BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)
B.C.A. Sem-III : : SUMMER - 2022
SUBJECT : OPERATING SYSTEMS

Day : Tuesday
Date : 24-05-2022

S-18767-2022

Time : 02:00 PM-05:00 PM
Max. Marks : 60

N.B.

1) **Q. No. 4** is **COMPULSORY**.
2) Answer any **TWO** questions from Q. No. 1, 2, 3 in Section – **I.**
3) Answer any **TWO** questions from Q. No. 5, 6, 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.
6) Draw neat labeled diagram **WHEREVER** necessary.

SECTION - I

Q.1 Differentiate between:

a) Shortest job first and shortest remaining time next **(06)**
b) Multitasking and Multiprogramming. **(06)**

Q.2 **a)** Explain any two types of Operating system structures with their merits and demerits. **(06)**
b) What is scheduler? How many types of schedulers exist in an Operating Systems? Explain. **(06)**

Q.3 **a)** What is a page table? Define the structure of a page table. **(06)**
b) Explain the need and working of Direct Memory Access. **(06)**

Q.4 Write short notes on any **THREE** of the following: **(12)**

a) Device drivers
b) Directories
c) Working set model
d) Second chance page replacement algorithm
e) Swapping

SECTION - II

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

Processes	In time (am)	Burst time (min)
P1	10.00	7
P2	10.03	2
P3	10.05	3
P4	10.06	1

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

Q.6 Suppose the head of moving hard disk with 200 tracks, numbered 0 to 199, is currently serving a request at track 143 and moving outside. If the queue of requests is kept in the FIFO order. **(12)**

86, 147, 91, 177, 94, 150, 100, 175, 130, 35, 140

Calculate total time required to move all these tracks using following disk scheduling algorithms. Consider Seek time – 0.4 see.
i) FCFS ii) SSTF

Q.7 What are semaphores? Explain the producer – consumer problem and give the solution to this problem using semaphore . **(12)**

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BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)
B.C.A. Sem-III : : SUMMER - 2022
SUBJECT : SOFTWARE ENGINEERING

Day : Thursday
Date : 26-05-2022

S-18768-2022

Time : 02:00 PM-05:00 PM
Max. Marks : 60

N. B. :

1) **Q. No. 4** is **COMPULSORY**.
2) Attempt **ANY TWO** questions from **Q. No 1, 2, 3** in Section – **I**.
3) Attempt **ANY TWO** questions from **Q. No 5, 6, 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)** What is mean by Software? Explain different characteristics of Software. **(06)**

b) Explain Prototyping Model in detail. **(06)**

Q. 2 **a)** What is mean by Requirement Engineering? Explain characteristics of Good SRS. **(06)**

b) What is mean by Model? Explain Waterfall model. **(06)**

Q. 3 **a)** Explain Software Requirement Specification document Outline. **(06)**

b) What is Decision Table? Explain it with one example. **(06)**

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

a) Pseudo code
b) Integration Testing
c) Rapid Application Development model
d) Cost Benefit Analysis

SECTION – II

Q. 5 **a)** What is configuration management? Explain SCM (Software Configuration Management) process. **(06)**

b) Explain Verification and Validation process. **(06)**

Q. 6 **a)** What is cohesion? Explain different types of Cohesion. **(06)**

b) What is software maintenance? Explain Maintenance Activities. **(06)**

Q. 7 Write short notes on **ANY THREE** of the following: **(12)**

a) Entity – Relationship Diagrams
b) Structured Chart
c) SQA Plan
d) Reuse Oriented Model

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BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)
B.C.A. Sem-III : : SUMMER - 2022
SUBJECT : DBMS-II

Day : Saturday
Date : 28-05-2022

S-18769-2022

Time : 02:00 PM-05:00 PM
Max. Marks : 60

N.B.:

1) **Q.No.4** from Section – I is **COMPULSORY**.
2) Answers **ANY TWO** questions from **Q.1, 2, 3** in section – I.
3) Answers **ANY TWO** questions from **Q.5, 6, 7** in section – II.
4) Figures to the right indicate **FULL** marks.
5) Answers to both the sections to be written in **SAME** answer book.
6) Draw a labeled diagram **WHEREVER** necessary.

SECTION – I

Q.1 What is oracle? Explain various features of oracle in detail. **[12]**

Q.2 What do you mean by Primary Key and Foreign Key in RDBMS? What is their significance? Describe the syntax of defining Primary Key and Foreign Key with relevant examples. **[12]**

Q.3 Explain views in detail. Write down the syntax of creating views and explain its operations with examples. **[12]**

Q.4 Write short notes on **ANY THREE** of the following: **[12]**

a) Oracle Data Types
b) Date Functions with Syntax and examples
c) Differentiate between Outer join and Inner join
d) Subqueries

SECTION – II

Q.5 Write SQL queries for the following:

a) Create following tables with proper constraints: **[02]**
Employee (Eno, Ename, City, deptname)
Project (Pno, Pname, Status)
Emp_Proj (Eno, Pno, No_of_Days)

b) Insert 2 records in each table. **[02]**

c) List the Employees working in 'Research and Development' department. **[02]**

d) Display the projects on which Employee 'Raj Verma' is working. **[02]**

e) Display the projects with status 'Completed'. **[02]**

f) Display the total Number of employees working on project 'CRM'. **[02]**

Q.6 Create a table named Items with Item code, Item Name, Quantity and Unit Price. Write a PL/SQL program to display the items whose unit price is greater than Rs. 20 and quantity supplied is greater than 5000. **[12]**

Q.7 What is trigger? What are the different types of triggers? Explain its application with the help of example. **[12]**

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BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)
B.C.A. Sem-III : : SUMMER - 2022
SUBJECT : STATISTICS

Day : Tuesday
Date : 31-05-2022

S-18770-2022

Time : 02:00 PM-05:00 PM
Max. Marks : 60

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 Define Statistics. Explain the applications of Statistics in various fields. **(12)**

Q.2 Calculate mean, median and mode for the following data : **(12)**

Classes	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	05	20	40	55	30	15	5

Q.3 The runs scored by two batsmen A and B in ten innings are as below : **(12)**

A	10	115	5	73	7	120	36	84	29	19
B	45	12	76	42	4	50	37	48	13	10

Calculate S.D. and Coefficient of Variation.

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

a) Karl Pearson's coefficient of correlation
b) Deciles, percentiles and quartiles
c) Ogive curves

SECTION – II

Q.5 What is primary data and secondary data? Explain various primary data collection methods in brief. **(12)**

Q.6 In a beauty contest three judges have ranked 10 candidates as follows : **(12)**

Candidate	A	B	C	D	E	F	G	H	I	J
Judge I	6	1	4	8	7	5	3	10	9	2
Judge II	3	5	6	1	8	2	4	10	9	7
Judge III	1	2	3	4	5	6	7	8	9	10

Using rank correlation coefficient find which pair of judges have nearest approach towards beauty?

Q.7 What is time series analysis? Explain various components of time series. **(12)**

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BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)
B.C.A. Sem-III : : SUMMER - 2022
SUBJECT : MULTIMEDIA TECHNOLOGY

Day : Thursday
Date : 2/6/2022

S-18771-2022

Time : 02:00 PM-05:00 PM
Max. Marks : 60

N.B.:

1) **Q. No. 4** is **COMPULSORY**.
2) Solve any **TWO** questions from Q. No. **1, 2** and **3.**
3) Solve any **TWO** questions from Q. No. **5, 6** and **7.**
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 Define multimedia. Explain the applications of multimedia in business and home. **(12)**

Q.2 State the various multimedia authoring tools. Give a brief note on card and page based authoring tools. **(12)**

Q.3 What is video? Explain the concept of HDTV and HD video in brief. **(12)**

Q.4 Write short notes on any **THREE** of the following: **(12)**

a) DVD

b) Audio file formats

c) Types of text

d) Multipoint conferencing

SECTION-II

Q.5 **a)** Explain in detail the use of text in multimedia. **(06)**

b) Describe various image file formats. **(06)**

Q.6 What is animation? Explain the steps of creating a rolling ball animation. **(12)**

Q.7 Describe various communication modes and network types in multimedia. **(12)**

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