

Total No. of Questions : 7]

SEAT No. :

P1795

[4975]-1001

[Total No. of Pages : 2

M.C.A. (Management Faculty)
IT 11 : FUNDAMENTALS OF COMPUTER
(2015 Pattern) (Semester - I)

Time : 3 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Question No. 1 & 7 are compulsory.*
- 2) *Answer any Four (4) from Q.No. 2 to Q.No. 6.*
- 3) *Figures to the right indicate full marks.*
- 4) *Draw neat diagrams wherever necessary.*

- Q1)** a) Give detailed comparison of RISC vs CISC. [8]
b) Define software? Explain types of software? [7]

Q2) Convert the following: [5 × 2 = 10]

- a) $(3234)_8 = (?)_{16}$
- b) $(11010011.0010)_2 = (?)_{16}$
- c) $(35.81)_{10} = (?)_2$
- d) $(573)_{10} = (?)_{16}$
- e) $(11AB)_{16} = (?)_2$

Q3) What is pipelining? Explain instruction pipelining in detail? [10]

Q4) What is Flip-Flop? Explain any Flip-Flop in detail with diagram. [10]

Q5) What is DMA? Explain DMA controller? [10]

P.T.O.

Q6) Explain Half full adder in detail.

[10]

Q7) Short Note (any three):

[3 × 5 = 15]

- a) Addressing Modes.
- b) K-Map.
- c) Multiplexer.
- d) Logic gates.
- e) Shift Registers.



Total No. of Questions : 7]

SEAT No. :

P1796

[4975]-1002

[Total No. of Pages : 1

M.C.A. (Management Faculty)

IT 12 : 'C' PROGRAMMING WITH DATA STRUCTURE

(2015 Pattern) (Semester - I)

Time : 3 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Q. 1 is compulsory.*
- 2) *Attempt any five from remaining.*

Q1) a) Convert the following infix expression into postfix expression in a tabular format. **[10]**

$$2*3/(2 - 1) + 5 * 3$$

b) Write a program in C to reverse stack elements of integer using queue. **[10]**

Q2) Write a program in C to implement insertion sort for integer elements. **[10]**

Q3) Write a program to perform multiplication of 3 * 3 Matrics. **[10]**

Q4) Write a program in C includes swap (no1, no2), Power (no, exponent, result) using call by reference (without using in built function) **[10]**

Q5) Create a structure with eid, basic, hra, da, pf. generate payslip of 5 Employees. **[10]**

Q6) Write a program in C to copy the contents of one file into other file & display the elements of new file. **[10]**

Q7) Write a short note on (Any Two): **[2 × 5 = 10]**

- a) Pointer & its advantages.
- b) Data Structure.
- c) String functions.
- d) Circular Queue.



Total No. of Questions :7]

SEAT No. :

P1797

[4975]-1003

[Total No. of Pages :2

M.C.A. (Management Faculty)
IT-13 : SOFTWARE ENGINEERING
(2015 Pattern) (Semester - I)

Time : 3 Hours]

[Max. Marks :70

Instructions to the candidates:

- 1) *Q. 1 and Q.7 are compulsory.*
- 2) *Attempt any three from Q.2 to Q.6.*
- 3) *Figures to the right indicate full marks.*
- 4) *Write assumptions whenever necessary.*

Q1) Life Insurance system has decided to provide automatic insurance to Indian people.

- Customers are expected to fill up the insurance Report Form.
 - Agent sends the request and all details of medical report of customer to verification department.
 - Verification department enter all details of agent and customer and check their payments and eligibility.
 - Verification department sends the report to legal contract department and finance department.
 - Legal department sends the policy contract and the finance receipt report to dispatch department.
 - Customer is informed about Insurance through insurance policy.
- a) Write the IEEE format for SRS. **[5]**
- b) Prepare software requirement specification in IEEE format for the above given case study. **[15]**

P.T.O.

- Q2)** Explain the types CASE tools and their importance. [10]
- Q3)** Explain features of good GUI design with example. [10]
- Q4)** Explain method of estimating software maintenance cost. [10]
- Q5)** Explain FDD and E-R diagram. [10]
- Q6)** Explain software development life cycle. [10]
- Q7)** Write short notes (any four): [20]
- a) Spiral model.
 - b) Reverse engineering.
 - c) Role of system analyst.
 - d) Agile process.
 - e) Data Dictionary.

EEE

Total No. of Questions :7]

SEAT No. :

P1798

[4975]-1004

[Total No. of Pages :2

M.C.A. (Management Faculty)
IT-14 : DATABASE MANAGEMENT SYSTEM
(2015 Pattern) (Semester - I)

Time : 3 Hours]

[Max. Marks :70

Instructions to the candidates:

- 1) *Q. 1 is compulsory.*
- 2) *Solve any five from the remaining.*
- 3) *Mention assumptions wherever necessary.*

Q1) A management institute has organized a national level research conference. There are various specialized tracks based on the subjects. Participant researchers send their research paper as per the track. The reviewers who are expert in specific track shortlist the papers of there participants. There shortlisted participants then present their papers in the conference. The reviewers Judge and select one paper per track for the “Best paper Award”. There are some rules which are followed for submitting the papers. **[20]**

- a) One paper can be written by more than one author.
- b) One author can submit as many papers as he wants.
- c) One reviewer can review the papers belonging to only one track which is allocated to him/her.

For the above scenario draw ER diagram & design the normalized (3NF) file layout.

Q2) Explain deadlock handling & revention. **[10]**

Q3) Explain log based recovery technique in detial. **[10]**

Q4) Explain Codd’s rules in detail. **[10]**

Q5) Explain discretionary access control & Mandatory access control in database security. **[10]**

P.T.O.

Q6) Write a short note (Any 2):

[10]

- a) Database users.
- b) ACID properties.
- c) NO SQL databases.

Q7) Consider the following schema & solve following queries (any 5):

[10]

- a) Select details of all employees having salary in between 2000 to 4000.
- b) Select all employees of department 'sales'.
- c) Select details of all 'managers' from department 'production', 'EPP', 'purchase'.
- d) Find count of all employees by grouping with their departments.
- e) Find details of all employees having salary greater than average salary.
- f) Find maximum salary of each department.
- g) Find all department having total count of employee greater than 10.

EEE

Total No. of Questions :6]

SEAT No. :

P1799

[4975]-1005

[Total No. of Pages :1

M.C.A. (Management Faculty)

**BM-11 : PRINCIPLES AND PRACTICES OF MANAGEMENT
AND ORGANIZATIONAL BEHAVIOUR**

(2015 Pattern) (Semester - I)

Time : 3 Hours]

[Max. Marks :70

Instructions to the candidates:

- 1) *Question No. 1 is compulsory.*
- 2) *Attempt any 3 from the remaining.*
- 3) *Figures to the right indicates full marks.*

Q1) a) Explain the different skills require at top, middle & lower level of Management. **[15]**

b) Explain the reasons for intra group conflict. What strategies you will apply to avoid these conflicts. **[10]**

Q2) What is Group? Explain in details the stages of group formation with an examples. **[15]**

Q3) “Management has to adopt scientific approach to solve problems”. Discuss. **[15]**

Q4) Explain the different factors to be consider for team building. **[15]**

Q5) Explain the different types of leadership style in detail. **[15]**

Q6) Write short notes (Any Three): **[15]**

- a) “Win -win” situation in conflict management.
- b) Johari Window.
- c) Staffing.
- d) Product organization structure.
- e) Unstructure decisions.

EEE

Total No. of Questions :7]

SEAT No. :

P1800

[4975]-2001

[Total No. of Pages :2

M.C.A. (Management Faculty)

IT-21 : ESSENTIALS OF OPERATING SYSTEM

(2015 Pattern) (Semester - II)

Time : 3 Hours]

[Max. Marks :70

Instructions to the candidates:

- 1) *Question 1 is compulsory.*
- 2) *Solve any 5 from remaining.*
- 3) *Figures to the right indicate full marks.*
- 4) *Draw neat diagram wherever necessary.*

Q1) a) Consider the following snapshot

[10]

Process	Burst Time	Priority	Waiting Time
P ₁	10	3	13
P ₂	3	1	2
P ₃	8	2	5
P ₄	2	0	0

Computer average waiting time for SJF preemptive and priority scheduling algorithm.

b) Define OS. Explain various functions of operating system.

[10]

Q2) Suppose the read write head is at track number 67 and moving towards track number 512. The disk queue contains requests for 77,17, 167, 189, 90, 100, 75, 77, 200, 9 and 500. Find the total number of head movements to satisfy the requests (for tracks) using **[10]**

a) SSTF.

b) C- SCAN (illustrate with diagram).

P.T.O.

Q3) Define IPC. Explain in details how IPC is implemented in client server system. [10]

Q4) Explain how operating system implements file system. Explain structure of file control Block maintained by operating system. [10]

Q5) What is page fault? Discuss different page replacement algorithms with example (any two): [10]

Q6) Consider the following snapshot of system. A system has 5 process A through E and for resources type R_1 through R_4 . [10]

	Allocation		
	A	B	C
P_0	0	1	0
P_1	2	0	0
P_2	3	0	2
P_3	2	1	1
P_4	0	0	2

	Max		
	A	B	C
P_0	7	5	3
P_1	3	2	2
P_2	9	0	2
P_3	2	2	2
P_4	4	3	3

Available		
A	B	C
3	3	2

Answer the following questions using bankers algorithm.

- What are the content of matrix need?
- Is the system is in safe state?
- If a request from process P_0 arrives for (3,3,2) can request be granted immediately?
- If a request from process P_2 arrives (0, 1,0) can request be granted immediately?

Q7) Write short notes on (any two): [10]

- Deadlock recovery.
- System calls.
- Simulations.

EEE

Total No. of Questions :8]

SEAT No. :

P1801

[4975]-2002

[Total No. of Pages :3

**M.C.A. (Management Faculty)
IT-22 : WEB TECHNOLOGIES
(2015 Pattern) (Semester - II)**

Time : 3 Hours]

[Max. Marks :70

Instructions to the candidates:

- 1) *Q. 1 is compulsory.*
- 2) *Solve any six from Q.2 to Q.8.*
- 3) *Figures to the right indicate full marks.*

Q1) Write HTML Code to design Page Layout using Frames. [10]

Welcome to KidsShopee.com.....[Scrolling message]	
<u>Home</u> <u>Offers</u> <u>Buy</u> <u>MyShoppingCart</u> <u>Toys</u> <u>Games</u> <u>Contact Us</u> <u>Feedback</u>	This is a target frame. Display the contents of web pages in this frame.

Q2) What is Image Mapping? Explain Client and Server side image mapping in HTML with suitable examples. [10]

P.T.O.

Q3) Write CSS code for creating following external style sheet.

[10]

- a) Body background color=brown
- b) Marquee for color=yellow
- c) Font size=12, color=maroon, name=Arial, Italic
- d) Anchor active= “red”, visited= “blue”, current= “green”
- e) Table border size=2,color= “red”.

Q4) Design HTML form to Login any web application & write JavaScript validation code.

[10]

- a) Username should not be blank and greater than 15 characters.
- b) Password should be minimum 8 characters and maximum 15 characters & should contain alphabets and numbers only.
- c) Confirm password must be similar to password.

Login Form

Username:

Passwrđ:

Confirm Password:

Q5) Write JavaScript code to implement the following functionality. On click event of radio button convert a number to double or square.

[10]

Type a no.	<input type="text"/>
<input type="radio"/> Double	
<input type="radio"/> Square	
Result	<input type="text"/>

Q6) Write ASP application to display membership details for cricket club. Accept membership ID from user (assume suitable table structure). **[10]**

Q7) Explain Request and Response objects in ASP with examples. **[10]**

Q8) Write a short notes (Any Two): **[10]**

- a) Classes in CSS.
- b) Navigator object in JavaScript.
- c) <table> & <div> tags.

EEE

Total No. of Questions :8]

SEAT No. :

P1802

[4975]-2003

[Total No. of Pages :2

M.C.A. (Management Faculty)

IT-23 : CORE JAVA

(2015 Pattern) (Semester - II)

Time : 3 Hours]

[Max. Marks :70

Instructions to the candidates:

- 1) *Q. 1 and Q.8 are compulsory.*
- 2) *Solve any five from remaining.*
- 3) *All questions carry equal marks.*

Q1) Answer the following:

[5×2=10]

- a) Inner class.
- b) JVM.
- c) Thread Priorities.
- d) Abstraction.
- e) 'Static' modifier.

Q2) Design a screen with two textfields and two radio buttons. Accept a number in first textfield. If square radio button is selected, display the square of a number and if cube radio button is selected display the cube of a number in second textfield. If accepted number is invalid through user defined exception. **[10]**

Q3) Design an applet program to display digital clock using thread. **[10]**

Q4) Write a program to count characters, words and lines in a file. Read the file name from user. **[10]**

Q5) Write an application to implement a user defined exception "In Sufficient Fund Exception". Read amount from console & check whether entered amount is available in your account or not. If amount is available then with draw given amount and if it is not available then throw the exception "In sufficient Fund Exception" and display how much amount is required to withdraw. **[10]**

P.T.O.

Q6) Write a program in Java to show multilevel inheritance in which person class should be inherited by Employee class and manager class should be inherited from employee class. Display the respective information for each class. **[10]**

Q7) Write a program to demonstrate the Hashmap class. **[10]**

Q8) Write a short notes on (Any Two): **[2×5=10]**

- a) Method overriding.
- b) Applet Vs application.
- c) Input stream reader & output stream writer.

EEE

Total No. of Questions :6]

SEAT No. :

P1803

[4975]-2004

[Total No. of Pages :1

M.C.A. (Management Faculty)
IT-24 : ESSENTIALS OF NETWORKING
(2015 Pattern) (Semester - II)

Time : 3 Hours]

[Max. Marks :70

Instructions to the candidates:

- 1) *Q. 1 & 6 are compulsory.*
- 2) *Solve any three from the remaining.*
- 3) *Figures to right indicate full marks.*
- 4) *Draw the neat diagram wherever necessary.*

Q1) a) Compare IPv4 and IPv6 in details. **[10]**

b) What is multiplexing. Explain FDM & TDM. **[10]**

Q2) What are Ethernet standards. Explain Ethernet 802.3 frame format in detail. **[10]**

Q3) Explain TCP/IP model in detail. **[10]**

Q4) Explain VSAT features and communication. **[10]**

Q5) Explain message format. Explain MIME in electronic communication. **[10]**

Q6) Write a short notes (Any four): **[4×5=20]**

- a) HTTP.
- b) Sliding window.
- c) IP Routing.
- d) NIC.
- e) Peer-to-peer networks.
- f) Unguided media.

EEE

Total No. of Questions : 4]

SEAT No. :

P2648

[Total No. of Pages : 3

[4975]-2005

M.C.A. (Management Faculty) (Semester - II)

MT - 21 : DISCRETE MATHEMATICS

(2015 Pattern)

Time : 3 Hours]

[Max. Marks : 70

Instructions to the candidates:-

- 1) *Question No. 1 is compulsory.*
- 2) *Attempt any two questions from Q.No. 2,3 and 4.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Use of scientific calculator is allowed.*

Q1) a) Obtain PDNF of $(P \wedge Q) \vee (\sim P \wedge R) \vee (Q \wedge R)$ without using truth table. **[5]**

b) Write the following statements in symbolic form: **[5]**

- i) Some real numbers are rational
- ii) Any integer is either Positive or Negative

c) Let $A = \{1, 2, 3, 4\}$ and $R = \{\langle x, y \rangle / x + y > 4\}$ Write relation R, its matrix and draw digraph. **[5]**

d) Show that in a simple graph with n vertices having maximum $n(n-1)/2$ edges. **[5]**

e) Let R denote relation on set $A = \{1, 2, 3, 4, 5, 6\}$ of ordered pairs of positive integers such that $\langle x, y \rangle R \langle u, v \rangle$ iff $xv = yu$. Show that R is an equivalence relation. **[5]**

f) Define left coset and right coset with example. **[5]**

Q2) a) Let G be a set of all non zero numbers and let $a*b = ab/2$. Show that $\langle G, * \rangle$ is an abelian group. **[5]**

b) Let A be the set of factors of particular positive integer m and let \leq be the relation divides i.e. $\leq = \{\langle x, y \rangle / x \text{ divides } y\}$ **[5]**

Draw Hasse diagram for

- i) $m = 12$
- ii) $m = 30$
- iii) $m = 45$

P.T.O.

- c) Show that the conclusion $R \rightarrow S$ logically follows from the premises $P \rightarrow (Q \rightarrow S)$, $\sim R \vee P$ and Q . [5]
- d) Define planar graph and Bipartite graph with example. [5]

Q3) a) Indicate the variables that are free and bound. Also show the scope of quantifiers [5]

i) $(x)(P(x) \wedge (\exists x)Q(x)) \vee ((x)P(x) \rightarrow Q(x))$

ii) $(x)(P(x) \Leftrightarrow Q(x)) \wedge (\exists x)R(x) \wedge S(x)$

b) Let $A = \{a, b, c, d\}$ with relation [5]

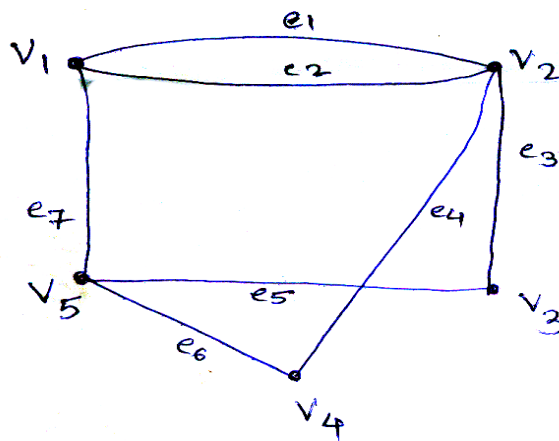
$$R = \{\langle a,a \rangle, \langle a,b \rangle, \langle b,c \rangle, \langle b,d \rangle, \langle c,d \rangle, \langle c,a \rangle, \langle d,b \rangle, \langle d,d \rangle\}$$

Find transitive closure using Warshall's algorithm

c) Show that the following premises are inconsistent. [5]

$$E \rightarrow S, S \rightarrow H, A \rightarrow \sim H \text{ with } E \wedge A$$

d) Construct Adjacency and Incidence matrix for the following graph. [5]



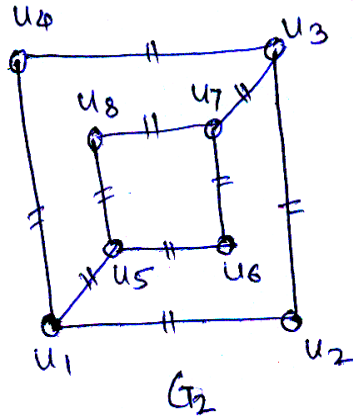
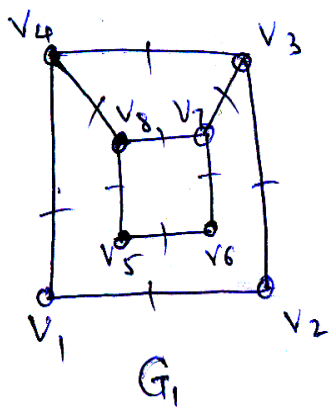
Q4) a) Write the codewords generated by H, where, [8]

$$H = \begin{bmatrix} 1 & 1 & 0 & 1 & 0 & 0 \\ 1 & 0 & 1 & 0 & 1 & 0 \\ 1 & 1 & 1 & 0 & 0 & 1 \end{bmatrix}$$

What is the minimum weight of nonzero codeword in above codewords.

b) Show that the following graphs are isomorphic.

[6]



c) Show that a tree T with n vertices has $n - 1$ edges.

[6]

