

Part - B ($2 \times 4 = 8$ Marks)
Answer any Two Questions

Maths CT-1

Question

Q.No.	Question	Marks	CO	BL												
6	A random variable X has the following probability function: <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>X</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr> <td>P(x)</td><td>k</td><td>2k</td><td>5k</td><td>7k</td><td>9k</td></tr> </table>	X	0	1	2	3	4	P(x)	k	2k	5k	7k	9k	4	1	3
X	0	1	2	3	4											
P(x)	k	2k	5k	7k	9k											
7	Find (i) k (ii) $P(X \leq 3)$ Let X be a random variable with probability density function $f(x) = \begin{cases} 3x, & 0 < x < 1 \\ 0, & \text{Otherwise} \end{cases}$. Find the probability density function of $Y = 4X + 3$.	4	1	2												
8	If a random variable has the moment generating function $M_X(t) = \frac{2}{2-t}$, determine the mean & Variance of X.	4	1	4												

Part - C ($1 \times 12 = 12$ Marks)
Answer Any one question

No.	Question	Mark s	CO	BL	I																		
	(a) A discrete random variable X has the probability function given below: <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>X</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> <tr> <td>P(x)</td><td>0</td><td>k</td><td>2k</td><td>2k</td><td>3k</td><td>k^2</td><td>$2k^2$</td><td>$7k^2 + k$</td></tr> </table>	X	0	1	2	3	4	5	6	7	P(x)	0	k	2k	2k	3k	k^2	$2k^2$	$7k^2 + k$	12	1	3	2.1
X	0	1	2	3	4	5	6	7															
P(x)	0	k	2k	2k	3k	k^2	$2k^2$	$7k^2 + k$															
	Find (i) the value of k (ii) $P(1.5 < X < 4.5 / X > 2)$ (iii) the cumulative distribution function of X (iv) the smallest value of λ for which $P(X \leq \lambda) > \frac{1}{2}$	12	1	4	2.1.3																		
	(OR)																						
	(b) The probability density function of a continuous random variable X is given by $f(x) = \begin{cases} ax & ; 0 \leq x < 1 \\ a & ; 1 \leq x < 2 \\ 3a - ax & ; 2 \leq x < 3 \\ 0 & ; \text{otherwise} \end{cases}$																						
	Find (i) 'a' (ii) $P(X < 1.5)$ (iii) Cumulative distribution function																						

PART-B (2x4= 8 marks)

ANSWER ANYTWO QUESTIONS

CC CT-I

Question

Q.No.	Question	Marks	CO	BL
6.	For 'n' devices in a network, design a diagram with the number of cable links required for a mesh, ring, bus, and star topology?	4	2	3
7.	Explain the network that covers geographic areas like district or cities.	4	1	1
8.	Compare OSI and TCP/IP model.	4	2	2

Part-C (1 x 12 = 12 Marks)

Answer the Question

Q.No.	Question	Marks	CO	BL	PI
9a	a) Explain the functions of Network layer and Data link layer with a necessary diagram. b) Define transmission mode and its types	8	2	2	1.4.2
9b	(OR) a) Describe the different types of switching techniques with suitable diagram. b) Explain, why is parallel data usually faster than serial data?	4	1	1	1.2.1
		8	1	1	2.4.1
		4	2	2	1.4.3

DAA CT-1

PART -B (2x4= 8 Marks)
ANSWER ANY TWO QUESTIONS

Q.No.	Questions	Marks	CO	BL	PI
6.	Write an algorithm for adding 'n' natural numbers and give its time and space complexity	4	1	1	1.7.1
7.	What is time and space complexity?	4	1	1	1.7.1
8.	Write a note on Recurrence relation.	4	1	1	2.6.3

PART- C (1x12= 12 Marks)
ANSWER ALL THE QUESTIONS

Q.No.	Question	Marks	CO	BL	PI
9.	a) i) Solve the following recurrence equation using backward substitution method $t_n = nt_{n-1}$ with initial condition $t_0 = 1$. ii) Mention the steps that need to be followed while designing and analysing algorithm.	6 6	1 1	3 2	2.5.3 2.5.2
	OR b) Explain the Insertion Sort algorithm and identify its running time using step count and operation count.	12	1	2	2.5.3

(OS CT-1)

PART B
ANSWER ANY TWO

Q.No.	Question	Marks	CO	BL	
6.	Define Process. What is the various process state?	4	1	1	2.
7.	Determine the actions taken by a kernel to context switch between processes.	4	1	3	
8.	Explain Critical Section Problem. Give an example.	4	1	2	2.5

PART C (1x12= 12)

Q.No.	Question	Marks	CO	BL	PI
	A) Explain the Evolution of Operating Systems. (or) B) Describe the Operations:Process creation and Process termination. Also specify the system calls used in Process creation and termination.	12	1	2	2.6.3
9.		12	1	1	3.7.1

3PM CT-1

PART B (2x4= 8)

ANSWER ANY TWO QUESTIONS

Q.No.	Question	Marks	CO	BL	P
6.	What is the need for software project management?	4	1	2	2.5
7.	List the different types of risk.	4	1	1	1.5
8.	Neatly Sketch V Process model.	4	1	1	2.5

PART C (1x12= 12)
ANSWER THE FOLLOWING

Q.No.	Question	Marks	CO	BL
9a.	Explain in detail the following s/w process models with a neat diagram. i) Evolutionary process model. ii) Incremental Process model. (OR)	12	1	2
9b.	Changes take place at any time during software engineering process. Demonstrate the processes involved in software configuration management	12	1	3

SE CT-I

✓ GP

Part - B (2X4 = 8 marks)
Answer Any 2 Questions

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6. Discuss the differences between the Two types of Social Engineering as analysed by Karl Popper.
 7. What is PPCI? Give an account of any 2 facets of Personal awareness.
 8. Briefly explain the types of Social change.

Part - C (1X12 = 12marks)

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9. What is Social change? Explain the various features and the causes of Social Change.

OR

10. a. Explain the types of Responsibilities with examples. (6)
b. Identify any major Social movement that happened in India in the last decade and explain its role in bringing a social change. (6)

APP CT-1

PARTB(2x4= 8)

ANSWER ANY TWO QUESTIONS

Q.No.	Question	Marks	C O	BL	PI
6.	Write a program to implement Fibonacci series using python.	4	1	3	3.5.6
7.	Write any three features of OOPS. Give example.	4	1	1	1.7.1
8.	Write a program that prompts the user to enter the number of students and each student's score, and displays the highest and second highest scores.	4	1	3	3.5.6

PARTC(1x12= 12)

ANSWER ANY TWO QUESTIONS

Q.No.	Question	Marks	C O	BL	PI
9.	(a) Explain in detail about the Features of object-oriented programming with example (OR) (b) Write a python program to get square and cube of a number using inheritance concept.	12	1	1	1.7.2

MATHS CT-2

Part - B (3×10=30 Marks)

Answer ALL Questions

No.	Question	Marks	CO	BL	PI																						
21	(a) Find the Moment Generating function of binomial distribution and hence find the mean and variance. (OR) (b) In a normal distribution, 7% of the items are under 35 and 89% are under 63. What is the mean and standard deviation of the distribution?	10	2	3	2.1.3																						
22	(a) Before increase in excise duty on tea, 400 people out of a sample of 500 persons were found to be tea drinkers. After an increase in duty, 400 people were tea drinkers out of a sample of 600 people. Test whether there is a significant difference in the consumption of tea or not. (OR) (b) Two independent samples X and Y of sizes 7 and 10 gave the following data: <table border="1"> <tr> <td>X</td><td>25</td><td>32</td><td>30</td><td>32</td><td>24</td><td>14</td><td>32</td><td></td><td></td><td></td></tr> <tr> <td>Y</td><td>24</td><td>34</td><td>22</td><td>30</td><td>42</td><td>31</td><td>40</td><td>30</td><td>32</td><td>35</td></tr> </table> Test whether there is a significant difference between two sample means.	X	25	32	30	32	24	14	32				Y	24	34	22	30	42	31	40	30	32	35	10	3	3	2.4.3
X	25	32	30	32	24	14	32																				
Y	24	34	22	30	42	31	40	30	32	35																	
23	(a) The number of monthly breakdown of a computer follows Poisson distribution with mean 1.8. Find the probability that the computer will function for a month (i) Without breakdown (ii) With only one breakdown (iii) With atleast one breakdown. (OR) (b) An IQ test was administered to 5 persons before and after they were trained. The results were as follows <table border="1"> <tr> <td>Candidates</td><td>I</td><td>II</td><td>III</td><td>IV</td><td>V</td></tr> <tr> <td>IQ before training</td><td>110</td><td>120</td><td>123</td><td>132</td><td>125</td></tr> <tr> <td>IQ after training</td><td>120</td><td>118</td><td>125</td><td>136</td><td>121</td></tr> </table> Test whether there is any significant difference in IQ after the training programme.	Candidates	I	II	III	IV	V	IQ before training	110	120	123	132	125	IQ after training	120	118	125	136	121	10	2	3	2.4.1				
Candidates	I	II	III	IV	V																						
IQ before training	110	120	123	132	125																						
IQ after training	120	118	125	136	121																						
		10	3	4	2.4.3																						

(CC CT-2)

PART B (3x10= 30)

ANSWER THE FOLLOWING QUESTIONS

Q.No	Question	Mar ks	CO	B L	PI
21(a)	An organization is granted with a IP address 192.16.2.0/24. The administrator wants to create 4 subnets. (Using class C address) Calculate the following. (i). Find the subnet mask (ii). No of hosts in each subnet (iii). First and last host addresses of each subnet. (iv). Network and broad cast address of each subnet.	10	2	3	2.4.1
(Or)					
21(b)	Discuss the classful addressing with relevant examples	10	2	3	2.4.1
22(a)	Explain the technique used in ASK and FSK	10	3	2	2.4.1
(Or)					
22(b)	Sketch the various guided media used for data transmission in computer networks.	10	3	3	2.4.1
23(a)	Define the router and explain its functionalities in detail	10	2	2	2.4.1
(Or)					
23(b)	Explain in detail about TDM and FDM	10	3	2	2.4.1

DAA CT-2

PART B (10x3= 30)
ANSWER ALL THE QUESTIONS

Q.No	Question	Marks	CO	BL	PI										
21A	Is Merge Sort a Stable sort? Illustrate this with the help of the following sequence of numbers: {1,3,4,6,7,3,4,8}	10	2	2	2.8.2										
[OR]															
B	Find the maximum and minimum elements of the Array using the divide-and-conquer method A= {13,14,16,20,8,4,7,45} and write its algorithm	10	2	3	2.8.1										
[OR]															
22A	Compute Huffman Coding for the set of symbols with greedy Approach and also Encode the text ABACABAD <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td></tr> <tr> <td>0.4</td><td>0.1</td><td>0.2</td><td>0.15</td><td>0.15</td></tr> </table>	A	B	C	D	E	0.4	0.1	0.2	0.15	0.15	10	3	2	3.6.1
A	B	C	D	E											
0.4	0.1	0.2	0.15	0.15											
[OR]															
B	Find the LCS between strings A and B using Dynamic Programming A: EXAMPLE B: APE and write its algorithm	10	3	3	2.8.4										
[OR]															
23 A	i) Solve the following recurrence using the simplified Master theorem: $T(n)=2T(n/2)+n$ ii) Write an algorithm for finding closest pair problem	5	2	2	2.8.3										
[OR]															
B	Using the Dynamic Programming approach, construct an optimal BST for the following keys: (do, if, int, while) with the following probability (0.1, 0.2, 0.4, 0.3)	10	3	2	3.8.2										

OS CT-2

PARTB(3x10= 30)

ANSWER ALL THE QUESTIONS

Q.No.	Question	Marks	CO	BL	PI
21.a.	Define semaphore. Explain the use of semaphore in synchronization problem with an example.	10	2	3	1.2.2
	(OR)				

Suppose that the following processes arrive for execution at the times indicated. Each process will run the listed amount of time. In answering the questions, use non-preemptive scheduling and base all decisions on the information you have at the time the decision must be made.

Process	Arrival Time	Burst Time
P1	0.0	8
P2	0.4	4
P3	1.0	1

21.b.

10

- a) Find the average turnaround time for these processes with the FCFS scheduling algorithm?
- b) Find the average turnaround time for these processes with the SJF scheduling algorithm?
- c) The SJF algorithm is supposed to improve performance, but notice that we chose to run process P1 at time 0 because we did not know that two shorter processes would arrive soon. Find what is the average turnaround time will be if the CPU is left idle for the first 1 unit and then SJF scheduling is used.

22.a.

10

Illustrate contiguous memory allocation schemes with examples.

(OR)

22.b.

10

Draw the diagram of segmentation memory management scheme and summarize its principle.

Assume that there are three resources, A, B, and C. There are 4 processes P0 to P3. At T0 we have the following snapshot of the system

Process	Allocation			Max			Available		
	A	B	C	A	B	C	A	B	C
P0	0	1	0	7	5	3	3	3	2
P1	2	0	0	3	2	2			
P2	3	0	2	9	0	2			
P3	2	1	1	2	2	2			
P4	0	0	2	4	3	3			

23.a.

10

Answer the following based on banker's algorithm:

- a) What is the content of need matrix? (3m)
- b) Is the system in a safe state? (4m)
- c) If a request from process P1 arrives for (1,0,0) can the request be granted immediately? (3m)

(OR)

23.b.

10

3

Describe the various techniques for structuring the page table in a page memory management scheme.

- b) Functional
c) Imperative
d) Procedural

Parallelism representation is critical to the success of

- 20 a) High-performance computing.
b) Low-performance computing
c) Scaling
d) Vectorization

1 3

APP CT-2

PART B (3 x 10 = 30)

ANSWER ALL THE QUESTIONS

Question

Q.No		Mark	C	B	L
21.a	i) Write a program to find sum of n numbers. ii) Write a program to get a list of characters and concatenate it to form a string and display.	10	2	2	
21.b	Create a table and perform select ,insert, delete ,update ,modify with SQL using python code	10	2	2	2
22.a	Design a window with two text input fields and another one label to display the result. There are two button objects with the captions Add and Subtract. The user is expected to enter the number in the two Entry widgets. The result of addition and subtraction are displayed in the label box.	10	6	3	4.3.1
22.b	Compare map ,reduce ,filter and lambda function with an example	10	3	1	5.3.2
23.a	Explain in detail about imperative paradigm with example	10	2	1	4.3.4
23.b	Describe the concept "Pool class" by importing a package pool	10	3	2	4.1.2

SET CT-2

PART B Answer all the questions (3 x 10=30 marks)

21. a. Define the concept of Zero waste management and elaborate 5 R's of Zero waste with relevant examples (OR)
b. Explain NGO and its types based on orientation and operation with examples
22. a. How do students demonstrate social responsibility? Explain the 4 facets of SRC from point of view of students with statements to support them. (OR)
b. i) Explain in detail the 4 types of CSR with suitable examples. (6mks)
ii) Give reasons why CSR is needed for the corporates. (4mks)
23. a. Define Social marketing and explain the features of Social marketing.
(OR)
b. Give an account of Social Responsibility Competency Profiles. (5mks)
Define CSR in the Companies Rules and write a note on Corporate Social Reporting (mandatory disclosure)(5mks)

SEPM CT-2, PART-B (3x10 = 30)

ANSWER ALL THE QUESTIONS

Q.No.	Question	Marks	CO	BL	PI
21 (a)	Explain the Characteristics of a good software design with a neat diagram	10	2	3	2.4.2
(Or)					
21 (b)	Design User Interfaces for online Examination System (minimum 5 webpage's and it should follow the golden rules to design good UI)	10	2	1	4.3.1
22 (a)	Explain in detail Deskcheck Peer review guidelines	10	3	2	12.3.1
(Or)					
22 (b)	Discuss in detail about A. Pair Programming B. Object oriented programming	10	3	2	4.3.2
23 (a)	What are different types of architectural styles exist for software and explain any one software architecture	10	2	3	1.4.1
(Or)					
23 (b)	Explain in detail Software Reuse	10	3	1	12.3.1

Q.No.	Question	Marks	CO	BL	PI																
21	<p>(a) Two independent samples of sizes 5 and 6 gave the following data:</p> <table border="1"> <tr><td>Sample I</td><td>21</td><td>24</td><td>25</td><td>26</td><td>27</td><td>-</td></tr> <tr><td>Sample II</td><td>22</td><td>27</td><td>28</td><td>30</td><td>31</td><td>36</td></tr> </table> <p>Test whether the samples are drawn from the same normal population.</p> <p style="text-align: center;">(OR)</p> <p>(b) Customers arrive at a watch repair shop according to a Poisson process at a rate of one per every 10 minutes and service time is an exponential random variable with mean 8 minutes.</p> <ul style="list-style-type: none"> (i) Find the average number of customers L_s in the shop. (ii) Find the average time a customer spends in the shop W_s. (iii) Find the average time that a customer spends in the queue W_q. (iv) Find the average number of customers in the queue L_q. (v) What is the probability that the server is idle? 	Sample I	21	24	25	26	27	-	Sample II	22	27	28	30	31	36	10	4	3	2.1.3		
Sample I	21	24	25	26	27	-															
Sample II	22	27	28	30	31	36															
22	<p>(a) The transition probability matrix of a Markov chain $\{x_n\}$, $n = 1, 2, 3, \dots$ having 3 states 1, 2 and 3 is $P = \begin{bmatrix} 0 & 0.1 & 0.5 \\ 0.6 & 0 & 0.4 \\ 0.3 & 0.4 & 0.3 \end{bmatrix}$</p> <p>and the initial distribution is $p^{(0)} = (0.7, 0.2, 0.1)$</p> <p>Find</p> <ul style="list-style-type: none"> (i) $P(X_2 = 3)$ (ii) $P(X_3 = 2, X_2 = 3, X_1 = 3, X_0 = 2)$ <p style="text-align: center;">(OR)</p> <p>(b) Two boys B_1 and B_2 and two girls G_1 and G_2 are throwing a ball from one to the other. Each boy throws the ball to the other boy with probability $\frac{1}{2}$ and to each girl with probability $\frac{1}{4}$. On the other hand, each girl throws the ball to each boy with probability $\frac{1}{2}$ and never to the other girl. In the long run, how often does each receive the ball ?</p>	10	5	3	2.4.3																
23	<p>(a) Fit a binomial distribution for the following using Chi Square test</p> <table border="1"> <tr><td>X</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> <tr><td>Y</td><td>5</td><td>18</td><td>28</td><td>12</td><td>7</td><td>6</td><td>4</td></tr> </table> <p style="text-align: center;">(OR)</p> <p>(b) The three state Markov chain is given by transition probability matrix</p> $P = \begin{bmatrix} 0 & \frac{2}{3} & \frac{1}{3} \\ \frac{1}{2} & 0 & \frac{1}{2} \\ \frac{1}{2} & \frac{1}{2} & 0 \end{bmatrix}$ <ul style="list-style-type: none"> (i) Classify the states of the Markov Chain. (ii) Find the steady state distribution of the chain. 	X	0	1	2	3	4	5	6	Y	5	18	28	12	7	6	4	10	4	3	2.4.1
X	0	1	2	3	4	5	6														
Y	5	18	28	12	7	6	4														

CC CT-3

PART - B (3x10= 30)

ANSWER THE FOLLOWING QUESTIONS

Q.No	Question	Mar ks	CO	BL	PI
21(a)	What do you mean by sliding window protocol? Distinguish between Go-back-N protocol and selective repeat protocol.	10	4	2	1.3.1
(Or)					
21(b)	Compare HDLC and PPP protocol and explain about frame format used in both protocols.	10	4	3	2.4.1
22(a)	Describe the working principle of Carrier sense multiple access with collision Detection (CSMA/CD)	10	4	3	2.4.1
(Or)					
22(b)	Explain about Routing information protocols and List out the characteristics of two versions	10	5	2	1.4.2
23(a)	Discuss how the link state routing uses Dijkstra's algorithm to update the Routing tables.	10	5	3	2.4.1
(Or)					
23(b)	Explain about the types of OSPF packet in detail.	10	5	2	1.4.2

OS CT-3

PART B (3 X 10 = 30)
ANSWER ALL THE QUESTIONS

Q. No.	Questions	Marks	C O	BL	PI
21	a) Explain in detail about thrashing and working set model OR b) Give a brief discussion about virtual memory and how OS handles the page fault effectively?	10	4	2	4.3.1
22	a) Consider a disk queue with requests for I/O to blocks on cylinders 98, 183, 41, 122, 14, 124, 65, 67. The head is initially at cylinder number 53. The cylinders are numbered from 0 to 199. What is the total head movement (in number of cylinders) incurred while servicing these requests for each of the following disk scheduling algorithms: i.FCFS ii. SSTF iii. SCAN iv. LOOK v. C-LOOK OR b) Explain the File system implementation and Directory implementation.	10	5	3	5.6.2
23	a) Consider a reference string: 4, 7, 6, 1, 7, 6, 1, 2, 7, 2. the number of frames in the memory is 3. Find out the number of page faults respective to: 1. Optimal Page Replacement Algorithm 2. FIFO Page Replacement Algorithm OR b) Explain the various Directory structure with advantages and disadvantages.	10	4	3	4.4.1
	a) Explain the various Directory structure with advantages and disadvantages.	10	5	2	5.4.1

APP CT-3

PART B (3 X 10= 30)

ANSWER ALL THE QUESTIONS

Q. No.	Question	Marks	C O	B L	PF
21a	Define logic programming and its features in details with an example	10	4	1	2.4.4
	OR				
21b	Give a brief explanation about Client Server connection using UDP with an example	10	4	1	3.4.2
22a	Explain in detail about the algebraic manipulations and calculus and perform expand, simplify, limits, differentiation , series, and integration with mathematical terms with the python code	10	5	2	2.4.4
	OR				
22b	Write a python Program to create an automata for Traffic Light	10	5	3	4.3.4
23a	Define socket, its types and write a python code to connect the Google using socket	10	4	2	3.4.2
	OR				
23b	Write a code using Tkinter(list box, button) widgets to create a daily task reminder that allows the user to add and delete entries	10	6	3	5.3.2

PART B (3X10= 30)
ANSWER ALL THE QUESTIONS

(PART CT-3)

Q.No	Question	Marks	CO	BL	PI
21 A	<p>Consider a graph $G = (V, E)$, Find the Hamiltonian circuit using backtracking method.</p> <p>[OR]</p>				

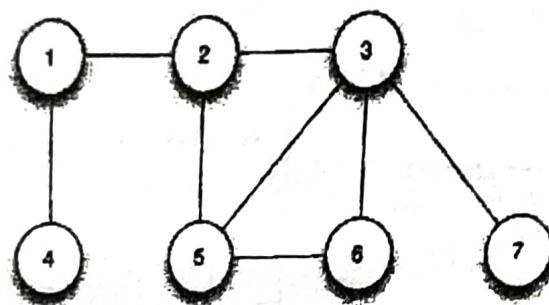
Solve the following Knapsack problem using Branch and Bound Technique. Assume W=12

Items	W _i	P _i
1	2	10
2	3	20
3	4	24

10 4

Find the Vertex Cover Problem for the given graph and write its Algorithm

22 A



10 5 2

[OR]

(i) What is Hiring Problem. Write a Procedure for Randomized Hiring Problem

5 5 2

(ii) Discuss the various Complexity Classes. Also give an example for each class

5

23 A

1	2	3	4
0	∞	3	∞
2	0	∞	∞
∞	7	0	1
6	∞	∞	0

10 4 2 2.8

[OR]

Consider the following sequences:

A: 1 3 7 1 2 4 3

B: 2 4 3

If A is the text hash code and B is the pattern hash code, Use Modulo Arithmetic 13 and apply the Rabin Karp Algorithm to find the pattern match. Show the intermediate steps.

10 5 2 3.8.2

(SE CT-3)

PART-B

Answer all the questions (3 x 10=30 marks)

21 (a) What are the core values of vision and mission?

(OR)

(b) What are the responsibilities of a student in a society?

22.(a) Explain the evolution and phases of corporate social responsibility in India.

(OR)

(b) Is understanding culture important? Brief the issues with colleagues in working space.

23 (a) What is social entrepreneurship? explain the types of social entrepreneurship.

(OR)

(b) What are the major impacts of social entrepreneurs in society?

SEPM CT-3

PART-B (3x10 = 30)

ANSWER ALL THE QUESTIONS

Q.No.	Question	Marks	CO	BL	PI
21 (a)	Elaborate in detail Test Strategy and Planning with neat sketch. (Or)	10	4	2	24.2
21 (b)	Explain the following in detail. (i) Risk Management (ii) Test Point Analysis	10	4	3	4.3.1
22 (a)	Describe in detail about the Software Maintenance Life Cycle and explain about its functions (Or)	10	5	2	12.3.1
22 (b)	Explain in detail about the Product Release Management with suitable example.	10	5	3	4.3.2
23 (a)	Explain the following in detail. (i) Effort Estimation and its importance (ii) Software Testing in Iterative Model	10	4	1	1.4.1
23 (b)	Categorize the Various types of Software Maintenance Model and explain its characteristics with example. (Or)	10	5	1	12.3.1