CA-Sem-I (Choice Based) Object Oriented Programming

Nov-17

Q. P. Code: 27968

(3 Hours) **[Total Marks: 80]**

N.B.: (1) Question No. **1** is **Compulsory.**
(2) Attempt any **three** questions from the remaining **five** questions.
(3) Answers to **sub-questions** should be **grouped** and written **together.**

Q.1 (a) What is Dynamic Binding? Explain use of virtual functions to implement Dynamic Binding with an example. 10

(b) What are different file opening modes? Write a C++ Program to copy contents of one text file into another. 10

Q.2 (a) What are different types of Type conversions? Write a program to convert Feet to Inches using object to object conversion overloading. 10

(b) Create a class called Date that includes three pieces of information as instance variables—a month (typeint), a day (typeint) and a year (typeint). Your class should have a constructor that initializes the three instance variables and assumes that the values provided are correct. Provide a set and a get method for each instance variable. Provide a method displayDate that displays the month, day and year separated by forward slashes (/).Write a test application named DateTest that demonstrates classDate's capabilities. 10

Q.3 (a) What is Inheritance? Are Constructors Inherited? Explain what role default and parameterized constructors play in inheritance with a program. 10

(b) Explain the concept of Function Templates. Write a template function that returns the average of all the elements of an array. The arguments to the function should be the array name and the size of the array (type int).In main (), exercise the function with arrays of type int, long and double 10

Q.4 (a) What is Exception handling? Write a program to illustrate exception handling mechanism of C++. 10

(b) Explain the concept of 10

i) New and delete

ii) Pass By Value and Pass By Reference

Q.5 (a) What is Header Files? Explain the steps to create your own header file with an example. 10

(b) What are static Data Members and methods? Illustrate use of static data members and methods with a suitable program. 10

Q.6 Write short notes on any **four** :-- 20

(a) Bitwise operators in C++

(b) Encapsulation and Polymorphism

(c) Execution process of C++ Program

(d) Friend Functions.

(e) Pointer to Constant and Constant Pointer

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CA / Sem-I (Choice Based) / Software Eng. & Project mgmt. / NOV.17

Q.P. Code: 23193

Time: 3 hr **Total Marks: 80**

Please check whether you have got the right question paper.

Note:

1. **Question No. 1 is compulsory.**
2. **Attempt any three questions from remaining five questions.**

Q.1. a) Describe the project life cycle with suitable diagram. 10

b) Consider a project with the following functional units: 10

Number of user inputs = 60
Number of user outputs = 50
Number of user enquiries = 45
Number of user files = 07
Number of external interfaces = 05

Assume all complexity adjustment factors and weighting factors are average.
Compute the function points for the project.

Q.2. a) Differentiate between functional and non functional requirements in detail. 10

b) Consider a project to develop a full screen editor of size 512 KLOC. Determine: 10

1. Overall cost and schedule estimates, assume cost drivers as Required s/w reliability is high (1.15), product complexity is high (1.15), analyst capability is very high (0.86)
2. Phase wise efforts for: System design phase (0.18), detailed design phase (0.24), module code and test phase (0.24)
3. Phase wise development time for: Plan & requirement (0.40), detailed design phase (0.16), integration & test phase (0.32)

(ai=2.8, bi=1.20, ci=2.5, di=0.32)

Q.3. a) Explain the different types of contracts in detail. 10

b) What are the different steps involved in project risk management? Explain. 10

Q.4. a) What is project scope management? Explain benefits of scope control. 10

b) Explain the role and responsibilities of project manager. 10

Q.5. a) Explain Fish Bone diagram, Pareto diagram, Quality Control charts techniques for quality control. 10

b) Explain spiral model and its advantages. 10

Q.6. Short Note (any 4 out of 5) 20

a) Warnier Orr diagram
b) Extreme Programming
c) Stakeholder Management
d) Acquiring Project Team
e) Earned Value Analysis

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CA | Sem-I (Choice Base) | IT in Management | NOV-17

Q.P. Code :25513

[Time: Three Hours] [Marks:80]

Please check whether you have got the right question paper.

N.B:
1. Q. No. 1 is compulsory.
2. Attempt any 3 questions from Q. 2 to Q. 6.
3. Figures to right indicates full marks.
4. Additional information can be considered but justify the same.

1. Write Short notes on **(Any 4)** **20**

   a) Role of IT in Governance.
   b) Need to acquire technology.
   c) Value chain.
   d) E-governance in international business.
   e) Business in Digital Economy.
   f) Ethics and Information Technology.

2. a) What is acquisition and what are the sources for acquiring technology? **10**

   b) List down the types of International business strategies. **10**

3. a) Explain in detail the process of acquisition. **10**

   b) With a suitable diagram explain the framework of managing IT. **10**

4. a) What are the advantages of providing a subsidiary with a great deal of local autonomy? **10**

   b) How can a firm sustain a competitive advantage? **10**

5. a) Chrysler Corporation illustrates how technology has become a central component of a modem firm. Explain. **10**

   b) Give an example of how information systems can constrain the opportunities available to management **10**

6. a) What is meant by the statement that a key challenge for management is the integration of information technology and the business? **10**

   b) What is the role of E-commerce and M-commerce? Explain in detail. **10**

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CA / Sem- I (choice Based) / Statistics & Probability / NOV-2017

Q.P. Code : 26361

[Time: 3 Hours] **[Marks: 80]**

Please check whether you have got the right question paper.

N.B:
1. Questions No. 1 is compulsory.
2. Attempt any THREE out of remaining five questions.
3. Assume any necessary data but justify the same.
4. Figure to the right indicates marks.
5. Use of scientific calculator is allowed.

1. A) The mean and standard deviation of 200 items are found to be 60 and 20. At the time of calculations two items are wrongly taken as 3 and 67 instead of 13 and 17. Find the correct mean and standard deviation. 05

b) In a random arrangement of the letters of the word 'COMMERCE', find the probability that all the vowels come together. 05

c) Find the coefficient of variation for the following data: 05
12,17,20,16,13,11,18,12,18,13

d) Let X be random variable with the following probability distribution. Find $E(2x+1)^2$ 05

X	-3	6	9
P(X =x)	1/6	1/2	1/3

2. a) The joint density function of the two dimensional random variable (X, Y) is given by is given by 10

$$f_{xy}(x, y) = x^3 y^3 / 16 \quad , 0 \le x \le 2, 0 \le y \le 2$$
$$= 0, \quad \text{otherwise.}$$

Find the marginal densities of X and Y. Also find the cumulative distribution functions of X and Y.

b) Calculate Modal marks for data given below: 05

Marks	10-30	30-50	50-70	70-90	90-110	110-130
No. of Students	4	10	14	12	8	6

c) Find the Spearman's Rank correlation: 05

OS	52	34	47	65	43	34	54	65
DS	65	59	65	68	82	60	57	58

3. a) The regression line of y on x for a certain bivariate data is $5y + 3x = 52$ and the regression line of x on y is $2x + y = 30$. Find 10
1. the arithmetic mean of x and y
2. the coefficient of correlation between x and y
3. the most probable value of y when x = 10

b) We are given a box containing 5000 IC chips, of which 1000 are manufactured by company X and rest by company Y. 10% of the chips made by company X and 5% of the chips made by company Yare defective. If a randomly chosen chip is found to be defective, find the probability that it comes from company X. 05

c) If X is a random variable and a, b are constants, then prove that 05

$$V(aX + b) = a^2 V(x)$$

Turn Over

4. a) State the Baye's theorem. Three machines A, Band C produce respectively 40%, 10% and 50% of the items in a factory. The % of defective items produced by the machine is respectively 2%, 3% and 4%. An item from the factory is selected at random. **10**
   1. Find the probability that the item is defective.
   2. If the item is defective, find the probability that the item was produced by machine C

   b) Test consistency of the following data: **05**
   N = 60 (AB) = 25 (A) = 51 (B) = 32

   c) Two hundred randomly selected adults were asked whether TV shows as a whole are primarily entertaining, educational or a waste of time. The respondents were categorized by gender. Is there a relationship between gender and opinion in the population interest? **05**
   (Critical value of $X^2 = 5.99$)
   Their responses are given in the table below:

Actual frequencies	**Opinion**		
Gender	Entertaining	Educational	Waste of time
Male	52	28	30
Female	28	12	50

5. a) Calculate Bowley's coefficient of skewness for the following: **10**

Class	30-35	35-40	40-45	45-50	50-55	55-60
Frequency	5	10	30	35	15	5

   b) The means of two samples of sizes 50 and 100 respectively are 54.1 and 50.3 and the standard deviation are 8 and 7. Obtain the standard deviation of the sample of size 150 obtained by combing the two samples. **05**

   c) Prove with example that mutual independence does not imply pair wise independence. **05**

6. a) Calculate standard deviation for the following data: **05**

20-30	30-40	40-50	50-60	60-70	70-80	80-90
3	61	132	153	140	51	2

   b) Show that whether A and B are independent, positively associated or negatively associated. **05**
   (AB) = 128, (α B) = 84, (A β) = 24 and (α β) = 72

   c) Two dice are rolled. Let X denote the random variable which counts the total number of points on the upturned faces. Construct a table giving the non-zero values of the probability mass function. **05**

   d) The mean of marks in statistics of 100 students in a class was 72. The mean of marks of boys was 75, while their number was 70. Find the mean of girls in the class. **05**
