BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)
B.C.A. Sem-III :SUMMER : 2023
SUBJECT : OPERATING SYSTEMS

Day : Tuesday

Time : 10:00 AM-01:00 PM

Date : 2/5/2023

S-18767-2023

Max. Marks : 60

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N.B.

1) **Q. No. 4** from Section-I is COMPULSORY.
2) Attempt **ANY TWO** questions from **Q.No. 1 to Q. No. 3** in Section – **I.**
3) Attempt **ANY TWO** questions from **Q.No. 5 to Q. No. 7** in Section – **II.**
4) Figures to the **RIGHT** indicate **FULL** marks.
5) Answers to both the sections should be written in **SAME** answer book.

SECTION-I

Q.1   **a)**   Justify with example "Operating system acts as a resource manager".   **(06)**
       b)   Differentiate between Implicit tasking and explicit tasking.   **(06)**

Q.2   **a)**   What is a page table? Give the structure of a page table.   **(06)**
       b)   What are monitors? Explain the format of monitor with example.   **(06)**

Q.3   **a)**   Explain the need and working of Direct memory access.   **(06)**
       b)   Explain about file system security.   **(06)**

Q.4   Write short notes on **ANY THREE** of the following :   **(12)**
       a)   Multiprocessing operating system
       b)   Multiple level queue scheduling
       c)   Working set model
       d)   Device driver
       e)   Consumable resources

SECTION-II

Q.5   Consider the following case.   **(12)**

Processes	Arrival Time (am)	Run Time (min)
P1	10.00	9
P2	10.01	10
P3	10.06	3
P4	10.08	5

Calculate average waiting and turnaround time in case of :
     a) SJF   b)   SRTN

Q.6   Main memory consist of operating system at head, below it 30 k hole then some part of memory in use, below it 11 k hole then some part of memory in use, below 22 k hole then some part of memory in use, below 33 k hole. A request form 18 k process received to accommodate memory. Draw the basic structure of memory and implement following algorithms on it.   **(12)**
a) Best fit   b)First fit   c)Worst fit

Q.7   Consider the disk having 50 tracks, numbered 0 to 49. Currently head is on track number 34 and moving inside. Following is the queue of requests kept in the FIFO order.   **(12)**
35,17,10,5,33,46,23,48,7,45,
Calculate total time required to move all these tracks using following disk scheduling algorithms. (Consider Seek time= 0.5 second)
     a)   FCFS b)   SSTF

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BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)
B.C.A. Sem-III : SUMMER : 2023
SUBJECT : SOFTWARE ENGINEERING

Day : Thursday   Time : 10:00 AM-01:00 PM

Date : 4/5/2023   **S-18768-2023**   Max. Marks : 60

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N. B. :
  1) **Q. No. 4** is **COMPULSORY.**
  2) Figures to the right indicate **FULL** marks.
  3) Attempt **ANY TWO** questions from **Q. No. 1, 2, 3** in section **I**.
  4) Attempt **ANY TWO** questions from **Q. No. 5, 6, 7** in section **II**.
  5) Answer to both the sections should be written in **SAME** answer book.

SECTION – I

Q. 1 **a)** Define Software Engineering? Write principles of software engineering.   **(06)**

   b) What is feasibility study? Explain different types of feasibility study.   **(06)**

Q. 2 **a)** What is requirement? Explain different types of requirements.   **(06)**

   b) Explain prototyping model in detail.   **(06)**

Q. 3 **a)** What is Decision Tree? Explain it with one example.   **(06)**

   b) What is Cohesion? Explain different types of Cohesion.   **(06)**

Q. 4   Write short notes on **ANY THREE** of the following: **(12)**
   a) Waterfall model
   b) DFD(Data Flow Diagram)
   c) Version Control
   d) Data Dictionary

SECTION – II

Q. 5 **a)** What is Testing? Explain any two types of testing.   **(06)**

   b) What is Quality? Explain SQA plan.   **(06)**

Q. 6 **a)** What is mean by ERD? Explain the different notation used to draw ERD with example.   **(06)**

   b) What is Software Maintenance? Explain its categories.   **(06)**

Q. 7   Write short notes on **ANY THREE** of the following: **(12)**
   a) Pseudo Code
   b) Structured Chart
   c) Input and Output Design
   d) Software Characteristics

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BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)
B.C.A. Sem-III :SUMMER : 2023
SUBJECT : DBMS-II

Day : Monday

Date : 8/5/2023

Time : 10:00 AM-01:00 PM

S-18769-2023

Max. Marks : 60

SECTION-I

Q.1 What is SQL? Explain the various components of SQL. **(12)**

Q.2 What are data constraints? Explain the syntax of defining Primary on the table with example. **(12)**

Q.3 Explain the following SQL commands with example: **(12)**
    i) Describe   ii) Rename   iii) Truncate

Q.4 Write short note on **ANY THREE** of the following: **(12)**

    a) NOT NULL
    b) IN and NOT IN clause
    c) Index and its types
    d) Cursors and its types

SECTION-II

Q.5 Consider the following database structure. **(12)**
Course (C_no, Cname, Duration, Fees)
Student (R_no, Name, Address, C_no)

Write SQL Queries for the following:

    a) Crate above tables with proper constraints.
    b) Insert records in tables.
    c) Display names of all students in an alphabetical order.
    d) Display total number of courses.
    e) Display name, address, Roll No of student studying in 'MCA'.
    f) Give the course name in which 'Rahul Verma' is studying.

Q.6 What are joins? Explain the different types of joins with example. **(12)**

Q.7 Consider table Employee with Eno(PK), Ename, Dno, Salary **(12)**
Write a PL/SQL block using cursor to display the top five highly paid employees.

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Day : Thursday

Time : 10:00 AM-01:00 PM

Date : 11/5/2023

S-18770-2023

Max. Marks : 60

N.B. :
1) **Q. No. 4** from **Section – I** is **COMPULSORY**.
2) Answer **ANY TWO** questions from Questions **1, 2** and **3** in **Section - I**.
3) Answer **ANY TWO** questions from Questions **5, 6** and **7** in **Section - II**.
4) Figures to the right indicate **FULL** marks.
5) Answer to both the sections should be written in **SAME** answer book.

SECTION - I

Q.1   Define Statistics. Explain importance of statistics.   **(12)**

Q.2   Calculate Mean, Median and Mode for following data: **(12)**

Classes	0-5	5-10	10-15	15-20	20-25	25-30	30-35
Frequency	6	10	20	22	14	6	2

Q.3   What is primary and secondary data? Explain various methods to collect   **(12)**
primary data.

Q.4   Write short note on **ANY TWO** of the following: **(12)**

   a)   Ogive curves
   b)   Limitations of statistics
   c)   Range

SECTION - II

Q.5   Calculate Karl Pearson's coefficient of correlation for the data given: **(12)**

X	6	2	10	4	8
Y	9	11	5	8	7

Q.6   **Find :**   **(12)**

   i)   Two Regression equations
   ii)   Value of x when y = 4
   iii)   Value of y when x = 5

X	2	6	4	8	10
Y	3	5	6	9	12

Q.7   Explain the following: **(12)**

   a)   Components of time series analysis

   b)   Standard Deviation

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Day : Saturday   Time : 10:00 AM-01:00 PM

Date : 13-05-2023   **S-18771-2023**   Max. Marks : 60

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N.B.
1) **Q. No. 4** from Section – I is **COMPULSORY.**
2) Answer any **TWO** questions from **Q. No. 1, 2, 3,** in Section – **I** and answer any **TWO** questions from **Q. No. 5, 6, 7** in Section – **II.**
3) Figures to the right indicate **FULL** marks.
4) Answers to both sections should be written in **SAME** answer book.

SECTION - I

Q.1   Define multimedia and explain use of multimedia in various sectors.   **(12)**

Q.2   What are authoring tools? Explain time based tools and icon based tools in detail.   **(12)**

Q.3   What is magnetic storage? Explain hard disk and RAID in detail.   **(12)**

Q.4   Write short notes on any **THREE** of the following: **(12)**
   a)   CD and DVD
   b)   Multipoint conferencing
   c)   HDTV
   d)   Use of text in multimedia

SECTION - II

Q.5   What is use of image? Describe image color models in detail.   **(12)**

Q.6 **a)**   What is sound? Explain in brief its various characteristics.   **(06)**

   b)   Discuss steps for creating animated scene in detail.   **(06)**

Q.7   Explain multimedia information representation and communication modes in detail.   **(12)**

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