Code No. E-12006/CBCS

FACULTY OF INFORMATICS

M.C.A. (3 Years Course) II Semester (CBCS) (Backlog) (New) Examination,
October / November 2023

Subject: Probability and Statistics

Time: 3 Hours **Max. Marks: 70**

Note: I. Answer one question from each unit. All questions carry equal marks.
II. Missing data, if any, may be suitably assumed.

Unit – I

1. Calculate arithmetic mean from the following data

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
No. of Students	33	53	108	221	153	322	439	526	495	50

(OR)

2. a) Explain the merits and demerits of mode.
   b) Calculate mode from the following data

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	5	15	20	20	32	14	14

Unit – II

3. A bag contains 4 defective and 6 good electric bulbs. Two electric bulbs are drawn at random one after the other without replacement. Find the probability that
   i) two are good
   ii) two are defective and
   iii) one is good and one is defective.

(OR)

4. a) State and prove Baye's theorem.
   b) Explain normal probability distribution.

Unit – III

5. a) If we can assert with 95% that the maximum error is 0.05 and P=0.2, find the sample test.
   b) A random sample of size 100 has a standard deviation of 5. What can you say about the maximum error with 95% confidence?

(OR)

6. In a sample of 1000 people in Karnataka 540 are rice eaters and the rest are wheat eaters. Can we assume that both rice and wheat are equally popular in this state at 1% level of significance?

Unit – IV

7. a) A manufacture claims that any of his list of items cannot have variance more than $1\,cm^2$. A sample of 25 items has a variance of $1.2cm^2$.Test whether the claim of the manufacturer is correct.
   b) In two large populations, there are 30%, and 25% respectively of fair haired people. Is this difference likely to be hidden in samples of 1200 and 922 respectively from the two populations?

(OR)

..2..

8. On the basis of information given below about the treatment of 200 patients suffering from a disease, state whether the new treatment is comparatively superior to the conventional treatment

	Favourable	Not Favourable	Total
New	60	30	90
Conventional	40	70	110

Unit – V

9. a) What are the properties of the coefficient of correlation.
   b) Calculate Karl Pearson's coefficient of correlation between the heights of fathers and sons from the following

Height of fathers (In inches)	65	66	67	68	69	70	71
Height of Sons (In inches)	67	68	66	69	72	72	69

(OR)

10. From the following data, obtain two regression equations and calculate the correlation coefficient

X	2	4	6	8	10	12	14	16	18
Y	18	16	20	24	22	26	28	32	30

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Code No: E-12062/CBCS

FACULTY OF INFORMATICS

M.C.A. (3 Years Course) II Semester (CBCS) (Backlog) (Old) Examination,
October / November 2023

Subject: Principles of Object Oriented Programming Using JAVA

Time: 3 Hours **Max. Marks: 70**

Note: I. Answer one question from each unit. All questions carry equal marks.
II. Missing data, if any, may be suitably assumed.

Unit - I

1. a) Discuss Object Oriented System Development in detail.
   b) Explain the Inheritance with proper example.

(OR)

2. a) What is an Array. Write a program to demonstrate matrix multiplication.
   b) Describe Control statements in java.

Unit – II

3. a) Discuss String handling methods.
   b) Describe the Exception Handling mechanism in java.

(OR)

4. a) Explain Multithreading with an example.
   b) Write about the Printer Writer Class.

Unit – III

5. a) Discuss Collection Interfaces.
   b) Explain Iterator class & Comparator interface.

(OR)

6. a) Write short notes on String Tokenizer & Timer classes.
   b) Describe Legacy classes and Interfaces.

Unit – IV

7. a) Discuss Character Streams.
   b) Describe Serialization.

(OR)

8. a) Explain methods of File class.
   b) What are the various I/O classes and Interfaces?

Unit – V

9. a) Discuss the Applet class in detail.
   b) Describe Delegation Event Model.

(OR)

10. a) How to handle Mouse Events?
    b) Discuss Text related GUI components.

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Code No. E-12178/CBCS

FACULTY OF INFORMATICS

M.C.A. (2 Years Course) II Semester (CBCS) (Main & Backlog) Examination, October / November 2023

Subject: Operating Systems

Time: 3 Hours **Max. Marks: 70**

Note: I. Answer one question from each unit. All questions carry equal marks.
II. Missing data, if any, may be suitably assumed.

Unit – I

1. a) Give an account on File Permissions in Unix.
   b) Discuss about Process Life Cycle and PCB.

(OR)

2. a) Describe Round Robin Scheduling algorithm with Example.
   b) Elucidate Necessary conditions for Deadlock.

Unit - II

3. a) Discuss about Contagious Memory Allocation.
   b) Illustrate Segmented Paging with neat Diagram.

(OR)

4. a) What is page fault? Explain LRU page Replacement algorithms with suitable example.
   b) What is swapping? Explain Best Fit and First Fit Algorithms.

Unit - III

5. a) Explain about File System architecture.
   b) Describe different File Access Methods.

(OR)

6. Discuss the following
   a) RAID Levels b) File Allocation Methods

Unit - IV

7. a) Give an account on Access controls and rights.
   b) Describe Capability based Protection.

(OR)

8. Discuss the following
   a) System Security Problem b) Program Threats

Unit - V

9. a) Describe the Kernel Modules of Linux Operating System.
   b) Illustrate Process Management Linux.

(OR)

10. a) Describe the design principles of Windows7.
    b) Explain about Terminal services in Windows.

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