GIET UNIVERSITY, GUNUPUR – 765022

B. Tech – I Semester: CYCLE TEST - II

Subject Code: 21BBSBS1010 Subject Name: Engineering Mathematics-1

(Common to all branches)

Time: 1.30 hrs Maximum: 30 Marks

PART – A (2 x 5 = 10 Marks)

Q.1. Answer ALL questions		CO #	Blooms Level
a.	Test the exactness of the differential equation $x \sin(y^2)\,dx + y x^2 \cos(y^2)\,dy = 0$.	CO3	K1
b.	Define integrating factor and how it is useful for differential equation.	CO3	K2
c.	Solve $x^2y'' - 3xy' + 4y = 0$.	CO4	K1
d.	Define general and particular solution of a differential equation.	CO4	K1
e.	Define Even and Odd function. Verify $f(x) = x^2 + x^5$ is even or odd.	CO5	K1

PART – B (10 x 2 = 20 Marks)

Answer ALL Questions		Marks	CO#	Blooms Level
2.a.	Solve $\cos(x+y)\frac{dy}{dx} = 1$.	5	CO2	K3
b.	Solve $xy' + y = x^3y^6$.	5	CO2	K3
	(OR)			
c.	Solve $xy\frac{dy}{dx} = 1 + x + y + xy$. $= (1+x)(1+y)$	5	CO2	K3
d.	Solve $y'' - 4y' + 4y = \frac{e^{2x}}{x}$ by using variation of parameter.	5	CO2	K3
3.a.	Using Operator method Solve the differential equation $y'' - 4y' + 4y = e^{3x} + x + 1$.	5	CO5	K3
b.	Find the Fourier series $f(x) = \frac{x^2}{2}$ in $-\pi < x < \pi$.	5	CO5	K3
	(OR)			
c.	Solve $y'' + 3y' - 18y = 9\sin x$ by using undetermined coefficient method.	5	CO3	K3
d.	Solve $y'' + 4y' + 4y = 0$.	5	CO3	K3

GIET UNIVERSITY, GUNUPUR – 765022 BSH-02

B. Tech – 1st Semester (2023-2024): CYCLE TEST - II

Subject Code–23BBSBS10002 Engineering Physics

Time: 1.30 hrs | Maximum: 30 Marks

PART – A (2 x 5 = 10 Marks)

Q.1. Answer ALL questions

		CO #	Blooms Level
a.	Define pyroelectric, piezoelectric and ferroelectric material.	3	2
b.	What is the acronym for Laser? Write properties of Laser.	4	2
c.	The critical temperature for mercury with an isotopic mass of 179.5u is 4.215 K. Calculate the critical temperature when isotopic mass changes to 199.4u	4	2
d.	Explain about different parts of optical fibre.	4	1
e.	What is crystal defect? Explain Schottky and Frenkel defect.	3	2

PART – B (10 x 2 = 20 Marks)

Answer ALL Questions

		Marks	CO#	Bloom Level
2.a.	Determine the reciprocal lattice of FCC lattice.	5	3	1
b.	Differentiate between Type-I and Type- II superconductor. Write any two application of superconductor.	5	3	2
	(OR)			
c.	Derive Bragg's law of X-ray diffraction in crystals.	5	3	1
d.	Write the properties of reciprocal lattice. A cubic crystal plane (122) with lattice parameters 9Å produces 2nd order diffraction with X-ray of wave length 2.5Å. Find the glancing angle.	5	3	2
3.a.	Discuss the working principle of a He-Ne Gas laser. Write application of He-Ne Gas Laser	5	4	2
b.	Differentiate among different types of magnetic materials with examples.	5	3	2
	(OR)			
c.	Write characteristics of Photoelectric effect. Ultraviolet radiation of wave length 3600Å incident on a potassium metal surface. If the photo electric work function of potassium is 2.2 eV, calculate (i) energy of each photon and (ii) stopping potential.	5	2	2
d	Sketch block diagram of Fibre Optics Communication Link (FOCL).	5	2	2

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B. Tech – 1st Semester (2023-2024): CYCLE TEST - II

BESBS1032– Basic Electrical and Electronics Engineering

(Common to all branches)

Time: 1.30 hrs | Maximum: 30 Marks

PART – A (2 x 5 = 10 Marks)

Q.1. Answer ALL questions		CO #	Blooms Level
a.	Provide concise definitions for knee voltage and static resistance	4	2
b.	Differentiate between P-type and N-type Semiconductors. Also name the doping materials used for their formation?	4	2,3
c.	What is a biased clipper?	4	2
d.	What are the Universal gates. Explain one Universal gate, providing its truth table as an example.	5	1, 2
e.	Provide examples of two practical applications for a function generator.	5	3

PART – B (10 x 2 = 20 Marks)

Answer ALL Questions		Marks	CO#	Blooms Level
2.a.	With a neat circuit diagram and waveforms explain the working of full wave bridge rectifier.	5	4	3,2
b.	What is a clamper? Explain working of a positive clamper with suitable diagram.	5	4	3,2
	(OR)			
c.	Explain VI Characteristic of a Semiconductor Diode with suitable graph.	5	4	3,2
d.	Explain the working of positive clamping circuit.	5	4	2
3.a.	Convert the following: (i) $(3A6.C58D)_{16} = (?)_8$, (ii) $(0.6875)_{10} = (?)_2$ (iii) Compute the 2's complement of $(101010)_2$.	5	5	3,4
b.	Explain working of a digital oscilloscope with suitable block diagram.	5	5	2,3
	(OR)			
c.	Convert the following: (i) $(1AD.E0)_{16} = (?)_{10} = (?)_8$, (ii) $(356.15)_8 = (?)_2 = (?)_{10}$ (iii) Compute the 2's complement of $(111001)_2$.	5	5	3,4
	Explain different parts of a CRO with suitable block diagram.	5	5	2

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B. Tech – 1st Semester (2023-2024): CYCLE TEST - II

BBSES1050– Programming for Problem Solving

(Common to all branches)

Time: 1.30 hrs | Maximum: 30 Marks

PART – A (2 x 5 = 10 Marks)

Q.1. Answer ALL questions		CO #	Blooms Level
a.	State the difference between recursive and iterative process	3	2
b.	Write the syntax and example on function prototype deciaration.	2	1
c.	State the difference between formal parameters and actual parameters.	2	2
d.	What is the difference between strcmp() and strncmp() functions with an example?	3	1
e.	Distinguish local variable and global variable	1	2

PART – B (10 x 2 = 20 Marks)

Answer ALL Questions		Marks	CO#	Blooms Level
2.a.	What are the function categories? Explain all the categories with suitable examples	5	2	2
b.	Write a program to find the factorial of a given number using a recursive function.	5	3	2
	(OR)			
c.	Write a C program which contains three UDF's namely add(), subtract() and multiply(). Each function accepts two integers as their arguments and calculate and return the results.	5	3	2
d.	Write a program to find the sum of series 1+2+3+4+....+10 using a recursive function.	5	3	2
3.a.	Briefly explain all the storage classes and their characteristics.	5	4	2
b.	Explain the string handling functions: strlen(), strcpy(). Write a program to test a string is palindrome or not.	5	3	2
	(OR)			
c.	Write a program to perform matrix multiplication.	5	4	2
d.	Explain the string handling functions: strcat() and strrev(). Write a program to compare two strings and show whether they are equal or not.	5	3	2

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B. Tech – 1st Semester (2023-2024): CYCLE TEST - II

23BBSHS10002– HVPE

(Common to all branches)

Time: 1.30 hrs | Maximum: 30 Marks

PART – A (2 x 5 = 10 Marks)

Q.1. Answer ALL questions		CO #	Blooms Level
a.	What are the four orders in nature?	3	2
b.	How do you establish harmony at the level of Self and Body?	3	1
c.	Write the characteristics of 'I' or Self?	3	2
d.	What do you mean by Holistic Perception?	4	1
e.	What is natural acceptance?	4	2

PART – B (10 x 2 = 20 Marks)

Answer ALL Questions		Marks	CO#	Blooms Level
2.a.	Illustrate the inter-connectedness and mutual fulfilment in four orders of nature with examples.	5	3	2
b.	How will you create harmony in nature? Discuss.	5	3	2
	(OR)			
c.	"I am the seer, doer and enjoyer. The body is my instrument" – Explain.	5	3	2
d.	What is our present attitude towards the body? What are its consequences?	5	3	2
3.a.	Explain the difference and similarities between pranic order and animal order.	5	4	2
b.	How are we disturbing the balance in nature?	5	4	2
	(OR)			
c.	Distinguish between the needs of the Self and the needs of the Body.	5	4	2
d.	How can you say that the activities in 'I' are continuous?	5	4	2

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B. Tech – 1st Semester (2023-2024): CYCLE TEST - II

Subject Code–23BBSHS11001 Subject Name-CESS

(Common to all branches)

Time: 1.30 hrs | Maximum: 30 Marks

PART – A (2 x 5 = 10 Marks)

Q.1. Answer ALL questions	CO #	BL
a. Define Corporate Communication.	3	2
b. Explain External and Internal communication.	3	1
c. Discuss about the Soft Skills.	3	2
d. Differentiate Soft Skills and Hard Skills.	4	1
e. Explain Networking Skills.	4	2

PART – B (10 x 2 = 20 Marks)

Answer ALL Questions	Marks	CO#	BL
2.a. Discuss about the 7Cs of communication.	5	3	2
b. Elaborate on the direction of communication.	5	3	2
(OR)			
c. Explain the 10 Cs of Non-Communication	10	3	2
3.a. Discuss about the challenges one might face in a professional organization.	5	4	2
b. Elaborate on the Important of Soft Skills.	5	4	2
(OR)			
c. Explain lateral Thinking skills and its benefits.	5	4	2
d. Discuss the importance of ICT in education.	5	4	2