

# 1402\_IT\_DSE Sem-III\_EM III\_PHCET

1) The Question Paper will have MCQs (for 20 marks) and Subjective/Descriptive Questions (for 60 marks).

2) MCQ correct options and subjective question answers to be written on A4 size papers. Scan all pages of answer papers of Q.1 to Q.4 and create single file in pdf format to upload in the link given.

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1402\_IT\_DSE  
Sem-III\_EM  
III\_PHCET

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Untitled Title

Q1.) 1 &amp; 2

1.	The Laplace transform of $\int_0^t \frac{1-e^{-mu}}{u} du$ is	re
Option A:	$\frac{1}{s} \log\left(\frac{s-a}{s}\right)$	
Option B:	$\frac{2}{s} \log\left(\frac{s-a}{s}\right)$	
Option C:	$\frac{3}{s} \log\left(\frac{s-a}{s}\right)$	
Option D:	$\frac{4}{s} \log\left(\frac{s-a}{s}\right)$	
2	If $f(x) = \sqrt{1 - \cos x}$ , $0 < x < 2\pi$ then find $a_0$ .	
Option A:	$\frac{2\sqrt{2}}{\pi}$	
Option B:	$\frac{\sqrt{2}}{\pi}$	
Option C:	$\frac{\sqrt{2}}{3\pi}$	
Option D:	$\frac{1}{\pi}$	

Q1.) 3 &amp; 4

3.	If $f(z) = u + iv$ is analytic then
Option A:	$u$ is harmonic but $v$ may or may not be harmonic.
Option B:	$v$ is harmonic but $u$ may or may not be harmonic.
Option C:	$u$ and $v$ both need not be harmonic.
Option D:	$u$ and $v$ both harmonic.
4.	If $\text{Var}(X) = 4$ then $\text{Var}(3x+5)$ is
Option A:	12
Option B:	20
Option C:	26
Option D:	36

Q1.) 5, 6 &amp; 7

5.	If $f(x)$ is an even function in the interval $(-l, l)$ then in the Fourier series expansion of $f(x)$
Option A:	$a_n = 0, b_n = 0.$
Option B:	$a_n = 0, a_0 = 0.$
Option C:	$b_n = 0.$
Option D:	$a_0 = 0, b_n = 0.$
6	If $b_{yx} = 0.7764$ , $b_{xy} = 1.2321$ then coefficient of correlation
Option A:	0.9781
Option B:	0.6291
Option C:	1.2307
Option D:	0.0023
7	Find the constants a, b, c, d if $f(z) = x^2 + 2axy + 2by^2 + i(2cx^2 + dxy + y^2)$
Option A:	$a = 1, b = -\frac{1}{2}, c = -\frac{1}{2}, d = 2.$
Option B:	$a = 0, b = -\frac{1}{2}, c = -\frac{1}{2}, d = 2.$
Option C:	$a = 1, b = -2, c = -\frac{1}{2}, d = 1.$
Option D:	$a = 3, b = -\frac{1}{2}, c = -\frac{1}{2}, d = 2.$

Q1.) 8, 9 &amp; 10

8	If $X_1$ has mean 4 and variance 9 and If $X_2$ has mean $-2$ and variance 4 and they are independent then $Var(2X_1 + X_2 - 3)$ is
Option A:	41
Option B:	40
Option C:	36
Option D:	37
9	Suppose two fair dice are thrown and sum of the numbers on dice is noted, what is the probability that the sum can be equal to 6, 7, 8 or 9.
Option A:	2/9
Option B:	5/9
Option C:	4/9
Option D:	7/9
10.	Let X denotes the demand in quintals and Y denotes the price in rupees per kg. Also if $\bar{X} = 68$ , $\bar{Y} = 69$ , $\sum (X - \bar{X})^2 = 36$ , $\sum (Y - \bar{Y})^2 = 44$ , $\sum (X - \bar{X})(Y - \bar{Y}) = 24$ then the Karl Pearson's coefficient (r) of correlation is
Option A:	0.4030
Option B:	0.5030
Option C:	0.7030
Option D:	0.6030

Q2.

Q2	Solve any Four out of Six 5 marks each
A	If $L\{\sin \sqrt{t}\} = \frac{\sqrt{\pi}}{2s\sqrt{s}} e^{-1/(4s)}$ , find $L\{\sin 2\sqrt{t}\}$
B	Find the inverse Laplace transform of $\frac{s+29}{(s+4)(s^2+9)}$
C	Find the Fourier series for $f(x)$ in $(0, 2\pi)$ where $f(x) = \begin{cases} x, & 0 < x \leq \pi \\ 2\pi - x, & \pi \leq x < 2\pi \end{cases}$
D	If $v = 3x^2y + 6xy^2 - y^3$ , show that $v$ is harmonic function and find the corresponding analytic function.
E	Calculate the value of rank correlation coefficient from the following data regarding marks of 6 students in Statistics and Mathematics in a test: Marks : Statistics : 40, 42, 45, 35, 36, 39 Marks : Mathematics : 46, 43, 44, 39, 40, 43
F	Three factories A, B, C produces 30%, 50% and 20% of the total production of an item. Out of their production 80%, 50% and 10% are defective. An item is chosen at random and found to be defective. Find the probability that it was produced by the factory A.

Q3.

<b>Q3</b>	<b>Solve any Four out of Six</b>	<b>5 marks each</b>
A	By using Laplace transform, prove that $\int_0^{\infty} e^{-t} \cdot \frac{\sin^2 t}{t} dt = \frac{1}{4} \log 5$	
B	Using convolution theorem, find the inverse Laplace transform of $\frac{1}{(s-2)^4(s+3)}$	
C	Obtain Fourier series for $f(x) = x + x^2; -1 < x < 1$	
D	Find an analytic function $f(z) = u + iv$ , where $u + v = e^x(\cos y + \sin y)$	
E	State true or false with justification. "If two lines of regression are $x + 3y - 5 = 0$ and $4x + 3y - 8 = 0$ , then the correlation coefficient is $+0.5$ ".	
F	If the mean of the following distribution is 16. Find $m, n$ and variance. $X : 8, 12, 16, 20, 24$ $P(X) : 1/8 \quad m \quad n \quad 1/4 \quad 1/12$	

Q4.

<b>Q4</b>	<b>Solve any Four out of Six</b>	<b>5 marks each</b>
A	Find the Laplace transform of $e^{-4t} \int_0^t u \sin 3u du$	
B	Find the inverse Laplace transform of $\tan^{-1}\left(\frac{a}{s}\right)$	
C	Obtain half- range sine series for $f(x)$ where $f(x) = \begin{cases} x, & 0 < x < (\pi/2) \\ \pi - x, & (\pi/2) < x < \pi \end{cases}$	
D	Find the orthogonal trajectory of the family of curves given by $2x - x^3 + 3xy^2 = a$	
E	Fit a straight line to the following data. $(x, y) = (-1, -5), (1, 1), (2, 4), (3, 7), (4, 10)$ Estimate $y$ when $x = 7$	
F	A random variable $X$ has the following probability density function $f(x) = \begin{cases} ke^{-kx}, & x > 0, k > 0 \\ 0, & elsewhere \end{cases}$ Find the moment generating function and hence, the mean and variance.	

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## 1602\_IT\_DSE Sem-III\_DSA\_PHCET

1) The Question Paper will have MCQs (for 20 marks) and Subjective/Descriptive Questions (for 60 marks).

2) MCQ correct options and subjective question answers to be written on A4 size papers. Scan all pages of answer papers of Q.1 to Q.4 and create single file in pdf format to upload in the link given.

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### Questions

1) The Question Paper will have MCQs (for 20 marks) and Subjective/Descriptive Questions (for 60 marks).

2) MCQ correct options and subjective question answers to be written on A4 size papers. Scan all pages of answer papers of Q.1 to Q.4 and create single file in pdf format to upload in the link given.



Q1) 1,2,3

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	The stack data structure operate in this manner?
Option A:	LIFO
Option B:	FIFO
Option C:	FILO
Option D:	LILO
2.	Which of the following functions put elements on top of the stack?
Option A:	Pop()
Option B:	Push()
Option C:	Display()
Option D:	Peek()
3.	A type of queue where deletion is allowed from both sides of the queue?
Option A:	Input Restricted Deque
Option B:	Output Restricted Deque
Option C:	Priority Queue
Option D:	Circular queue

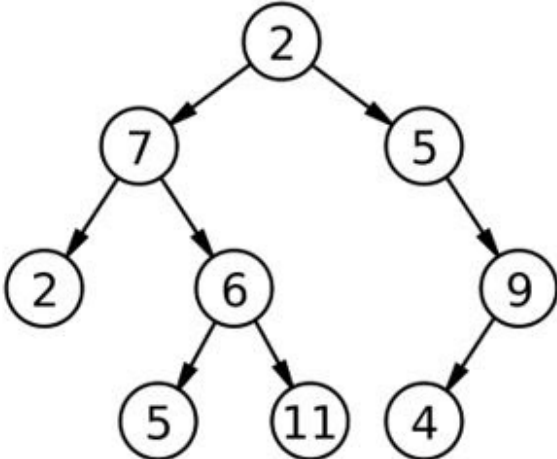
Q1) 4,5,6,7

4.	Degree of a leaf node is?
Option A:	0
Option B:	1
Option C:	2
Option D:	3
5.	A binary tree of height H has at least H nodes and at most ? number of nodes.
Option A:	2H
Option B:	$2^H$
Option C:	$2^{(H-1)}$
Option D:	$2^{(H+1)} - 1$
6.	In a graph the total number of edges a vertex has is called as?
Option A:	In degree
Option B:	Out degree
Option C:	Degree
Option D:	Weight
7.	A graph where there exists a path between all vertex pairs is called as?
Option A:	Completed graph
Option B:	Connected graph
Option C:	Directed graph
Option D:	Digraph

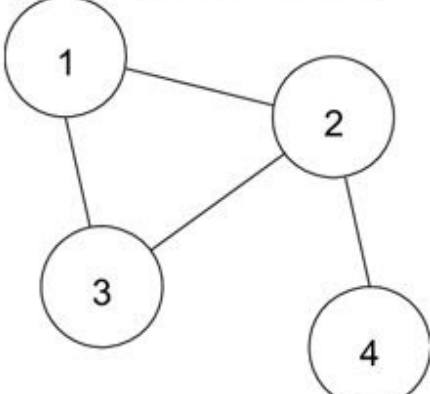
Q1) 8,9,10

8.	In the best of linear search, how many comparisons will be made, in case of N data set?
Option A:	0
Option B:	1
Option C:	N-1
Option D:	N
9.	If the data set is {123, 12, 23, 22, 54, 56, 45}, storage size is 10 where indexing starts from 0 then in hashing by "folding method", how many collisions will occur? Fold the number using the sum of digits till it becomes a singular digit.
Option A:	0
Option B:	1
Option C:	2
Option D:	3
10.	Which data structure is used for the application of implementation of simulation of scheduling of Limited resources?
Option A:	Stack
Option B:	Queue
Option C:	Heap
Option D:	Trees

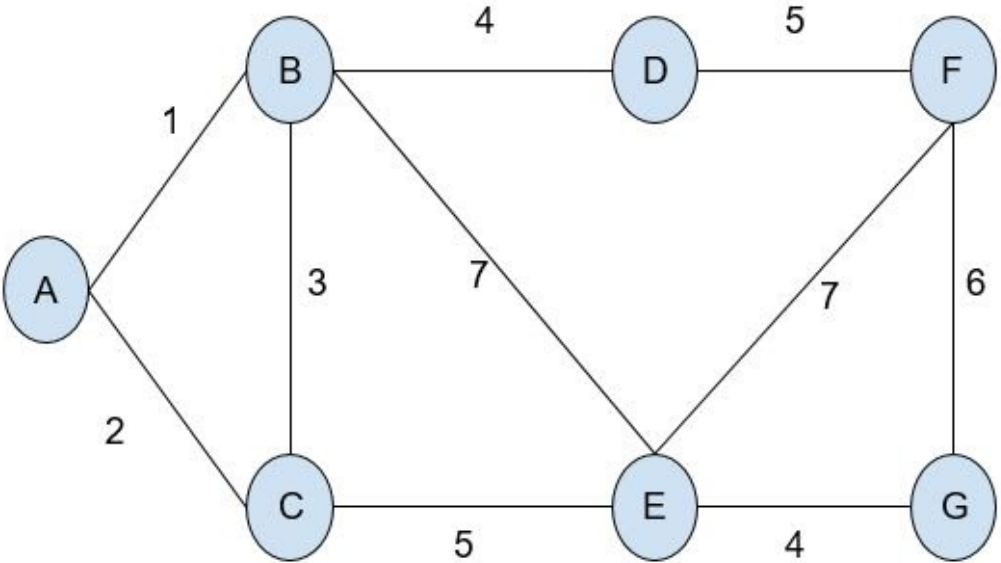
Q2)

<b>Q2.(20 Marks)</b>	<b>Solve any Four out of Six</b> <span style="float: right;"><b>5 marks each</b></span>
A	With an example explain the QUEUE data structure and operations on it.
B	<p>What are the different tree traversal methods? Write an algorithm for postorder traversal and find the postorder traversal path for the following tree.</p>  <pre> graph TD     2((2)) --&gt; 7((7))     2 --&gt; 5((5))     7 --&gt; 2_2((2))     7 --&gt; 6((6))     6 --&gt; 5_2((5))     6 --&gt; 11((11))     5 --&gt; 9((9))     9 --&gt; 4((4)) </pre>
C	Write an algorithm/ pseudo code to multiply two polynomials using the linked list. Explain with an example.
D	Write an algorithm for function call as a stack application and give an example to explain the same.
E	Write an algorithm for Binary search and perform the binary search for 67 in the data set 69, 88, 19, 58, 46, 12, 16, 4, 67
F	Construct the Huffman tree for SEMESTERTHREE and state the bits saved, in case each character requires 8 bits.

Q3.

<b>Q3.(20 Marks)</b>	<b>Solve any Four out of Six</b> <span style="float: right;"><b>5 marks each</b></span>
A	With an example explain the circular queue data structure. Also write computer world applications of circular queue.
B	What is B-Tree, step by step construct B-tree for following data 23, 12, 25, 01, 45, 63, 27, 29 for order 3.
C	<p>What are the two different graph representation techniques? Also represent the following graph in both ways.</p>  <pre> graph TD     1((1)) --- 2((2))     1((1)) --- 3((3))     2((2)) --- 3((3))     2((2)) --- 4((4))   </pre>
D	With examples explain the following tree terminologies leaf node, ancestor nodes, outdegree of node, siblings and digital search tree.
E	What is a collision? What are collision resolution techniques? Explain with an example separate chaining collision resolution technique.
F	Write an algorithm to convert infix expression to postfix expression. Using the same algorithm convert the following infix expression to postfix expression. (A * (B + (C / D) ) )

Q4.

Q4.(20 Marks)	Solve any Two out of Three <span style="float: right;">10 marks each</span>
A	With an example explain the working of singly linked list and following operations on singly linked list. <b>i. Insertion (all 3 Cases) ii. Deletion(all 3 Cases) iii. Display</b> Proper diagrammatic representations of operations on the linked list, as mentioned above, are also expected.
B	<p>Write Prim's algorithm and Kruskal's algorithm to find Minimum Spanning Tree (MST). Also for the given graph below, find the MST using Prim's algorithm and Kruskal's algorithm, both. Specify the cost at each step, and total weight.</p> 
C	Define an AVL Tree. Construct an AVL tree for the following dataset: 38, 33, 65, 11, 26, 25, 41, 32, 27, 22, 24, 15, 29 Mention the rotations, if any, at each step.

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# 1802\_IT\_DSE Sem-III\_DBMS\_PHCET

1) The Question Paper will have MCQs (for 20 marks) and Subjective/Descriptive Questions (for 60 marks).

2) MCQ correct options and subjective question answers to be written on A4 size papers. Scan all pages of answer papers of Q.1 to Q.4 and create single file in pdf format to upload in the link given.

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## Questions

1) The Question Paper will have MCQs (for 20 marks) and Subjective/Descriptive Questions (for 60 marks).

2) MCQ correct options and subjective question answers to be written on A4 size papers. Scan all pages of answer papers of Q.1 to Q.4 and create single file in pdf format to upload in the link given.

Untitled Title



Q1) 1,2,3

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Which of the following gives a logical structure of the database graphically?
Option A:	Entity-relationship diagram
Option B:	Entity diagram
Option C:	Database diagram
Option D:	Architectural representation
2.	An entity set that does not have sufficient attributes to form a primary key is termed a
Option A:	Strong entity set
Option B:	Variant set
Option C:	Weak entity set
Option D:	Variable set
3.	Which of the following is used to denote the selection operation in relational algebra?
Option A:	Pi (Greek)
Option B:	Sigma (Greek)
Option C:	Lambda (Greek)
Option D:	Omega (Greek)

Q1) 4,5,6, 7

4.	The _____ operation, denoted by $-$ , allows us to find tuples that are in one relation but are not in another.
Option A:	Union
Option B:	Set difference
Option C:	Difference
Option D:	Intersection
5.	Which of the following is not a valid SQL datatype?
Option A:	FLOAT
Option B:	NUMERIC
Option C:	STRING
Option D:	CHARACTER
6.	Which of the following are DCL commands?
Option A:	COMMIT and ROLLBACK
Option B:	UPDATE and TRUNCATE
Option C:	SELECT and INSERT
Option D:	GRANT and REVOKE
7.	SQL Views are also known as
Option A:	Simple tables
Option B:	Virtual tables
Option C:	Complex tables
Option D:	Actual Tables



Q1) 8,9,10

8.	Which of the following is not a valid aggregate function?
Option A:	COUNT
Option B:	COMPUTE
Option C:	SUM
Option D:	MAX
9.	A table is in 3NF if it is in 2NF and if it has no _____
Option A:	Functional Dependencies
Option B:	Transitive Dependencies
Option C:	Trivial Functional Dependency
Option D:	Multivalued Dependencies
10.	Every time attribute A appears, it is matched with the same value of attribute B, but not the same value of attribute C. Therefore, it is true that:
Option A:	$A \rightarrow B$
Option B:	$A \rightarrow C$
Option C:	$A \rightarrow (B, C)$
Option D:	$(B, C) \rightarrow A$

Q2

<b>Q2. (20 Marks )</b>	
<b>A</b>	<b>Solve any Two 5 marks each</b>
i.	Explain types of attributes in ER model with suitable examples.
ii.	What are the types of keys in DBMS? Explain with suitable examples.
iii.	Explain recursive and nested queries.
<b>B</b>	<b>Solve any One 10 marks each</b>
i.	Explain DDL and DML commands in SQL.
ii.	Explain relational algebra operations in detail.

Q3

<b>Q3.</b> <b>(20 Marks )</b>	
<b>A</b>	<b>Solve any Two</b> <b>5 marks each</b>
i.	What are generalization and specialization in DBMS?
ii.	Explain DCL commands in SQL.
iii.	Write a short note on functional dependency.
<b>B</b>	<b>Solve any One</b> <b>10 marks each</b>
i.	Consider the following employee database Employee(ename,street,city,date_of_joining) Works(ename,company_name,salary) Company(company_name,city) Manages(ename,manager_name) Write SQL queries for following statements: a) List name of companies starting with letter "C" b) Change the city of employee "Arjun" to "Mangalore". c) Find the number of employees in each city with date_of_joining as "01Jan2021" d) Display ename,manager_name,street,city only for the employees having manager.
ii.	Draw ER Diagram for Banking Enterprise (state assumptions clearly) and convert the ER diagram into relational model.

Q4

<b>Q4.</b> <b>(20 Marks )</b>	
<b>A</b>	<b>Solve any Two</b> <b>5 marks each</b>
i.	What is an Entity? Explain types of entity with suitable examples.
ii.	Explain cursors in SQL.
iii.	Differentiate ER and EER Diagram.
<b>B</b>	<b>Solve any One</b> <b>10 marks each</b>
i.	Explain 1NF,2NF and 3NF with suitable example.
ii.	Explain functions and procedures in SQL.

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## 2102\_IT\_DSE-Sem-III\_PC\_PHCET

1) The Question Paper will have MCQs (for 20 marks) and Subjective/Descriptive Questions (for 60 marks).

2) MCQ correct options and subjective question answers to be written on A4 size papers. Scan all pages of answer papers of Q.1 to Q.4 and create single file in pdf format to upload in the link given.

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Questions

1) The Question Paper will have MCQs (for 20 marks) and Subjective/Descriptive Questions (for 60 marks).

2) MCQ correct options and subjective question answers to be written on A4 size papers. Scan all pages of answer papers of Q.1 to Q.4 and create single file in pdf format to upload in the link given.

Untitled Title

Q1)1,2,3

<b>Q1.</b>	<b>Choose the correct option for following questions. All the Questions are compulsory and carry equal marks</b>
1.	Communicating data from one location to another requires some form of pathway or medium. These pathways, called?
Option A:	Information theory
Option B:	Communication broadcast
Option C:	Communication channels
Option D:	Information signal
2.	An amplifier has a bandwidth of 4 MHz with $10\text{K}\Omega$ as the input resistor. Calculate the rms noise voltage at the input to this amplifier if the room temperature is 25 degree Celsius.
Option A:	$10\mu\text{V}$
Option B:	$25.69\mu\text{V}$
Option C:	$55.87\mu\text{V}$
Option D:	$100\mu\text{V}$
3.	Which among the following is not an internal noise
Option A:	Shot noise
Option B:	Johnson noise
Option C:	Transit time noise
Option D:	Atmospheric noise

Q1)4,5,6,7

4.	An amplifier has a noise figure of 20 dB. What is the approximated noise factor value?
Option A:	10
Option B:	100
Option C:	1000
Option D:	10000
5.	In _____ modulation, frequency or phase of carrier signal changes with respect to modulating signal
Option A:	Frequency Modulation
Option B:	Amplitude modulation
Option C:	Delta Modulation
Option D:	Angle modulation
6.	A modulation index of 0.5 would be same as
Option A:	0.5 of Modulation Depth
Option B:	100% of Modulation Depth
Option C:	5% of Modulation Depth
Option D:	50% of Modulation Depth
7.	How much will be the depth of modulation if the carrier amplitude varies between 4 volts and 1 volt.
Option A:	0.6
Option B:	1
Option C:	0
Option D:	1.6

Q1)8,9,10

8.	A modulated signal $m(t) = 10 \cos(2\pi \times 10^3 t)$ is amplitude modulated with a carrier signal $c(t) = 50 \cos(2\pi \times 10^5 t)$ . Find the modulation index.
Option A:	0.1
Option B:	0.2
Option C:	0.3
Option D:	0.4
9.	The Bandwidth of SSBSC AM is.....
Option A:	$4f_m$
Option B:	$2f_m$
Option C:	$3f_m$
Option D:	$f_m$
10.	The amount of frequency deviation in FM signal depends on
Option A:	Amplitude of the modulating signal
Option B:	Carrier frequency
Option C:	Modulating frequency
Option D:	Transmitter amplifier

Q2,Q3,Q4

<b>Q2 (20 Marks Each)</b>	<b>Solve any Two Questions out of Three</b>	<b>10 marks each</b>
A	What do you mean International standards for communication system? Explain the frequency spectrum allocation with its application.	
B	Define Signal to Noise Ratio, Noise Figure, Noise factor, Noise Temperature, Noise Bandwidth.	
C	Explain time and frequency shifting property of Fourier transform.	

<b>Q3 (20 Marks Each)</b>	<b>Solve any Two Questions out of Three</b>	<b>10 marks each</b>
A	(i) Derive the Friss formula. (ii) Determine the overall noise figure in two stage cascaded amplifier if each stage has a gain of 20 dB along with a noise figure of 5dB.	
B	Draw and Explain the SSBSC AM(USB) generation using Phase shift method with the neat block diagram.	
C	Compare DSBFC AM, DSBSC AM and SSBSC AM	

<b>Q4 (20 Marks Each)</b>	<b>Solve any Two Questions out of Three</b>	<b>10 marks each</b>
A	A carrier wave of frequency 1 MHz and peak value of 10V is amplitude modulated by 5 kHz sine wave of amplitude 6V. Determine the modulation index and draw the spectrum of AM wave.	
B	i. List the characteristics of the receiver and explain each in detail. ii. Define Image frequency rejection and double spotting.	
C	Write a short note on pre emphasis, de emphasis and frequency deviation.	

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## 2302\_IT\_DSE\_Sem-III\_PCPF\_PHCET

1) The Question Paper will have MCQs (for 20 marks) and Subjective/Descriptive Questions (for 60 marks).

2) MCQ correct options and subjective question answers to be written on A4 size papers. Scan all pages of answer papers of Q.1 to Q.4 and create single file in pdf format to upload in the link given.

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2302\_IT\_DSE\_Sem-  
III\_PCPF\_PHCET

1) The Question Paper will have MCQs (for 20 marks) and Subjective/Descriptive Questions (for 60 marks).

2) MCQ correct options and subjective question answers to be written on A4 size papers. Scan all pages of answer papers of Q.1 to Q.4 and create single file in pdf format to upload in the link given.

**Questions:**

Q1)1,2

<b>Q1.</b>	<b>Choose the correct option for the following questions. All the questions are compulsory and carry equal marks</b>
1.	Object lifetimes generally correspond to one of three principal storage allocation mechanisms. Which of the following is <b>not</b> a principal storage allocation mechanism.
Option A:	Static
Option B:	Random Access
Option C:	Stack
Option D:	Heap
2.	_____ allocated memory objects reside in a fixed zone of memory
Option A:	Statically
Option B:	Dynamically
Option C:	Freely
Option D:	Completely

Q1)3,4,5

3.	When object is strictly defined with its type and if it enforces strong typing at compile time then language is known as _____
Option A:	Statically typed language
Option B:	Dynamically typed language
Option C:	Poorly typed language
Option D:	Run time language
4.	To maintain the stack layout following steps are followed by the caller in some order. Find out which is the first step?
Option A:	Computes the values of arguments and moves them into the stack or registers
Option B:	Uses a special subroutine call instruction to jump to the subroutine, simultaneously passing the return address on the stack or in a register
Option C:	Saves any caller-saved registers whose values will be needed after the call is served
Option D:	Computes the static link and passes it as an extra, hidden argument
5.	Higher-order functions and recursion are the basic ingredients of _____ computational model.
Option A:	stateless
Option B:	stateful
Option C:	in-state
Option D:	out-state

Q1)6,7,8

6.	Haskell prelude functions like map, <del>foldl</del> and <del>foldr</del> are examples of _____.
Option A:	Currying function
Option B:	Higher order function
Option C:	Anonymous function
Option D:	polymorphism
7.	Functional Programming finds its roots in _____.
Option A:	Turing Theory
Option B:	Post Hypothesis
Option C:	Lambda Calculus
Option D:	Kleene Theory
8.	In Prolog, backward chaining search strategy starts with ____
Option A:	existing clauses
Option B:	goal
Option C:	first clauses
Option D:	last clause

Q1)9,10

9.	In Prolog premise is called as ____ and consequent is called as ____
Option A:	subgoal,goal
Option B:	subgoal,tail
Option C:	head,tail
Option D:	tail,head
10.	What will be the answer by the Prolog interpreter for the following query: ?- [[],p] = [X,Y Z].
Option A:	<b>X = Z, Z = [], Y = p.</b>
Option B:	<b>X = p, Y = [ ], Z = [ ]</b>
Option C:	<b>Error</b>
Option D:	<b>X = p, Y = Z, Z = _</b>

Q2,Q3

<b>Q2.</b>	<b>Solve the following.</b>	<b>(20 Marks)</b>
<b>A</b>	<b>Solve any Two</b>	<b>5 marks each</b>
i.	Write following English statements in Prolog. Mention which are facts and rules. a. Ram writes a book. b. Sham reads a book if it is written by Ram. c. If someone reads any book then he is a scholar. d. If someone reads a book written by Ram he is a fan of Ram . e. Sham is a fan of ram.	
ii.	Differentiate early binding times and late binding times.	
iii.	Describe the concept of gated expressions in Haskell with an example.	
<b>B</b>	<b>Solve any One</b>	<b>10 marks each</b>
i.	What do you mean by type class ? Explain in detail.	
ii.	Explain unification in prolog with the help of an example. Describe the unification rules for prolog.	

<b>Q3</b>	<b>Solve the following.</b>	<b>(20 Marks )</b>
<b>A</b>	<b>Solve any Two</b>	<b>5 marks each</b>
i.	What is pattern matching in Haskell ? Explain with the example.	
ii.	What is a composite data type? Explain different composite data types.	
iii.	Name and explain use of any 5 list processing function in Haskell's prelude library	
<b>B</b>	<b>Solve any One</b>	<b>10 marks each</b>
i.	Illustrate storage management mechanisms with the help of labeled diagrams.	
ii.	Describe the Prolog search strategy. Discuss backtracking and the instantiation of variables.	

Q4)

<b>Q4</b>	<b>Solve the following.</b>	<b>(20 Marks )</b>
<b>A</b>	<b>Solve any Two</b>	<b>5 marks each</b>
i.	Explain the concept of Higher Order function in Functional programming with an example.	
ii.	Compare Imperative and Declarative paradigms with reference to, definition, purpose, complexity, flexibility, subcategory and applications.	
iii.	Which are important factors to be considered, while making a choice of a programming language ?	
<b>B</b>	<b>Solve any One</b>	<b>10 marks each</b>
i.	Describe functional language features in detail. Which are often missing in imperative programming languages.	
ii.	Consider following knowledge base in prolog: smog(delhi). smog(simla). fog(delhi). polluted(X) :- smog(X), fog(X).  Explain how the following three queries are answered by the Prolog system and also tell the output given by Prolog when you submit these queries. a. polluted(X) b. polluted(simla)	

5. Upload your answer papers \*

Files submitted:

6. Have you uploaded required pdf file of answers? \*

*Mark only one oval.*

☐ Yes

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