

C - 317

Total No. of Pages : 3

Seat No.	
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B.C.A. (Part - II) (Semester - IV) Examination, November - 2015

COMPUTER MATHEMATICS (Paper - 405)

Mathematical Foundation

Sub. Code : 63407

Day and Date : Wednesday, 18 - 11 - 2015

Total Marks : 80

Time : 11.00 a.m. to 2.00 p.m.

- Instructions :**
- 1) Question number Eight is compulsory.
 - 2) Attempt any four questions from the remaining questions.
 - 3) Figures to the right indicate full marks.
 - 4) Use of non programmable calculator is allowed.

Q1) a) Let p : price increases q : demand falls. Express the following statements in the symbolic form using p and q .

- i) Price increases, then demand falls
- ii) Price increases iff the demand falls.
- iii) If demand does not fall, then price does not increase.
- iv) If price does not increase, then demand does fall.

b) Define scalar matrix. If $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$, show that $A^2 - 4A$ is a scalar matrix. **[8 + 8]**

Q2) a) Define cartesian product. If $A = \{1, 2, 3, 4\}$, $B = \{4, 5, 6\}$, $C = \{5, 6\}$ find

- i) $A \times (B \cup C)$
- ii) $(A \times B) \cup (A \times C)$

b) Define the terms: Bipartite graph and complete Bipartite graph. Give an example of each. **[8 + 8]**

P.T.O.

Q3) a) Define Determinant of order 3×3 If $\begin{vmatrix} x & 1 & 1 \\ 1 & x & 1 \\ 1 & 1 & 1 \end{vmatrix} = 0$, then find the value of x .

b) Define the term contingency. Show that the statement pattern

$(p \leftrightarrow q) \wedge \sim(p \rightarrow \sim q)$ is a contingency.

[8 + 8]

Q4) a) Give the meaning of logical equivalence. Using truth table, prove that the statement $p \rightarrow (q \wedge r) \equiv (p \rightarrow q) \wedge (p \rightarrow r)$ is logical equivalence.

b) Define inverse of a matrix. Find inverse of matrix $A = \begin{bmatrix} 2 & 0 & -1 \\ 5 & 1 & 0 \\ 0 & 1 & 3 \end{bmatrix}$. [8 + 8]

Q5) a) State De Morgan's laws (any two). If A, B, C are the sets of the letters in the words 'college' 'marriage' and 'luggage' respectively, then verify that $[A - (B \cup C)] = [(A - B) \cap (A - C)]$.

b) Define the terms: Converse and inverse. State the converse, inverse of the following conditional statements.

i) If it rains then the match will cancelled.

ii) If a function is differentiable then it is continuous.

[8 + 8]

Q6) a) Explain Isomorphism of graph and give an example of same. Draw a 2 - regular graph on six vertices.

b) Define square matrix. If $A = \begin{bmatrix} 1 & 2 \\ 0 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 1 \\ -1 & 0 \end{bmatrix}$. Show that

$(AB)^2 \neq A^2 B^2$.

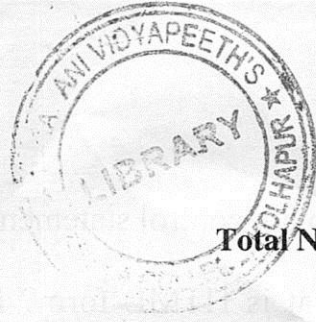
[8 + 8]



6) a) Prove the formula for the intersection of two sets. If A and B are two sets, then the intersection of A and B is given by $A \cap B = \{x \mid x \in A \text{ and } x \in B\}$.
b) Prove the formula for the union of two sets. If A and B are two sets, then the union of A and B is given by $A \cup B = \{x \mid x \in A \text{ or } x \in B\}$.

1	0	0	0
0	1	0	0
0	0	1	0
0	0	0	1

7) a) Let A and B be two sets. Prove that $A \cap B = B \cap A$.
b) Let A and B be two sets. Prove that $A \cup B = B \cup A$.
c) Let A and B be two sets. Prove that $(A \cap B) \cup (A \cap C) = A \cap (B \cup C)$.
d) Let A and B be two sets. Prove that $(A \cup B) \cap (A \cup C) = A \cup (B \cap C)$.



C - 56

Seat No.	
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Total No. of Pages : 2

B.C.A. (Part - II) (Semester - IV) Examination, November - 2015

WEB TECHNOLOGY

Sub. Code : 63406

Day and Date : Tuesday, 17 - 11 - 2015

Total Marks : 80

Time : 11.00 a.m. to 2.00 p.m.

- Instructions :**
- 1) Attempt any 4 questions from Q1 to Q7.
 - 2) Q.8 is compulsory.
 - 3) Figures in right side indicate full marks.

- Q1) a)** What is mean by web browser and web servers explain its role. [8]
- b) Define HTML. Explain heading and formatting tags in HTML with example. [8]
- Q2) a)** What is Internet? Explain applications of Internet. [8]
- b) Explain table tag in HTML with its attributes and example. [8]
- Q3) a)** What is CSS? Explain different types of CSS with syntax and example. [8]
- b) Explain importance of cross browser testing in web development. [8]
- Q4) a)** What is Java Script? Explain different data types Java Script. [8]
- b) Write Java Script program to display current date and time. [8]

P.T.O.

- Q5)** a) Explain control statements in Java Script. [8]
b) What is HTML form? Explain difference between GET and POST methods. [8]
- Q6)** a) What is ASP? Explain syntax and advantages of ASP. [8]
b) Explain different steps for developing university website. [8]
- Q7)** a) Explain built in objects in ASP with example. [8]
b) Write ASP script to store user feedback into database. [8]
- Q8)** Write short notes on (Any two) [16]
a) Event Handlers in Java Script
b) Marquee
c) Dialog Boxes in Java Script
d) Frames

