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External Examination November-2017

M.Sc - Information Technology (IT) 1st Semester

PS01CINT01: Introduction to Information Science

Date: Thursday, 2- November- 2017

Time: 2.00 P.M to 5:00 P.M

Max. Marks: 70

Q-1 Choose the most appropriate option for each question:

[8]

1. _____ is an internal network based on Web technologies that allows people within an organization to exchange information and work on projects.
(A) Internet (C) Intranet
(B) Extranet (D) None of these
2. _____ consists of computer equipment used to perform input, processing, and output activities.
(A) Software (C) A and B Both
(B) Hardware (D) None of these
3. _____ is the process of making hypothetical changes to problem data and observing the impact on results.
(A) Goal-seeking (C) Simulation analysis
(B) What-if analysis (D) None of these
4. _____ problems are straightforward and require known facts and relationships.
(A) Unstructured (C) Semistructured
(B) Highly structured (D) None of these
5. In _____ type of error two or more bits in the data unit have changed.
(A) Single-bit (C) Burst
(B) Runtime (D) Compile time
6. _____ is a supplementary protocol that allows non-ASCII data to be sent through the E-mail.
(A) SMTP (C) FTP
(B) MIME (D) HTTP
7. The _____ OSI layer coordinates the functions required to carry a bit stream over a physical medium.
(A) Physical (C) Network
(B) Application (D) Datalink
8. The _____ is the distance one bit occupies on the transmission medium.
(A) Bitrate (C) Bit length
(B) Bit period (D) None of these

Q-2 Answer the following questions (ANY SEVEN):

[14]

1. Distinguish between Data and Information.
2. List benefits of E-Business.
3. Differentiate between credit card and debit card.
4. What is web log file?

5. What is M-Commerce?
6. What is the difference between Half-duplex and Full-duplex transmission modes?
7. What are the responsibilities of the Network Layer of OSI model.
8. Differentiate between Analog signal and Digital signal.
9. Explain parallel transmission.

Q-3 Answer the following questions:

- A. Explain Decision Support Systems in detail. [6]
- B. Discuss Web Server Software and Hardware requirements for running E-Business. [6]

OR

- B. Discuss Supply Chain Management (SCM) in detail. [6]

Q-4 Answer the following questions:

- A. Explain Management Information systems (MIS) in detail. [6]
- B. Explain B2B and B2C E-business models. [6]

OR

- B. Discuss various security issues in E-commerce. [6]

Q-5 Answer the following questions:

- A. What is OSI Model? Explain major functionalities of each layer. [6]
- B. Write a note on Fiber Optics. [6]

OR

- B. Explain Hyper Text Transfer Protocol. [6]

Q-6 Answer the following questions:

- A. Write a note on Coaxial Cable. [6]
- B. Explain File Transfer Protocol. [6]

OR

- B. Explain any *Two* techniques of Analog-to-Analog conversion [6]

□□□

SARDAR PATEL UNIVERSITY

[52]

Marks: 70

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- [P.T.O.]

Q-2 Do as directed. (ATTEMPT ANY SEVEN)

14

- (1) List out the features of OOP.
- (2) List all access specifiers and also write its use.
- (3) What is inline function? Give an example of it.
- (4) List out five operators to be overloaded in C++.
- (5) Differentiate between static and dynamic binding.
- (6) Define with an example: Root node and Leaf node.
- (7) Write the formula for address calculation of 1-D array element and explain it.
- (8) Difference between Linear and Non-Linear Data Structure.
- (9) Define: Singly linked list and Circular Linked list.

- Q-3** A Explain basic I/O in C++ with proper example. 6
B Write a note on Default Constructor. 6

OR

- B Explain the concept of friend function with suitable example 6

- Q-4** A Explain structure of C++ program. Also explain data types used in C++. 6
B Explain unary operator overloading with example. 6

OR

- B Write a note on Single Inheritance. 6

- Q-5** A Discuss Preorder and Postorder traversal of binary tree with an example. 6
B Write an algorithm on PUSH and PEEP operations of stack. 6

OR

- B Write an algorithm to insert and delete an element from a Circular Queue. 6

- Q-6** A Explain Single and Multiple Buffering techniques in used in sequential file. 6

- B Explain with an example ANY TWO hashing functions. 6

OR

- B Write a note on Multilist organization. 6

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Seat No _____

No. of printed pages: 2

SARDAR PATEL UNIVERSITY
M.Sc.-IT Master of Science in Information Technology
 Semester – I (NC) External Examinations, November 2017
PS01CINT03 – Introduction to Theoretical Computer Science (NC)
 Monday, 13th November, 2017

Time: 02:00 p.m. to 05:00 p.m.

Max Marks: 70

Q1. Choose the most appropriate option for each question.

[8]

- i. The set $A = \{a, b, c\}$ is _____ set.
 A) uncountable B) infinite
 C) finite D) None of these
- ii. A relation which is reflexive, transitive and symmetric is called as _____.
 A) equivalence relation B) poset
 C) angular relation D) None of these
- iii. Self loop is an example of _____.
 A) path B) circuit
 C) tree D) None of these
- iv. The degree of a vertex V having two self loops is _____.
 A) 1 B) 2
 C) 4 D) None of these
- v. A problem is considered as _____ if it can be solved by efficient algorithm.
 A) tractable B) intractable
 C) unsolvable D) None of these
- vi. A decline or changes that have occurred in ice-cream sales during november to february is called _____ variation.
 A) trend B) seasonal
 C) cyclic D) irregular
- vii. Which of the following equations represents the absorption law for a lattice?
 A) $a \vee (a \wedge b) = a$ B) $a \wedge (a \vee b) = b$
 C) Both A and B D) None of these
- viii. Fuzzy logic is _____ logic.
 A) multi valued B) single valued
 C) empty D) None of these

Q2. Answer the following questions (Any Seven):

[14]

- a. Define anti-symmetric relation and give one example of anti-symmetric relation.
- b. What is injective function?
- c. Define isomorphic graph and give one example of isomorphic graph.

- d. Show that in an undirected graph, total number of odd vertices is even.
- e. What is time complexity of an algorithm?
- f. Prove join and meet operations are associative in lattice.
- g. Give one example for (i) complete lattice and (ii) bounded lattice.
- h. Define secular trend. What are the uses of trend?
- i. Differentiate between fuzzy logic and crisp logic.

Q3. Answer the following questions:

- a. Define binary relation. Also explain reflexive, symmetric and anti-symmetric relations each with an example. [6]
- b. Write a note on types of grammars for different language sets. [6]

OR

- b. If $f(x)=x+7$ and $g(x)=x-3$ then find $f \circ g(x)$, $g \circ f(x)$, $f \circ g(4)$ and $g \circ f(4)$. [6]

Q4. Answer the following questions:

- a. Prove that there always exists a Hamiltonian path in a directed complete graph. [6]
- b. Explain Euler and Planner graphs with example. [6]

OR

- b. Write a note on complexity of problems. Explain by taking suitable example. [6]

Q5. Answer the following questions:

- a. Discuss cyclic variation, seasonal variation and irregular variation in time series. [6]
- b. Fit a Straight line trend by the method of Least Squares. Calculate the Trend Values. Estimate the value for 2019. [6]

Year	2004	2009	2010	2011	2012	2013	2014
Earnings (Rs. Lakhs)	70	75	90	91	95	98	100

OR

- b. Calculate 5-Yearly moving average for the following data to the numbers of commercial and industrial failures in a country during 1994 to 2009. [6]

Year	No. of Failures	Year	No. of Failures	Year	No. of Failures	Year	No. of Failures
1994	23	1998	20	2002	9	2006	12
1995	26	1999	12	2003	13	2007	9
1996	28	2000	12	2004	11	2008	3
1997	32	2001	10	2005	14	2009	1

Q6. Answer the following questions:

- a. Write a detailed note on fuzzy logic and its applications. [6]
- b. If fuzzy set $\tilde{A} = \{(x_1, 0.7), (x_2, 0.4), (x_3, 0)\}$ and fuzzy set $\tilde{B} = \{(x_1, 0.7), (x_2, 0.2), (x_3, 1)\}$ then find $(\tilde{B} - \tilde{A}) \cup (\tilde{A} - \tilde{B})$. [6]

OR

- b. Given $T(\tilde{P}) = 0.55$ and $T(\tilde{Q}) = 0.8$, then find (i) $T(\tilde{P} \vee \tilde{Q})$, (ii) $T(\tilde{P} \Rightarrow \tilde{Q})$ [6]

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SEAT No. _____

No. of Printed Pages : 2

Sardar Patel University
External Examination

M.Sc. (Information Technology) Semester – I
PS01CINT05: Operating System Concepts
10th November, 2017 Friday

Time: 02:00 PM to 05:00 PM

Max. Marks: 70

Q-1 Choose the most appropriate option for each question.

[08]

- (i) The degree of Multiprogramming is controlled by _____.
 - a) CPU Scheduler
 - b) Long Term Scheduler
 - c) Short Term Scheduler
 - d) Swapping
- (ii) Which storage device has higher working speed than main memory?
 - a) Optical disk
 - b) Cache
 - c) Electronic disk
 - d) Magnetic disk
- (iii) A process waiting for a processor is said to be in the _____ state.
 - a) Ready
 - b) Waiting
 - c) Running
 - d) New
- (iv) _____ is a solution of starvation problem.
 - a) Blocking
 - b) Aging
 - c) Swapping
 - d) Paging
- (v) _____ stores the value of the starting address of the process in the memory.
 - a) Base register
 - b) Limit register
 - c) Programme counter
 - d) All of these
- (vi) Which of the following is not a solution to the critical section problem?
 - a) Monitor
 - b) Peterson's algorithm
 - c) Banker's algorithm
 - d) RAID
- (vii) Which of the following is not a working mode of operating system?
 - a) Supervisor
 - b) User
 - c) Kernel
 - d) None of these
- (viii) Which of the following operation can be performed by a process without invoking system call?
 - a) Creation of child process
 - b) Kill other process
 - c) Call to user function
 - d) Message passing

Q-2 Answer ANY SEVEN from the following

[14]

- (i) Briefly explain the term operating system.
- (ii) What is system call?
- (iii) Draw queuing diagram.
- (iv) Define signal() and wait() in context of semaphore.
- (v) What is safe state?
- (vi) Differentiate between logical and physical address.
- (vii) Briefly explain segmentation.
- (viii) Differentiate between C-SCAN and C-LOOK disk scheduling algorithms.
- (ix) List benefits of multithreading.

(2)

(P.T.O.)

Q-3

A. List different types of structures of the operating system. Explain any one of them in detail. [06]

B. What do you mean by the words "interrupt" and "trap"? Explain interrupt handling by the operating system. [06]

OR

B. Write a note on single processor and multiprocessor computer systems.

Q-4

A. Explain FCFS cpu scheduling algorithm by giving suitable example of your choice. [06]

B. Write a note on message passing system for inter process communication. [06]

OR

B. What is critical section problem? Explain necessary condition to solve critical section problem.

Q-5

A. Write a note on segmentation. [06]

B. What do you mean by address binding? Explain compile time, load time and execution time address binding. [06]

B.

OR

Explain optimal page replacement algorithm by considering following reference string:

7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1

Assume that each process is given three frames in the memory.

Calculate number of page faults for the same.

Q-6

A. List secondary storage devices. Explain any one of them in detail. [06]

B. What is file? List different types of files. Briefly explain the operations that can be performed on files. [06]

OR

B. What is RAID? Explain advantages of RAID.

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[59]

**SARDAR PATEL UNIVERSITY****M.Sc.-IT Master of Science in Information Technology****Semester – I External Examinations, November 2017****PS01CINT21 – Introduction to Theoretical Computer Science****Thursday, 2<sup>nd</sup> November, 2017****Time: 02:00 p.m. to 05:00 p.m.****Max Marks: 70****Q1. Choose the most appropriate option for each question.****[8]**

- i. The set of all real number  $R$  is \_\_\_\_\_.  
A) finite B) countable and finite  
C) countable and infinite D) uncountable
- ii. Let  $S = \{a, b, c\}$ . The relation  $R = \{(a, a), (b, b), (c, c)\}$  is a \_\_\_\_\_.  
A) reflexive relation B) symmetric relation  
C) transitive relation D) equivalence relation
- iii. A self loop has degree \_\_\_\_\_.  
A) 0 B) 1  
C) 2 D) none of these
- iv. A connected graph with  $e = v - 1$  is a \_\_\_\_\_.  
A) node B) relation  
C) tree D) none of these
- v. If there is no efficient algorithm for solving a problem, then it is known as \_\_\_\_\_.  
A) reflexive B) tractable  
C) intractable D) None of these
- vi. If  $C$  is time for calculating  $N - 1$  comparisons in algorithm then total time is \_\_\_\_\_.  
A)  $NC$  B)  $(N - 1)C$   
C)  $(N - 1)NC$  D) none of these
- vii. A time series is a set of data recorded \_\_\_\_\_.  
A) periodically B) non-periodically  
C) randomly D) none of these
- viii. Various weather conditions and climatic changes play an important role in \_\_\_\_\_ variations.  
A) seasonal B) cyclic  
C) random D) none of these

**Q2. Answer the following questions (Any Seven):****[14]**

- Define anti-symmetric and equivalence relations.
- Explain rule of product with an example.
- What is lattice?
- Show that in an undirected graph, total number of odd vertices is even.
- Discuss source and sink in the directed graph.
- What is time complexity problem?
- Write steps for largest2 algorithm.
- Explain cyclical fluctuation in time series.
- Mention any two uses of trend.

**Q3. Answer the following questions:**

- a. If  $f(x)=x+5$  and  $g(x)=x-5$  then find  $f \circ g(x)$ ,  $g \circ f(x)$ ,  $f \circ g(5)$  and  $g \circ f(5)$ . [6]  
b. Write a detailed note on relational database model. [6]

OR

- b. Explain distributive and complemented lattice. [6]

**Q4. Answer the following questions:**

- a. Explain weighted graphs and multigraphs with examples. [6]  
b. Prove that there is always a hamiltonian path in a directed complete graph. [6]

OR

- b. Discuss eularian paths and circuits with examples. [6]

**Q5. Answer the following questions:**

- a. Write a sorting algorithm to sort  $n$  numbers in ascending order. Give time complexity of this algorithm. [6]  
b. Write and explain the shortest path algorithm. [6]

OR

- b. Write and explain the algorithm for bubble sorting. [6]

**Q6. Answer the following questions:**

- a. Explain component and utilities of time series with example. [6]  
b. Fit straight line using following data using least square method, Also find sales for the year 2005. [6]

| Year   | 2010 | 2011 | 2012 | 2013 | 2014 |
|--------|------|------|------|------|------|
| Profit | 34   | 36   | 40   | 26   | 22   |

OR

- b. Determine the trend values for the following data using semi-average method and estimate the sales value for 2000. [6]

| Years                | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|----------------------|------|------|------|------|------|------|
| Sales (in thousands) | 20   | 24   | 22   | 30   | 28   | 32   |

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Q-1 Select the correct option from the following questions.

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- (1) \_\_\_\_\_ is the developer of C++.
- A Dannis Ritchie                      B James Gosling  
C Ivan Byros                          D Bjarne Strastrup
- (2) The header file \_\_\_\_\_ should be included that use i/o statements.
- A iostream                              B stdio  
C conio                                  D io
- (3) \_\_\_\_\_ is a linear data structure.
- A Stack                                  B Tree  
C Graph                                  D None of these
- (4) \_\_\_\_\_ is/are the types of constructor.
- A Default                              B Copy  
C Parameterized                      D All of Above
- (5) In row major order, elements of matrix are stored on a \_\_\_\_\_ basis.
- A Column by Column                  B Row by Row  
C Row by Column                      D Column by Row
- (6) An array is a \_\_\_\_\_ data structure.
- A Heterogeneous                      B Homogeneous  
C Non- Linear                          D Unordered
- (7) The terms "PEEP" and "CHANGE" are related to \_\_\_\_\_ Data Structure.
- A Queue                                  B Stack  
C Array                                  D Linked List
- (8) Node which does not have any child node is called \_\_\_\_\_.
- A Root node                              B Leaf Node  
C Sibling Node                          D Parent Node

[P.T.O.]

**Q-2** Do as directed. (ATTEMPT ANY SEVEN) 14

- (1) Define: Data Members and Member functions.
- (2) List names of operators that cannot be overloaded in C++.
- (3) What is the difference between private & protected members of the class?
- (4) What is an operator function? Describe the syntax of an operator function.
- (5) Explain destructors with an example.
- (6) Differentiate: Binary Tree, Height of a Tree.
- (7) Define: File, Record, Field, Tree
- (8) What is File organization? What are their types?
- (9) Differentiate between primitive and non-primitive data types.

**Q-3** A Write a note on new and delete operator. 6  
B What is Constructor? List out them. Explain ANY ONE in detail. 6

**OR**

B What is Inheritance? List out them. Explain ANY ONE in detail. 6

**Q-4** A Write a note on Unary operator overloading. 6  
B Discuss function overloading with an example. 6

**OR**

B Explain Exception Handling in C++. 6

**Q-5** A Write an algorithm on PUSH and POP operations of a stack. 6  
B Write an algorithm to insert and delete an element in Queue. 6

**OR**

B Explain: Row and Column major order method for 2-D array with an example. 6

**Q-6** A What is Hashing functions? List them. Explain any two with an example. 6  
B Write a note on Sequential file. 6

**OR**

B Explain ISAM in detail. 6

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SEAT No. \_\_\_\_\_

No. of Printed Pages: 02

**SARDAR PATEL UNIVERSITY**  
**M. Sc [Information Technology]**  
**Semester-1 (CBCS) Examination - November-2017**  
**PS01CINT23 - RDBMS & CLIENT SERVER COMPUTING**  
**Wednesday, 8<sup>th</sup> November 2017**

Time: 2.00 P.M. To 5.00 P.M.

Marks: 70

Note: Figure IN RIGHT SIDE indicates maximum marks for that question.

**Q-1 Select an appropriate option for given statement**

[08]

1) \_\_\_\_\_ is a database object that holds user data.

[a] FORM [b] TABLE [c] QUERY [d] None of given

2) DELETE FROM EMP; removes \_\_\_\_\_ rows from EMP table.

[a] 1 [b] 0 [c] all [d] None of given

3) \_\_\_\_\_ constraint establishes relationship between tables..

[a] Primary key [b] CHECK [c] Foreign key [d] none of given

4) The \_\_\_\_\_ command is used to change or modify data values in a table.

[a] ALTER TABLE [b] UPDATE [c] INSERT [d] None of given

5) As per \_\_\_\_\_, no two rows of data must contain repeating group of information

[a] 1NF [b] 2NF [c] 3NF [d] BCNF

6) \_\_\_\_\_ is the process of extracting the knowledge or design blueprints from anything man-made.

[a] Forward engineering [b] Reengineering [c] Reverse engineering [d] All of these

7) \_\_\_\_\_ are the tools that evaluate the logical complexity of a program and search for redundant data definitions.

[a] Documentators [b] Restructors [c] Analyzers [d] Diagrammers

8) In a \_\_\_\_\_ distributed database system, all databases are of different type.

[a] Client/server [b] Homogeneous [c] Heterogeneous [d] None of these

**Q-2 Answer the following questions in brief (Any Seven).**

[14]

1) Define Database. List various data types available in SQL.

2) Differentiate: DBMS V/S RDBMS.

3) What is reverse engineering?

4) Define entity integrity and domain integrity.

5) Write the uses of EXCEPTION section in PL/SQL.

6) Explain use of REVOKE statement with an example.

7) Write the uses of table DUAL in PL/SQL with example.

8) Explain briefly with example(s) : LENGTH(), ABS().

9) Explain briefly cross join.

- Q-3 Do as directed.**
- [A] Discuss Dr. E.F. Codd's Rules. [06]
- [B] Compare 2-Tier Architecture with 3-Tier Architecture. [06]
- OR**
- [B] Explain briefly the process of Normalization. [06]

- Q-4 Do as directed.**
- [A] What is Commit? Explain 2-phase and 3-phase Commit Protocols in Details. [06]
- [B] Define E-R diagram and draw E-R Diagram for Banking System. [06]
- OR**
- [B] Discuss Event-Driven Programming with Example. [06]

- Q-5 Do as directed.**
- [A] Explain in detail about PL/SQL code block. [06]
- [B] Write the advantages of using stored function & procedures. Also write the differences between them. [06]
- OR**
- [B] Write a Function named FSUB, which subtracts two given numbers. [06]
- Write a PL/SQL block code, which reads two numbers and using function FSUB, Finds subtraction of that two numbers and print the result.

- Q-6 Do as directed.**
- [A] Explain Cursor with its type & attributes in detail. [06]
- [B] Explain briefly the following commands with example(s) : (Any TWO) [06]
- i. UPDATE ii. INSERT iii. ALTER TABLE

- OR**
- [B] Write a set of SQL commands for each of the following. [Any THREE] [06]
- i. To create a table EMP having fields (ENO number(2,0), DNO number(1,0), ENAME varchar2(15)), where ENO is primary key and DNO is foreign key referencing DEPTNO of table DEPT.
- ii. List out DEPT\_NO and department number wise total BASIC\_PAY for all employees of EMP table.
- iii. Add primary key on column ENO to an existing table EMP.
- iv. Give permission on table DEPT to user XYZ to update the content of DEPT

### Best Of Luck ###

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SEAT No. \_\_\_\_\_

No. of Printed Pages : 2

Sardar Patel University

External Examination

M.Sc. (Information Technology) Semester – I

PS01CINT24: Operating System Concepts

10<sup>th</sup> November, 2017 Friday

Time: 02:00 PM to 05:00 PM

Max. Marks: 70

**Q-1 Choose the most appropriate option for each question.**

[08]

- (i) The degree of Multiprogramming is controlled by \_\_\_\_\_.  
a) CPU Scheduler                      b) Long Term Scheduler  
c) Short Term Scheduler              d) Swapping
- (ii) Which storage device has higher working speed than main memory?  
a) Optical disk                          b) Cache  
c) Electronic disk                      d) Magnetic disk
- (iii) A process waiting for a processor is said to be in the \_\_\_\_\_ state.  
a) Ready                                  b) Waiting  
c) Running                                d) New
- (iv) \_\_\_\_\_ is a solution of starvation problem.  
a) Blocking                              b) Aging  
c) Swapping                              d) Paging
- (v) \_\_\_\_\_ stores the value of the starting address of the process in the memory.  
a) Base register                          b) Limit register  
c) Programme counter                  d) All of these
- (vi) Which of the following is not a solution to the critical section problem?  
a) Monitor                                b) Peterson's algorithm  
c) Banker's algorithm                   d) RAID
- (vii) Which of the following is not a working mode of operating system?  
a) Supervisor                            b) User  
c) Kernel                                 d) None of these
- (viii) Which of the following operation can be performed by a process without invoking system call?  
a) Creation of child process            b) Kill other process  
c) Call to user function                 d) Message passing

**Q-2 Answer ANY SEVEN from the following**

[14]

- (i) Briefly explain the term operating system.  
(ii) What is system call?  
(iii) Draw queuing diagram.  
(iv) Define signal() and wait() in context of semaphore.  
(v) What is safe state?  
(vi) Differentiate between logical and physical address.  
(vii) Briefly explain segmentation.  
(viii) Differentiate between SCAN and LOOK disk scheduling algorithms.  
(ix) List benefits of multithreading.

①

C.P.T.O.)

Page 1 of 2

**Q-3**

- A. List different types of structures of the operating system. Explain any one of them in detail. [06]
- B. What do you mean by the words "interrupt" and "trap"? Explain interrupt handling by the operating system. [06]

**OR**

- B. Write a note on single processor and multiprocessor computer systems.

**Q-4**

- A. Explain FCFS cpu scheduling algorithm by giving suitable example of your choice. [06]
- B. Write a note on message passing system for inter process communication. [06]

**OR**

- B. What is critical section problem? Explain necessary condition to solve critical section problem.

**Q-5**

- A. What is paging? Explain basic method of paging. [06]
- B. What do you mean by address binding? Explain compile time, load time and execution time address binding. [06]

**B.**

**OR**

Explain optimal page replacement algorithm by considering following reference string:

7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1

Assume that each process is given three frames in the memory.

Calculate number of page faults for the same.

**Q-6**

- A. What is directory? List different structures of directory and briefly explain any two of them [06]
- B. What is file? List different types of files. Briefly explain the operations that can be performed on files. [06]

**OR**

- B. What is RAID? Explain advantages of RAID.

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(2)

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8c  
Total No. of printed pages: 02

**SARDAR PATEL UNIVERSITY**  
**M.Sc. (Information Technology)**  
**Semester – I External Examinations**  
**PS01CINT25 ( Systems Analysis and Design )**  
**13<sup>th</sup> November, 2017 (Monday)**

Time: 02:00 PM to 05:00 PM

Max. Marks: 70  
[08]

**Q-1 Choose most appropriate option for the following:**

1. Full form of DFD is \_\_\_\_\_.  
[A] Data Flow Design [B] Design Flow Diagram  
[C] Data Flow Diagram [D] None of these
2. \_\_\_\_\_ is not a type of feasibility study.  
[A] Operational [B] Technical  
[C] Economical [D] None of these
3. \_\_\_\_\_ is also referred as classical model of systems development.  
[A] SDLC [B] SADM  
[C] Application prototyping [D] None of these
4. \_\_\_\_\_ is defined as the result of an operation.  
[A] Input [B] Output  
[C] Goal [D] Process
5. Generally context level DFD contains \_\_\_\_\_ number of processes.  
[A] Four [B] Two  
[C] Three [D] None of these
6. \_\_\_\_\_ can be defined as a set of interrelated elements to accomplish some specific task.  
[A] Data [B] System  
[C] Information [D] None of these
7. \_\_\_\_\_ is the feature which must be included in proposed system.  
[A] Prototype [B] Objectives  
[C] Requirement [D] None of these
8. Full form of DD is \_\_\_\_\_.  
[A] Data Document [B] Document Data  
[C] Data Directory [D] Data Dictionary

①

(P.T.O.)

**Q-2 Write answers in short: (ANY SEVEN)**

**[14]**

- a. Define: Data and Information
- b. Draw Data Pyramid.
- c. Draw basic structure of decision tree.
- d. What is DFD? Show various symbols of it with proper labels.
- e. List objectives of system design.
- f. Explain use of prototype.
- g. Explain CASE tools in brief.
- h. Differentiate between structured interview and unstructured interview.
- i. What is subsystem? Explain it taking suitable example.

**Q-3 Do as Directed.**

- A List and explain basic components of system. **[06]**
- B Define: System Analyst. List and explain role of system analyst in information system development process. **[06]**

**OR**

- B List and explain various types of requirement determination. **[06]**

**Q-4 Do as Directed.**

- A What is SDLC? List and explain various phases of it in brief. **[06]**
- B Draw Context level DFD, FDD and First level DFD for Library Management System. **[06]**

**OR**

- B Draw Context level DFD, FDD and First level DFD for Inventory Management System. **[06]**

**Q-5 Do as Directed.**

- A List and discuss steps in prototype development. **[06]**
- B List and explain various misconceptions about prototyping. **[06]**

**OR**

- B Explain design of Input and Output. **[06]**

**Q-6 Do as Directed.**

- A List and explain various conversion methods in detail. **[06]**
- B List and explain different training methods. **[06]**

**OR**

- B Discuss various components of design. **[06]**

**XXXXX**

**(2)**