Printed Pages: **Mid Semester Test-1** **UID No:** 23BCB100

Academic year 2023 – 2024

Program Name/Code: Bachelor of Engineering

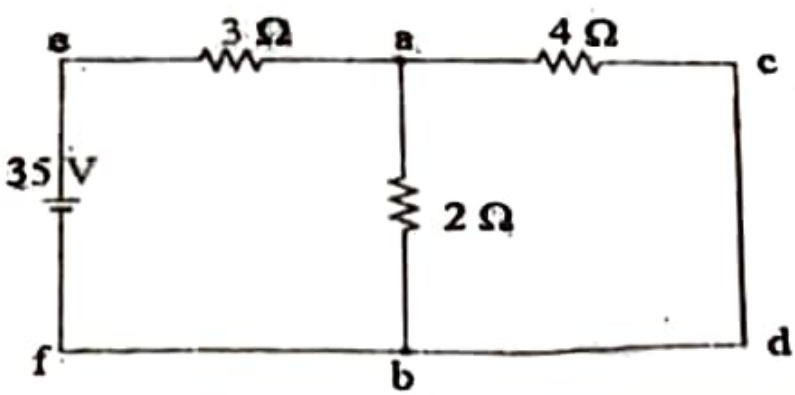
Semester:1st

Subject Title: Principles of Electrical Engineering

Subject Code: 23ELH-102

Time: 1 Hour **Maximum Marks: 20**

Instructions: Attempt all questions

Q. No	Statement	CO mapping
	Section A 5 x 2 = 10 marks	
1	Differentiate between linear and non-linear elements with their examples.	CO1
2	Show how an electric network can be converted into its nortons' equivalent circuit?	CO3
3	Define form factor with its formula.	CO3
4	Discuss power triangle with its diagram and write expression for apparent power, active power and reactive power with their units.	CO2
5	_If an AC current is given in the form i= {0.5 sin (314t)} then determine its form factor and peak factor.	CO3
	Section B 2 x 5 = 10 marks	
6	Analyze AC waveform of electrical voltage then determine an expression for form factor and peak factor.	CO4
7	Determine the value of unknown current in 2 ohm resistance by using kirchhoff's laws. 	CO1

Printed Pages: Mid Semester Test-1 UID No: 23BCE

Academic year 2023 – 2024

Program Name/Code: Bachelor of Engineering

Semester:1st

Subject Title: Discrete Mathematics

Subject Code: 23SMT-123

Time: 1 Hour Maximum Marks: 20

Instructions: Attempt all questions

Q. No	Statement	CO mapping
	Section A 5 x 2 = 10 marks	
1	Consider the set A= {4,9,16,36}. Is the relation divides a partial order relation.	CO1
2	Explain subgroup with example	CO1
3	Define Cartesian product of sets	CO2
4	If R = {(a,b), (b,c), (c,a)} and A={ a, b, c} , then find reflexive, symmetric and transitive closure of R by the composition of relation R.	CO2
5	Let R⊂N×N defined by R={(x, y) : $x \in N$, $y \in N$, $2x + y = 41$}. Find domain, range of R and check if R is an equivalence relation?	CO2
	Section B 2 x 5 = 10 marks	
6	If R and S are two symmetric relations then show that R∩S is also symmetric relation. Also show with the help of example that R∪S is not symmetric relation.	CO1
7	(i) (a) Given A= {1,2,3,4} and B= {x,y,z} Let R be the relation from A to B : R= {(1,y) , (1,z) , (3,y) , (4,x) , (4,z) } (a) Determine the matrix of the relation (b) Draw the arrow diagram of R (c) Find the inverse of relation (d) Determine the domain and range of R	CO1

Printed Pages: Mid Semester Test-1 UID No: 23
Academic year 2023 – 2024

Program Name/Code: Bachelor of Engineering
Semester: 1st
Subject Title: Business Communication & Value Science - I
Subject Code: 23PCH-102
Time: 1 Hour
Instructions: Attempt all questions Maximum Marks:

Q. No	Statement	CO map
	Section A 5 x 2 = 10 marks	
1	What do you mean by encoding and decoding in the communication process?	CO1
2	Explain any two psychological barriers to effective communication.	CO1
3	Explain Cornell's Note-Taking Method with the help of a diagram.	CO5
4	Explain the importance of coherence in paragraph writing.	CO2
5	Use the Comparative or Superlative form of the adjectives in **brackets**. 1. My mum is the _____(good) cook in the world. 2. Who is the_____ (famous) singer in your country? 3. I think Men in Black 1 was_____(funny) than Men in Black 3. 4. Do you think the Harry Potter films are_____(good) than the books?	CO2
	Section B 2 x 5 = 10 marks	
6	Fill the gaps with 'a', 'an', 'the' or 'X' (no article). Frank Crawford is _____ American citizen. He is also _____ FBI agent whose qualifications include _____ M.A. and _____ Ph.D. Because his father was _____ M.P. in _____ England, Frank often sees things from _____ European perspective. He strongly supports _____ idea of _____ united Europe. He was recently in London for _____ one-day conference on organized crime, and he gave a speech that lasted an hour.	CO1
7	Write a paragraph (200-250 words) on the topic "How is Internet affecting our intelligence?"	CO5

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Academic year 2023 – 2024

Program Name/Code: Bachelor of Engineering

Semester:1st

Subject Title: Physics For Computer Science

Subject Code: 23SPH-142 Maximum Marks: 20

Time: 1 Hour

Instructions: Attempt all questions

Q. No	Statement	CO mapping
	Section A 5 x 2 = 10 marks	
1	Define forced oscillation. Give an example.	CO1
2	Write down the equation of time period for simple harmonic oscillator	CO1
3	Can we perform double slit experiment with UV light. give reason	CO2
4	Define the term 'coherent sources' which are required to produce interference pattern in Young's double slit experiment	CO2
5	Which wave front is used in Fraunhofer diffraction?	CO2
	Section B 2 x 5 = 10 marks	
6	A body of mass 0.1 kg is undergoing simple harmonic motion of amplitude 1m and period of 0.2 sec. If the oscillation is produced by a spring what will be the maximum value of the force and force constant of the spring?	CO1
7	How are Newton's rings formed, Why are they circular, What if sodium light is replaced with white light?	CO1

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Mid Semester Test-1
Academic year 2023 – 2024

UID No: 23BCC...

Program Name/Code: Bachelor of Engineering
Semester:1st
Subject Title: Statistics, Probability and Calculus
Subject Code: 23SMT-124
Time: 1 Hour

Maximum Marks: 20

Instructions: Attempt all questions
Scientific calculator is allowed

Q. No	Statement	CO mapping
	Section A 5 x 2 = 10 marks	
i	Discuss the relationship between Variance and standard deviation along with formula?	CO1
2	If the midpoints are 10, 15, 20, 25 and 30. Then find the class interval is the difference between them	CO4
3	If the arithmetic mean of x, x + 3, x + 6, x + 9 and x + 12 is 10, then x = ?	CO4
4	In a week the prices of a bag of rice were 350,280,340,290,320, 310,300. Then find range	CO1
5	Calculate Mode of the following data: X 1 2 3 4 5 6 7 8 9 Y 8 10 11 16 20 25 15 9 6	CO1
	Section B 2 x 5 = 10 marks	
6	Calculate Standard Deviation. Ages (in years) 20-30 30-40 40-50 50-60 60-70 70-80 80-90 No. of members 3 61 132 153 140 51 2	CO4
7	If the mean of the following data is 17.45. Determine the value of p. X 15 16 17 18 19 20 Y 3 8 10 p 5 4	CO2

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Academic year 2023 – 2024

Program Name/Code: Bachelor of Engineering (Computer Science and Engineering) (Computer Science and Business Systems) (In association with TCS)

Semester: 1st

Subject Title: Fundamentals of Computer Science

Subject Code: 23CSH-104

Maximum Marks: 20

Time: 1 Hour

Instructions: Attempt all questions

Q. No	Statement	CO mapping
	Section A 5 x 2 = 10 marks	
1	Usage of Format Specifiers? justify with the help of example?	CO1
2	Generate an algorithm to find the largest of 3 numbers?	CO2
3	Explain the role of the main function in a C program.	CO1
4	Sate the significance of Relational Operator?.	CO3
5	Explain sizeof() operator with the help of Syntax?	CO3
	Section B 2 x 5 = 10 marks	
6	Write a program in C++ to find the grade of a student. You must enter marks of five subjects and then calculate the average marks (out of 100) and then apply the following grading criteria. Grade >= 90 Grade A Grade >= 80 Grade B Grade >= 70 Grade C Grade >=60 Grade D	CO3
7	WAP to show the functioning of all types of Bitwise operators and also discuss the precedence and associativity of operator?	CO4