

Hall Ticket Number :

--	--	--	--	--	--	--	--	--	--	--

R-17

Code: 7G145

II B.Tech. II Semester Supplementary Examinations November 2023

Operating Systems

(Computer Science and Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks)

Marks CO BL

UNIT-I

1. a) Describe the differences between short-term, medium-term, and long-term scheduling. 7M CO1 L4
- b) Explain the direct and indirect process of communication using the message passing system? 7M CO1 L2

OR

2. a) What is an Operating system? List and explain different Operating Systems Operations? 7M CO1 L2
- b) Why Operating System is known as Resource Manager. Explain the layered architecture of an Operating System 7M CO1 L2

UNIT-II

3. Elaborate on different Multithreading models? 14M CO2 L2

OR

4. a) What are semaphores? Explain Binary and counting semaphores with example? 7M CO2 L2
- b) Elaborate on the race condition in process synchronization? 7M CO2 L2

UNIT-III

5. a) Is it possible to have a deadlock involving only a single process? Explain your answer? 7M CO3 L4
- b) Explain the different methods to recover from the deadlock? 7M CO3 L2

OR

6. a) What is a Safe State is Deadlock? Explain Banker's Algorithm for Deadlock Avoidance with a suitable example? 8M CO3 L2
- b) What is a deadlock? Explain in brief Deadlock Prevention? 6M CO3 L2

UNIT-IV

7. List and Discuss different Disk scheduling algorithms with suitable examples? 14M CO4 L4

OR

8. What is RAID? Explain different RAID levels with a neat diagram? 14M CO4 L2

UNIT-V

9. a) Discuss the protection of operating systems using firewalls? 7M CO5 L2
- b) Discuss different types of standard security attacks. 7M CO5 L2

OR

10. a) Draw and explain about PC bus structure? 7M CO5 L2
- b) Outline the significance of polling in I/O systems? 7M CO5 L2

Hall Ticket Number :

--	--	--	--	--	--	--	--	--	--

R-17

Code: 7GC42

II B.Tech. II Semester Supplementary Examinations November 2023

Probability and Statistics

(Common to CE, ME & CSE)

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks)

Marks CO BL

UNIT-I

1. Find the coefficient of correlation between industrial production and export using the following data and comment on the result.

Production (in crores tons):	55	56	58	59	60	60	62
Exports (in crores tons) :	35	38	38	39	44	43	45

14M CO1 L3

OR

2. Find the Spearman's rank correlation coefficient to the data:

X:	68	64	75	50	64	80	75	40	55	64
Y:	62	58	68	45	81	60	68	48	50	70

14M CO1 L3

UNIT-II

3. State and prove Addition theorem on probability for three events

14M CO2 L4

OR

4. A random variable X has the following probability function

X	0	1	2	3	4	5	6	7
P(X)	0	K	2K	2K	3K	K ²	2K ²	7K ² +K

Find the value of K , (ii) Evaluate $p(0 < x < 5)$, (iii) Evaluate $p(x < 5)$

14M CO2 L3

UNIT-III

5. If a random variable has a Poisson distribution such that $P(1) = P(2)$ find (i) Mean of the distribution, (ii) $P(4)$, (iii) $P(x = 1)$, (iv) $P(1 < x < 4)$

14M CO3 L2

OR

6. A hospital switch board receives an averages of 4 emergency calls in a 10 minutes interval. What is the probability that (i) there are at most 2 emergency calls in a 10 minute interval (ii) there are exactly 3 emergency calls in a 10 minute interval?

14M CO3 L3

UNIT-IV

7. A random sample of size 100 has a standard deviation of 5. What can you say about the maximum error with 95% confidence?

14M CO4 L4

OR

8. The mean life of a sample of 10 electric bulbs was found to be 1456 hours with S.D of 423 hours. A second sample of 17 bulbs chosen from a different batch showed a mean life 1280 hours with S.D. of 398 hours. Is there a significant difference between the means of two batches?

14M CO4 L4

Important Note: 1. On completing your answers. Compulsorily draw diagonal cross line on the remaining blank pages. 2. Any revealing of identification, appeal to evaluator and/or equations written eg. 32+8=40, will be treated as malpractice.

UNIT-V

9. In a test given two groups of students, the marks obtained are as follows:

First Group :	18	20	36	50	49	36	34	49	41
Second Group:	29	28	26	35	30	44	46	-	-

Estimate the significance of the difference between the mean marks secured by the students of the above two groups.

14M CO4 L4

OR

10. 1000 students at college level were graded according to their IQ and economic condition of their home. Chose an appropriate test to find the any association between condition at home and I.Q.

economic condition	high	low	Total
Rich	460	140	600
Poor	240	160	400
Total	700	300	1000

14M CO4 L5

Hall Ticket Number :

R-17

Code: 7G144

II B.Tech. II Semester Supplementary Examinations November 2023

Object Oriented Programming using JAVA

(Computer Science and Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks)

Important Note: 1. On completing your answers. Compulsorily draw diagonal cross line on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 32+8=40, will be treated as malpractice.

UNIT-I

Marks CO BL

1. Define multidimensional array? Write a java program for matrix multiplication. 14M CO1 L2

OR

2. a) List and explain the java buzz words. 8M CO1 L2

b) What is Byte code? Explain the various stages of programming in Java 6M CO1 L2

UNIT-II

3. a) Explain with an example program the importance of interfaces in java programming. 7M CO2 L3

b) What is polymorphism? Explain runtime polymorphism with a program. 7M CO2 L3

OR

4. a) List the advantages of packages over classes. 7M CO2 L1

b) Explain access specifiers in java in detail. 7M CO2 L2

UNIT-III

5. In how many ways a thread in java can be implemented? Explain each with example program. 14M CO3 L3

OR

6. What is an Exception? List out the keywords for exception handling and write steps to develop user defined exception. 14M CO3 L3

UNIT-IV

7. a) Discuss about the instance variable and static variable capture using lambda. 7M CO4 L5

b) What is a Generic Method? Illustrate Generic Method with an example program 7M CO4 L3

OR

8. a) What are the three parts of a Lambda Expression? What is the type of Lambda Expression? 7M CO4 L5

b) What are the restrictions on generics usage? Explain briefly. 7M CO4 L2

UNIT-V

9. a) Write and explain the Collection interface. 7M CO5 L2

b) Explain ArrayList class and explain following methods:
i. add() ii. size() iii. equals() iv. remove() 7M CO5 L2

OR

10. a) Give brief description about the LinkedList class in java Collection 7M CO5 L2

b) Demonstrate stack operations using Stack legacy class. 7M CO5 L3
