

Department of Computer Science
Gujarat University
5 Years Int. M.Sc. (CS) – Sem 3
Second Sessional Examination
Subject: Open Source Software

Time: 1:00 Hour

Max. Marks: 15

Instructions: 1] Figure to the right indicates full marks.
2] All Questions are compulsory.

Q-1 Answer the followings in brief.

03

Discuss software installation in Linux using Command Line Interface.

OR

Write a short note on positional parameters (command line arguments)

Q-2 Do as directed (Any 3)

12

1. Write a shell script that reads price of a book, apply 10% discount and calculate the final price of the book.
2. Write a shell script to find the sum of first 50 numbers. (from 1 to 50)
3. Write a menu driven shell script, if user enters '1' – display date, '2' – display online users, '3' – display calendar and for any other number – display wrong choice.
4. Write a short note on "if" condition in shell scripting.
5. Write a shell script to read a file line by line.

DEPARTMENT OF COMPUTER SCIENCE
GUJARAT UNIVERSITY
5-year Integrated M.Sc.(Computer Science) SEM III
Subject: Object Oriented Concept and Programming
Sessional Examination – II

7th December, 2022

Time: 1 hr 30 min
Max. Marks: 30

Q1. Answer the followings.(Any Nine)

18

- (1) What is pure virtual function? Why we require it?
- (2) What is the use of this pointer?
- (3) What is namespace? Write a Syntax to give aliasing to namespace?
- (4) Write down any two ios member functions with example?
- (5) Is it possible to create user defined manipulator? If No give reason. If yes write Syntax.
- (6) What is the use of following I/O Modes?
 1. ios::app
 2. ios::trunc
- (7) Does namespace introduce any overhead? Give reason for your answer.
- (8) What are the advantages of inheritance?
- (9) How many ways to open a binary file in C++? Write syntax for all ways?
- (10) Write use and syntax of seekg() and seekp().

Q2. Attempt the following Questions. (Any Three)

12

- (1) What is inheritance? List out the type of Inheritance? Also explain derivation using different access modifier.
- (2) What is multiple Inheritance and discuss the problem with the multiple inheritance and explain the solution to that problem?
- (3) Write down the difference between ios functions and manipulators.
- (4) Explain the components of Standard Template Library.

GUJARAT UNIVERSITY
5 Year Integrated M. Sc. (Computer
Science) Semester : III
Sessional Examination - II
Subject Name : General English

Time : 1 hr 30 min

Marks :15

Q-1 write six difference between simple and compound sentence ? **2 marks**

Q-2 write difference between relative pronoun and subordinate in complex sentence ? **2 marks**

Q-3 write rules and structure of direct and indirect speech in each tenses ? **3 marks**

Q-4 write the application for the post of an software engineer? **2 marks**

Q-5 write the definition of transformation of sentence and answer the questions? **2 Marks**

1. This coffee is 'so' hot that I cannot drink it ?
2. The boss was 'too' angry to listen ?
3. The problem was 'too' complicated to solve ?
4. This grammar is 'so' difficult that a child cannot understand it ?
5. It is 'so' cold that we cannot go out ?

Q-6 write a 3 page essay on British English and American English with examples **4marks**

OR

Q-6 write an memo on a launch of a new products in a company

Department of Computer Science
Gujarat University
5 years Int. M.Sc – III (Computer Science)
Sessional – II

Subject: Database Management Systems –II
Time: 1 hr & 30 min

Date: 08 / 12 / 2022
Max. Marks: 30

Que-1 Answer the following (Any 2)

[10]

1. Explain conflict serializable with example.
2. Explain transaction state with diagram.
3. Explain estimation of size of natural join operation and nested loop join.
4. Explain catalog information for cost estimation.

Que-2 Do as directed (Any 5)

[20]

1. Write formula for selection operation using binary search
2. Write following query in relational-algebra expression – select name from student, enrollment where student.GPA=3.5 and student.id=enrollment.id and enrollment.course=075;
3. Write the equivalent expression for above query.
4. Explain transaction properties.
5. Explain steps involved in query processing with diagram.
6. Draw precedence graph for following schedule

T1	T2	T3
Read(A) Read(B) Write(A)	Read(A) Write(A)	Read(A) Read(B) Write(B)

Department of Computer Science
Gujarat University
MSc Computer Science – III
Sessional – II

Subject: Statistical Foundation

Time: 1 hr 30 min

Instruction:

Date: 6 / 12 / 2022

Max. Marks: 30

1) All questions are compulsory.

1. The number of trucks arriving hourly at a warehouse facility has been found to follow the probability distribution in Table. Calculate (5)
- (a) the expected number of arrivals X per hour,
(b) the variance, and
(c) the standard deviation for the discrete random variable.

No of Trucks	0	1	2	3	4	5	6
P(X)	0.05	0.10	0.15	0.25	0.30	0.10	0.05

2. Because of economic conditions, a firm reports that 30 percent of its accounts receivable from other business firms are overdue. If an accountant takes a random sample of five such accounts, determine the probability of each of the following events by use of the formula for binomial probabilities: (5)
- (a) none of the accounts is overdue,
(b) exactly 20 percent of the sample accounts are overdue.
(c) exactly two accounts are overdue,
(d) more than 3 accounts are overdue,
3. The lifetime of an electrical component is known to follow a normal distribution with a mean $\mu = 2,000$ hr and a standard deviation $\sigma = 200$ hr. (a) Find the probability that a randomly selected component will last between 2,000 and 2,400 hr. (5)
- (b) Probability that a randomly selected component will last more than 2,200 hr.
(c) Determine the lifetime of the component such that only 10 percent of the components will fail before that time
4. A representative of a community group informs the prospective developer of a shopping center that the average income per household in the area is \$45,000. Suppose that for the type of area involved household income can be assumed to be approximately normally distributed, and that the standard deviation can be accepted as being equal to $\sigma = \$2,000$, based on an earlier study. For a random sample of $n = 15$ households, the mean household income is found to be \$44,000. Test the null hypothesis using the 0.05 level of significance. (5)
- Ho: $\mu = 45,000$ Ha: $\mu \neq 45,000$
5. What is the Central Limit Theorem? (1)
6. Table indicates student reaction to expansion of a college athletic program according to class standing where "lower division" indicates freshman or sophomore class standing and "upper division" indicates junior or senior class standing. Test the null hypothesis that class standing and reaction to expanding the athletic program are independent variables, using 0.05 level of significance. (5)

Reaction	Lower Division	Upper Division	Total
In Favor	20	19	39
Against	10	16	26
Total	30	35	65

7. a) What is ANOVA? (4)
b) What null hypothesis is tested by ANOVA
c) How is the degree of freedom calculated?
d) Name the distribution which is used for ANOVA.