and digital sensors.	6	L2	CO2
	b.	Explain different sensors based on sensing environment and physical sensors.	8	L2	CO2
	c.	Explain different characteristics of actuators.	6	L2	CO2
Module - 3					
Q.5	a.	What are the different data formats found in IoT network? Explain briefly.	6	L2	CO3
	b.	What are the types of IoT processing topologies? Explain them briefly.	10	L2	CO3
	c.	Explain the importance of processing in IoT.	4	L2	CO3
OR					

Q.6	a.	Explain IoT device design and selection considerations.	10	L2	CO3
	b.	What is processing off-loading? Infer the different data off-loading method.	10	L2	CO3
Module – 4					
Q.7	a.	Define cloud computing. Describe the advantages of cloud computing.	7	L2	CO4
	b.	Define virtualization. Contrast the advantages of virtualization in detail.	7	L2	CO4
	c.	Explain different types of virtualization in detail.	6	L2	CO4
OR					
Q.8	a.	Illustrate the types of cloud simulation and explain briefly.	8	L3	CO4
	b.	Define Service Level Agreement (SLA). Explain its importance and metrics used while defining SLA.	6	L2	CO4
	c.	List the components used in agriculture IoT and explain with neat diagram.	6	L2	CO4
Module – 5					
Q.9	a.	Explain the architecture of vehicular IoT with the help of neat diagram.	8	L3	CO5
	b.	Describe the components of vehicular IoT with the help of neat diagram.	8	L2	CO5
	c.	List the applications of IoT in transportation.	4	L1	CO5
OR					
Q.10	a.	With a neat diagram, explain the architecture of healthcare IoT.	10	L2	CO5
	b.	Define machine learning? List out the advantages of machine learning along with the diagram and explain with description.	10	L2	CO5

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Question Paper Version : A

First/Second Semester B.E./B.Tech./B.Ds. Degree Examination, Dec.2023/Jan.202
Communicative English

Time: 1 hr.]

[Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

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

-
1. 'Communication' The word originates from Laten word
a) Communicm b) Communico c) Communicative d) None of these
 2. Communication is a _____ process.
a) one way b) two - way c) three - way d) None of these
 3. In order to achieve the production target for a particular month, the discussion held between the production manager and supply manager will certainly be a perfect instance of _____ Communication.
a) Vertical b) Spiral c) Cross wises d) Horizontal
 4. 'Poor Printing' it is a type of Barrier _____
a) Verbal barrier b) Psychological barrier
c) Physiological barrier d) Physical barrier
 5. 'Transcendental meditation' is example of _____ Communication.
a) Extrapersonal b) Interpersonal c) Intrapersonal d) Non - verbal
 6. The most straight forward, basic interpersonal communication meaning is _____ Communication.
a) Mass Communication b) Interpersonal
c) Extrapersonal d) None of these
 7. Flashing eyes, avoiding eye contact may also cause _____ to effective Communication.
a) Vernal barrier b) Listening barrier
c) Psychological barrier d) Non - Verbal barrier
 8. In general oral Communication is the interchange of _____ between the sender and the receiver.
a) cues and clues b) speaking c) gestures d) verbal messages

9. 'Follows a set pattern such as sequence of elements in a report' this is _____ Communication.
 a) Professional b) General c) Personal d) None of these
10. In Organizations, informal communication also permeates. This informal communication is called _____
 a) Personal b) Professional c) Grapevine d) None of these
11. One native regional accent that has gained social prestige is the _____ of English.
 a) Received pronunciation b) Reverse perception
 c) Transcription d) None of these
12. A vowel sound whose quality does not change over the duration of the vowel is called _____
 a) Vowel b) Diphthong c) Pure vowel d) Consonant
13. The consonant sounds that come before vowel sound are called _____
 a) Coda b) Onset c) Medical d) None of these
14. What is the division of syllables of word 'Information'?
 a) in-form-ation b) inform-ation c) in-formation d) in - for - ma - tion
15. Transcribe the word 'daughter'.
 a) /'dɔːtə/ b) /dɔ'tə/ c) /dɔ:tr/ d) /d3:tə/
16. 'No. The women with the plastic bag'. In this sentence which words are having falling tone?
 a) No, The woman b) Plastic bag c) No. bag d) None of these
17. Find the silent letter in the word 'though'
 a) th b) ou c) ugh d) gh
18. In the word 'Sheep' often mispronounced sound is
 a) /ʃ/ b) /S/ c) ee d) p
19. Correct the spelling of the following word :
 a) Renumeration b) Remuneration c) Remunation d) Remuration
20. How to pronounce the word 'Next'?
 a) nekast b) nekest c) nekist d) nekst
21. I have _____ to buy a car. (Use appropriate noun)
 a) no rupees b) no notes c) no money d) no moneys
22. _____ and _____ want to purchase a yacht. (fill with suitable pronoun).
 a) He, I and you b) You, he and I c) I, he and you d) You, I and he
23. The flower smells _____. (Appropriate Adjective is)
 a) sweet b) sweetly c) sweeter d) sweetest
24. It is _____ hotter today, (place an adverb).
 a) most b) very c) more d) much

25. Hardly had he arrived _____ the portico crumbled. (Choose correct conjunction)
 a) than b) then c) when d) None of these
26. We could barely do anything. (suitable question Tag).
 a) Couldn't we? b) Could we? c) Can we? d) None of these
27. A Person who believes in God, we call him
 a) Theist b) Atheist c) Eccentric d) Spinster
28. 'I saw a man' in this sentence which is pronounced with a weak verb, without any special emphasis.
 a) I b) man c) saw d) a
29. Flour is made _____ wheat. (suitable preposition)
 a) of b) by c) from d) in
30. _____ Humanity is in danger. (Choose the correct option).
 a) A b) An c) The d) Not needed any article

Fill in the banks with appropriate prefixes :

31. The army people _____ attacked the enemy.
 a) in - b) Inter c) Counter d) Un
32. My research Supervisor is _____ critical about everything.
 a) hyper b) un c) mono d) intra

Choose the pairs of word / phrases :

33. Archive : Document
 a) Warehouse : merchandise b) Library : Shelves
 c) Theater : Plays d) Cinema : Projector
34. Coal : Mineral
 a) Oxygen : Water b) river : dam c) gold : metal d) silver : mine

Choose the correct subject – verb concord in the sentences :

35. Diabetes _____ a silent killer.
 a) is b) are c) were d) None of these
36. The Jury gave _____ verdict in an unbiased manner.
 a) their b) them c) its d) None of these

Complete the sentence with appropriate tense from :

37. Sir, I _____ passed my B.Tech in 2003
 a) have b) has c) was d) Not required
38. We _____ finished our assignment just now.
 a) have b) has c) had d) None of these

Choose the correct option :

39. _____ was visible at this late hour.
 a) No man b) No c) No men d) None of these

40. The tycoon had expired before the _____
 a) Physician arrives b) Physician arriving
 c) Physician arrived d) Physician had arrived
41. When _____, I will tell him everything.
 a) he is coming b) he comes c) he will come d) None of the above
42. Which of these must be avoided in Presentation?
 a) Proper grammar b) Complex words c) Short sentence d) Clear voice
43. Which of these can be used to break the monotony in a speech?
 a) Humour b) Constant tone c) Low voice d) Sad story
44. Mother tongue influence can be effectively minimized in the classroom by _____
 a) using the mother tongue more often b) giving examples from the mother tongue
 c) giving a lot of exposure in the target language
 d) giving inputs from the target language in a simple graded manner.
45. The art of clear and concise manner of speaking, with clarity of meaning and thought called _____
 a) Elocution b) Latency c) Extempore d) Story telling

Read Comprehension : Read the passage carefully and select the suitable answer from the given options :

Quite recently India laid the foundation stone for one of its most sought – after projects running a Bullet Train. It was very well considered as a dream project of the Honorable Prime Minister. Entire India felt proud of having its first ever bullet train scheduled to run between Mumbai and Ahmedabad, a distance of 508 km in about 2 hours 35 minutes. In his own words, “To grow, one needs to expand one’s dreams and decide one’s strength to achieve that. It’s the New India which has to fly high”. “Bullet Train is a project that will provide pace to development. Along with new technology, it will also bring results faster”, he added. According to Achal Khare, the Managing Director of the National High speed Rail Corporation, the project would be completed by December 2023.

46. The _____ for the Bullet Train project was laid recently.
 a) railway track b) signaling system c) foundation stone d) None of these
47. The bullet train will take about _____ to run between both the States.
 a) 3 hrs, 25 min b) 2 hr, 55 min c) 2 hr, 35 min d) None of these
48. According to Prime Minister, the two benefits that the bullet train will bring are to provide pace to _____ to faster _____.
 a) travel, trains b) train, travel, results
 c) development, trains d) development, results
49. The bullet train schedule to run between _____ and _____.
 a) Mumbai and Ahmedabad b) Mumbai and Delhi
 c) Mumbai and Gujarat d) None of these
50. The project is expected to be _____ by December 2023.
 a) completed b) operationalised c) started d) None of these

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First/Second Semester B.E/B.Tech. Degree Examination, Dec.2023/Jan.2024

ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ

(COMMON TO ALL BRANCHES)

Time: 1 hrs.]

[Max. Marks: 50

ಸೂಚನೆಗಳು

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

1. "ಪರಿಸರ, ಪರಂಪರೆ ಹಾಗೂ ಪ್ರತ್ಯಕ್ಷ ಜೀವನದ ಅನೇಕ ಸಂಸ್ಕಾರಗಳ ಮೂಲಕ ಮನುಷ್ಯನ ಅಂತರಂಗ ಪಡೆಯುವ ಪರಿಪಕ್ವತೆ" ಇದನ್ನು ಹಂಪ ನಾಗರಾಜಯ್ಯನವರು ಏನೆಂದು ಕರೆದಿದ್ದಾರೆ?

a) ಸಂಸ್ಕೃತಿ b) ಆಚರಣೆ c) ಸಮನ್ವಯ d) ಸೌಂದರ್ಯ

2. ಕೆಳಗಿನವುಗಳಲ್ಲಿ ಅಂಡಯ್ಯ ಕವಿಯ ಕಾವ್ಯ ಯಾವುದು?

a) ಕಾವ್ಯ ಮೀಮಾಂಸೆ b) ಕಬ್ಬಿಗರ ಕಾವ್ಯ
c) ಕರ್ನಾಟಕ ಗತವೈಭವ d) ಶ್ರೀರಾಮಾಯಣ ದರ್ಶನಂ

3. ರಾಜರಾಜರಲ್ಲಿ ಯುಧ್ಧಗಳು ಏಕೆ ನಡೆಯುತ್ತಿದ್ದವು?

a) ರಾಜ್ಯ ರಕ್ಷಣೆ b) ಸಾಹಸ ಮನೋವೃತ್ತಿ c) a) ಮತ್ತು b) d) ಯಾವುದು ಅಲ್ಲ

4. ಕವಿರಾಜ ಮಾರ್ಗದಲ್ಲಿ ಹೇಳಿರುವಂತೆ ಕನ್ನಡಿಗರು ಎಂತಹವರು?

a) ಕೀರ್ತಿವಂತರು b) ಗುಣಶಾಲಿಗಳು c) ಸ್ವಾಭಿಮಾನಿಗಳು d) ಎಲ್ಲವೂ ಸರಿ

5. "ನಿಘಂಟು ತಜ್ಞ" ಎಂದು ಹೆಸರಾದ ಕನ್ನಡದ ಲೇಖಕರು ಯಾರು?
 a) ಪ್ರೊ.ಜಿ. ವೆಂಕಟಸುಬ್ಬಯ್ಯ b) ಬಿ.ಎಂ.ಶ್ರೀ
 c) ಕುವೆಂಪು d) ಪು.ತಿ.ನ
6. "ಕರ್ನಾಟಕ ಗತವೈಭವ" ಕೃತಿಯನ್ನು ರಚಿಸಿದವರು ಯಾರು?
 a) ಶ್ರೀರಂಗ b) ಆಲೂರು ವೆಂಕಟರಾಯರು
 c) ಮಾಸ್ತಿ ವೆಂಕಟೇಶ ಅಯ್ಯಂಗಾರ್ d) ಸಿದ್ದಯ್ಯ ಪುರಾಣಿಕ
7. ರಾಯಚೂರಿನಲ್ಲಿ 1955 ರಲ್ಲಿ ನಡೆದ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಸಮ್ಮೇಳನದ ಅಧ್ಯಕ್ಷರು ಯಾರು?
 a) ಕೆ. ಎಸ್. ನರಸಿಂಹಸ್ವಾಮಿ b) ದ.ರಾ.ಬೇಂದ್ರೆ
 c) ಶ್ರೀರಂಗ d) ಡಿ.ವಿ.ಜಿ
8. ಕನ್ನಡ ಭಾಷೆಯನ್ನು ವಿವಿಧ ರೂಪಗಳಲ್ಲಿ ಸುಮಾರು ಎಷ್ಟು ಜನರು ಆಡುನುಡಿಯಾಗಿ ಬಳಸುತ್ತಿದ್ದಾರೆ?
 a) 30 ದಶಲಕ್ಷ b) 40 ದಶಲಕ್ಷ c) 80 ದಶಲಕ್ಷ d) 60 ದಶಲಕ್ಷ
9. ವಿನೋಬಾ ಭಾವೆಯವರು ಕನ್ನಡ ಭಾಷೆಯ ಲಿಪಿಯನ್ನು ಏನೆಂದು ಕರೆದಿದ್ದಾರೆ?
 a) ಲಿಪಿಗಳ ರಾಣಿ b) ಯುವರಾಣಿ c) ಯುವರಾಜ d) ಲಿಪಿಗಳ ರಾಜ
10. ಭಾಷಿಯ ಸಮೃತ್ತವಾದ ನಿಯಮಗಳನ್ನು ತಿಳಿಸುವ ಶಾಸ್ತ್ರಕ್ಕೆ ಏನನ್ನುತ್ತಾರೆ?
 a) ವಿಮರ್ಶೆ b) ವ್ಯಾಕರಣ c) ನಿಘಂಟು d) ಕಾಗುಣಿತ
11. ಶರಣ ಚಳವಳಿಯ ಪ್ರೇರಕ ಶಕ್ತಿ ಯಾರು?
 a) ಬಸವಣ್ಣ b) ಬಿಜ್ಜಳ ಮಹಾರಾಜ c) ಅಲ್ಲಮಪ್ರಭು d) ಅಕ್ಕಮಹಾದೇವಿ
12. "ರಾಮನಾಥ" ಅಂಕಿತದೊಡನೆ ವಚನಗಳನ್ನು ರಚಿಸಿದ ವಚನಕಾರ ಯಾರು?
 a) ಆಯ್ದಕ್ಕಿ ಮಾರಯ್ಯ b) ಜೇಡರದಾಸಿಮಯ್ಯ c) ಅಲ್ಲಮಪ್ರಭು d) ಆಯ್ದಕ್ಕಿ ಲಕ್ಕಮ್ಮ
13. ಅಕ್ಕಮಹಾದೇವಿಯ ವಚನಗಳ ಅಂಕಿತ ಯಾವುದು?
 a) ಅಮರೇಶ್ವರ ಲಿಂಗ b) ಗುಹೇಶ್ವರ c) ಚೆನ್ನಮಲ್ಲಿಕಾರ್ಜುನ d) ಕೂಡಲಸಂಗಮದೇವ

14. ಗುರು, ಲಿಂಗ ಮತ್ತು ಜಂಗಮ ಈ ಮೂರಕ್ಕಿಂತ ಯಾವುದು ಅತ್ಯಂತ ಶ್ರೇಷ್ಠವೆಂದು ಆಯ್ಕೆ ಮಾರಯ್ಯ ತನ್ನ ವಚನದಲ್ಲಿ ಹೇಳಿದ್ದಾರೆ?
 a) ವಿದ್ಯೆ b) ದಾನ c) ಬುದ್ಧಿ d) ಕಾಯಕ
15. "ಅದರಿಂದೇನು ಫಲ, ಇದರಿಂದೇನು ಫಲ" ಈ ಕೀರ್ತನೆಯನ್ನು ರಚಿಸಿದವರು ಯಾರು?
 a) ಪುರಂದರ ದಾಸರು b) ವಿಜಯದಾಸರು c) ಕನಕದಾಸರು d) ಗೋಪಾಲದಾಸರು
16. ಕನಕದಾಸರ ಆರಾಧ್ಯದೈವ ಯಾರು?
 a) ಚೆನ್ನಕೇಶವ b) ಆದಿಕೇಶವ c) ಸೋಮೇಶ್ವರ d) ಪುರಂದರ ವಿಠಲ
17. ಹಲವು ಕಾಲ ಕಲ್ಲು ನೀರೊಳಗಿದ್ದರೆ ನೆನೆದು ಅದು ----- ಆಗುವುದೆ?
 a) ಶಿಲಾಮಂದಿರ b) ತಕ್ಷಶಿಲೆ c) ಅಮೃತಶಿಲೆ d) ಯಾವುದು ಅಲ್ಲ
18. ನವಿಲಿಗೆ ----- ಬರೆದವರು ಯಾರು ಎಂದು ಕನಕದಾಸರು ತಮ್ಮ ಕೀರ್ತನೆಯಲ್ಲಿ ಕೇಳುತ್ತಾರೆ?
 a) ಕುಡಿ b) ಚಿತ್ತಾರ c) ಬಣ್ಣ d) ಚಿತ್ರ
19. ಶಿಶುನಾಳ ಶರೀಫರು ತಮ್ಮ ತತ್ವಪದದಲ್ಲಿ ಮಣ್ಣನ್ನು ಯಾವುದಕ್ಕೆ ಹೋಲಿಸಿದ್ದಾರೆ?
 a) ಚಿನ್ನ b) ಬೆಳ್ಳಿ c) ವಜ್ರ d) ತಾಮ್ರ
20. ಎಂತಹ ಬೆಂಕಿಯನ್ನು ಹಚ್ಚಿ ಕುಂಬಾರಕಿ ಕೂಡಗಳ ಸುಡುತ್ತಾಳೆ ಎಂದು ಶರೀಫರು ಹೇಳುತ್ತಾರೆ?
 a) ಆಚಾರ b) ಅರಿವು c) ಧ್ಯಾನ d) ಭಕ್ತಿ
21. ಹುಲ್ಲಾಗಿ ಬೆಟ್ಟದಡಿ, ಮನೆಗೆ ಏನಾಗು ಎಂದು ಕವಿ ಡಿ.ವಿ.ಜಿಯವರು ಹೇಳುತ್ತಾರೆ?
 a) ಮಲ್ಲಿಗೆಯಾಗು b) ಕನಕಾಂಬರವಾಗು c) ನೇವಂತಿಗೆಯಾಗು d) ಗುಲಾಬಿಯಾಗು
22. ನಗುವು ಸಹಜದ ಧರ್ಮ, ನಗಿಸುವುದು ಎಂತಹ ಧರ್ಮ ಎಂದು ಕವಿ ಹೇಳುತ್ತಾರೆ?
 a) ಅಂತರಂಗದ ಧರ್ಮ b) ಪರಧರ್ಮ c) ಬಹಿರಂಗದ ಧರ್ಮ d) ಯಾವುದು ಅಲ್ಲ
23. ಋಷಿ ವಾಕ್ಯದೊಡನೆ ಯಾವ ಕಲೆ ಸೇರಿದರೆ ಜನಜೀವನ ಸುಖಕರವಾಗಿರುವುದೆಂದು ಕವಿ ಹೇಳುತ್ತಾರೆ?
 a) ತಂತ್ರಜ್ಞಾನ b) ತಂತ್ರಾಂಶ c) ವಿಜ್ಞಾನ d) ಅಂತರ್ಜಾಲ

24. ಕೆಳಗಿನವುಗಳಲ್ಲಿ ಯಾವುದು ಡಿ.ವಿ.ಜಿ ಯವರ ಕಾವ್ಯ ಅಲ್ಲ?
 a) ನಿವೇದನೆ b) ಉಮರನ ಒಸಗೆ c) ಕೇತಕಿವನ d) ಕೊಳಲು
25. ದ.ರಾ.ಬೇಂದ್ರೆಯವರ ಕಾವ್ಯನಾಮ ಏನು?
 a) ಅಂಬಿಕಾತನಯದತ್ತ b) ಆನಂದಕಂದ c) ಕುವೆಂಪು d) ಶ್ರೀನಿವಾಸ
26. "ಕುರುಡು ಕಾಂಚಾಣ" ಎಂಬ ಪದ್ಯವನ್ನು ಬೇಂದ್ರೆಯವರ ಯಾವ ಕವನ ಸಂಕರಲನದಿಂದ ಆಯ್ದುಕೊಳ್ಳಲಾಗಿದೆ?
 a) ಅರಳುಮರಳು b) ನಾದಲಿಲೆ c) ಗರಿ d) ಸಖೀಗೀತೆ
27. ಅಂಗಡಿಯೊಳಗೆ ಕಾಂಚಾಣದ ಸದ್ದು ಹೇಗಿದೆ ಎಂದು ಕವಿ ಹೇಳುತ್ತಾರೆ?
 a) ಗಣಣ b) ತನನ c) ರುಣ ರುಣ d) ತೋಂ ತೋಂ
28. ಕೆಳಗಿನ ಕೃತಿಗಳಲ್ಲಿ ಕುವೆಂಪು ಅವರ ಕಾದಂಬರಿಯನ್ನು ಗುರುತಿಸಿ.
 a) ಚಿತ್ರಾಂಗದಾ b) ದುರ್ಗಾಸ್ತಮಾನ c) ಸಂದ್ಯಾರಾಗ d) ಮಲೆಗಳಲ್ಲಿ ಮದುಮಗಳು
29. ಸರ್ವರಿಗೆ ಸಮಬಾಳು ! ಸರ್ವರಿಗೆ ----- ಎಂದು ಕವಿ ಕುವೆಂಪು ಹೇಳಿದ್ದಾರೆ?
 a) ಸಮಪಾಲು ! b) ಸಹಬಾಳ್ವೆ ! c) ಸಮಾನ ಪಾಲು ! d) ಯಾವುದು ಅಲ್ಲ
30. "ವಿಘ್ನವ" ಪದದ ಅರ್ಥವೇನು?
 a) ಶಬ್ದಕೋಶ b) ಕ್ರಾಂತಿ c) ಚಿತ್ರ d) ವಿಶ್ವ
31. ಮಂಡ್ಯ ಜಿಲ್ಲೆಗೆ ನೀರನ್ನು ಒಡಗಿಸುವ ಕೃಷ್ಣರಾಜಸಾಗರದ ಯೋಜನೆಯನ್ನು ತಯಾರಿಸಿದವರು ಯಾರು?
 a) ಡಾ. ವಿಶ್ವೇಶ್ವರಯ್ಯ b) ಥಾಮಸ್ ಮನ್ರೊ c) ರಾ.ಹ.ದೇಶಪಾಂಡೆ d) ಯಾರು ಅಲ್ಲ.
32. ----- ಜಿಲ್ಲೆಯ ಸೌಂದರ್ಯದಲ್ಲಿ ವಿಶ್ವೇಶ್ವರಯ್ಯ ಜೀವಂತರಾಗಿದ್ದಾರೆ.
 a) ದಕ್ಷಿಣ ಕನ್ನಡ b) ಮಂಡ್ಯ c) ರಾಮನಗರ d) ಚಿಕ್ಕಮಗಳೂರು
33. ಡಾ. ವಿಶ್ವೇಶ್ವರಯ್ಯನವರು ಪ್ರವಾಸ ಹೊರಟಾಗ ಅವರ ಸೂಟ್ ಕೇಸಿನಲ್ಲಿ ಯಾವ ಪುಸ್ತಕದ ಪ್ರತಿಯನ್ನು ಇಟ್ಟುಕೊಳ್ಳುತ್ತಿದ್ದರು.
 a) ವೇದ b) ಉಪನಿಷತ್ತು c) ಭಗವದ್ಗೀತೆ d) ರಾಮಾಯಣ

CBCS SCHEME

BKBKK107/207

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Question Paper Version : A

First/Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024

Balake Kannada

(COMMON TO ALL BRANCHES)

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.

Fill in the blanks with suitable words given:

1. niinu
a) yaaru b) adu c) yaake d) avaru
2. adu _____ pustaka?
a) yaara b) enu c) niivu d) avaru
3. idu _____ Kaaleju
a) niivu b) avaru c) avaLa d) yaake
4. avaru _____ gurugaLu.
a) enu b) yaake c) namma d) elli
5. _____ nanna Amma
a) avaLu b) avanu c) yaake d) idu

Write appropriate words to fill the blank and make sentence meaningful.

6. idu _____ mane.
a) enu b) avaLa c) huDuga d) yaake
7. naanu _____ bandenu.
a) Kaalejige b) avana c) avara d) enu
8. niivu _____ hoguttiddira?
a) ellige b) enu c) avara d) avana

9. ivaru _____ akka.
a) nanna b) naNNa c) enu d) Nanna
10. adu yaara _____.
a) Mane b) mane c) enu d) nanna

Change the word as per the model:
(Ex : doDDa + avanu = doDDavanu)

11. SaNNa _____.
a) sannavanu b) saNNavanu c) SaNNavaNu d) SANNAVANu
12. Chikka _____
a) ChikkavaLu b) Chikkavanu c) CHIKKavanu d) CiKKaVNu
13. KeTTa
a) kettavanu b) KeTTavanu c) KeTTavaNu d) KettavaNu
14. ettara
a) ettaradavanu b) ettaravanu c) Ettaradavanu d) ETTaradavanu
15. mane
a) maneyavanu b) Maneyavanu c) ManeYavanu d) maneyavaNu

Transform the following words of Kannada as per the given model.
(SaNNa - SaNNadu)

16. DoDDa _____
a) DoDDadu b) doDDadu c) doddadu d) DODDADU
17. avara _____
a) avaradu b) Avaradu c) avaraDu d) AVARADU
18. namma _____
a) nammadu b) NammaDu c) nammaDu d) NaMMaDu
19. hoSa _____
a) hoSadu b) Hosadu c) HoSaDu d) hoSaDu
20. avaLa _____
a) avaLadu b) AvaLadu c) avaladu d) avanadu

Transform the following words of Kannada as per the given model:
(mane - maneyalli)

21. raSte _____
a) raSteyalli b) Rasteyalli c) RasTeyalli d) raSteYalli
22. pustaka _____
a) pustakadalli b) pustakaDalli c) Pustakadalli d) PUSTAKADalli

23. angaDi _____
a) angaDiyalli b) Angadiyalli c) angadiyalli d) angaDiyalli
24. byag _____
a) byaginalli b) byagiNalli c) byagalli d) byaGalli
25. daari _____
a) daariyalli b) daariYalli c) daarinalli d) Daariyalli

Fill in the blanks with suitable words to make the sentence meaningful:

26. avaLu nimma _____
a) akka b) Akka c) anna d) tamma
27. avara _____ yaavudu?
a) aane b) mane c) MANE d) Mane
28. nimma hesaru _____ ?
a) enu b) yavadu c) yaake d) Enu
29. avaLu nanna _____
a) snehite b) snehita c) geleya d) huDuga
30. Kaalejige hoguva _____ yaavadu?
a) Daari b) daari c) DAARI d) DaaRi

Change the word as per the model given:
(KuDi – KuDiyiri)

31. tinni _____
a) tinniri b) tinniyiri c) tindiri d) tandiri
32. ese _____
a) eseyiri b) eseyiri c) Eseyiri d) eseiri
33. nuDi _____
a) nuDiyiri b) Nudisiri c) NUDIYIRI d) nudiyiri
34. Savi _____
a) Saviyiri b) Savida c) Satya d) Sullu
35. mare _____
a) mareyiri b) Kareyiri c) MAREYIRI d) Mariri

Fill in the blanks using the correct form of the Kannada word to make sentence meaningful one.

36. niinu _____ (who)
a) yaaru b) Yaaru c) YAARu d) yaru
37. indu _____ uurige hogoNavaa? (we)
a) naavu b) Naavu c) NAAvu d) Naau

38. idu _____ pustaka. (her)
a) avaLa b) avana c) avara d) nanna
39. _____ nanna snehita. (He)
a) AvaLu b) Avanu c) Avara d) Namma
40. indu _____ Kaalejige baruttiyaa? (You)
a) niinu b) Ninu c) neenu d) Neenu

Transform the following words into Kannada as per the model:
(ondu – ondaneya)

41. eradu _____
a) eradaneya b) ondaneya c) Hattaneya d) Mooraneya
42. muuru _____
a) muuraneya b) Muraneya c) Muuraneya d) MUURANEYa
43. Aidu _____
a) aidaneya b) Aidaneya c) aiduaneya d) AIDANEya
44. aaru _____
a) aaraneya b) aaraneYa c) Araneya d) AAraneya
45. enTu _____
a) enTaneya b) Entaneya c) entaneya d) EnTaneya

Translate following words as per model: (iru – irutteve)

46. baru _____
a) barutteve b) Barutteve c) Bartivi d) bartivi
47. hogu _____
a) hogutteve b) hoguTTeve c) Hogutteve d) HOGUTTEVE
48. tinnu _____
a) tinnutteve b) Tinnutteve c) TinnuTTeve d) TINNUTTEVE
49. KoDu _____
a) Kodutteve b) KoDutteve c) KoDUtteve d) KODUTTEVE
50. maadu _____
a) maadutteve b) maaduTTeve c) maaDutteve d) maaDuTTeve

CBCS SCHEME

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BPHYS102/BPHYS202

First/Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.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. Draw neat sketches where ever necessary.

3. VTU Formula Hand Book is permitted.

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

5. Constants: Speed of Light $C = 3 \times 10^8$ m/s, Boltzmann const. $K = 1.38 \times 10^{-23}$ J/K⁻¹,

Planck's const $h = 6.625 \times 10^{-34}$ JS, Acceleration due to gravity $g = 9.8$ m/s⁻²,

Permittivity of Free space $\epsilon_0 = 8.854 \times 10^{-12}$ Fm⁻¹

Module - 1			M	L	C
Q.1	a.	Define LASER and explain the interaction of radiation with matter for the induced absorption, spontaneous emission and stimulated emission.	7	L1	CO1
	b.	Discuss different types optical fibers based on modes of propagation and refractive index profile.	9	L2	CO1
	c.	Find attenuation in an optical fiber of length 500m, when a light signal of power 100mW emerges out of the fiber with a power of 90mW.	4	L3	CO1
OR					
Q.2	a.	Obtain the expression for energy density of radiation using Einstein's co-efficient A and B and thus conclude $B_{12} = B_{21}$.	9	L2	CO1
	b.	Discuss point to point communication using optical fiber.	6	L2	CO1
	c.	In a diffraction grating experiment the LASER light undergoes second order diffraction for diffraction angle 1.48° . The grating constant $d = 5.05 \times 10^{-5}$ m and the distance between the grating and source is 0.60m, find the wavelength of LASER light.	5	L3	CO5
Module - 2					
Q.3	a.	State and explain Heisenberg's uncertainty principle. Using the principle show that electron doesn't exist inside the nucleus.	7	L2	CO2
	b.	Set up Schrodinger's time independent wave equation in one dimension.	8	L2	CO2
	c.	A particle of mass $0.5 \text{ MeV}/c^2$ has kinetic energy 100 eV. Find its de-Broglie wavelength where 'C' is the velocity of light.	5	L3	CO2
OR					
Q.4	a.	Find the Eigen values and Eigen functions for a particle in one dimensional infinite potential well.	9	L2	CO2
	b.	Discuss de-Broglie hypothesis.	6	L2	CO2
	c.	Calculate the energy of the first three states for an electron in one dimensional potential well of width 1 \AA .	5	L3	CO2

Module – 3					
Q.5	a.	Explain the representation of qubit using Bloch sphere.	6	L2	CO2
	b.	Discuss CNOT gate, matrix representation and its operation on four different input states.	6	L2	CO2
	c.	A linear operator X operates such that $X 0\rangle = 1\rangle$ and $X 1\rangle = 0\rangle$. Find the matrix representation of X	8	L3	CO2
OR					
Q.6	a.	State the Pauli's metrics and apply Pauli matrices on the states $ 0\rangle$ and $ 1\rangle$ states.	8	L3	CO2
	b.	Elucidate the differences between classical and quantum computing.	6	L2	CO2
	c.	Explain matrix representation of 0 and 1 states and apply identify operator I to $ 0\rangle$ and $ 1\rangle$ states.	6	L3	CO2
Module – 4					
Q.7	a.	Enumerate the failures of Classical Free Electron [CFET] Theory and mention the assumptions of Quantum Free Electron Theory [QFET]	7	L2	CO3
	b.	Describe Meissner's effect. Distinguish between Type I and Type II super conductors.	8	L2	CO3
	c.	Lead has a superconducting transition temperature of 7.26K. If initial field at 0K is $50 \times 10^3 \text{Am}^{-1}$, calculate the critical field at 6K.	5	L3	CO3
OR					
Q.8	a.	Define Fermi factor. Discuss the variation of Fermi factor with temperature and energy.	7	L2	CO3
	b.	Explain the phenomenon of super conductivity. Discuss qualitatively BCS theory of super conductivity.	8	L2	CO3
	c.	Calculate the probability of occupation of an energy level 0.02eV above Fermi level at temperature 200K.	5	L3	CO3
Module – 5					
Q.9	a.	Discuss timing in linear motion, uniform motion, slow in and slow out.	8	L2	CO4
	b.	Enumerate the difference between inferential and descriptive statistics.	6	L2	CO4
	c.	In an optical fiber experiment, the light passing through the fiber, made a spot diameter of 8mm on the screen. The distance between the end of the optical fiber cable and the screen is 0.031m. Calculate the angle of acceptance and numerical aperture of given optical fiber.	6	L3	CO5
OR					
Q.10	a.	Describe Jumping and parts of Jump.	8	L2	CO4
	b.	Discuss the salient features of Normal distribution using Bell curves.	7	L2	CO4
	c.	While animating speeding up car animation, the total distance covered over 6 frames is 25m. Calculate the base distance.	5	L3	CO4

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BETCK105I/ BETCKI105

First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024 Introduction to Cyber Security

Time: 3 hrs.

Max. Marks: 100

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

Module - 1			M	L	C
Q.1	a.	Define the following terms : i) Cyber space ii) Cyber squatting iii) Cyber punk iv) Cyber warfare v) Cyber terrorism	10	L1	CO1
	b.	Discuss the various classifications of cyber crimes.	10	L2	CO1
OR					
Q.2	a.	Who are cyber criminals? Discuss in detail the various types of cyber criminals.	10	L2	CO1
	b.	Explain the various classifications of cyber crimes.	10	L2	CO1
Module - 2					
Q.3	a.	Explain the phases involved in planning a cyber crime.	10	L2	CO1
	b.	What is cyber stalking? Explain in detail how cyber stalking works.	10	L2	CO1
OR					
Q.4	a.	Differentiate between active attacks and passive attacks.	10	L3	CO1
	b.	What are botnets? Explain how botnets can be used for gainful purposes.	10	L2	CO1
Module - 3					
Q.5	a.	Explain the various stages of a Network attack.	10	L2	CO2
	b.	Define the following terms : i) Proxy servers and Anonymizers ii) Phising iii) Keyloggers and spywares iv) Virus and worms v) Trojans and backdoor virus	10	L2	CO2
OR					
Q.6	a.	Explain the types of computer viruses.	10	L2	CO2
	b.	Explain the types of DOS attacks.	10	L2	CO2

Module – 4			
Q.7	a.	What is Phising ? Explain the various phising techniques.	10 L2 CO2
	b.	Explain the types of phising scams	10 L2 CO2
OR			
Q.8	a.	What is identity theft? Explain the types of identity theft.	10 L2 CO3
	b.	Discuss the techniques of identity theft.	10 L2 CO3
Module – 5			
Q.9	a.	What is digital Forensics? Explain the roles and typical scenarios involved in digital forensics.	10 L2 CO4
	b.	With a aid of diagram, explain the digital forensics lifecycle.	10 L2 CO4
OR			
Q.10	a.	Discuss the various methods for Extracting forensic evidence.	10 L2 CO4
	b.	Write short notes on : i) Chain of custody ii) Digital forensic science.	10 L2 CO4
