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**LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**  
**(An Autonomous and Accredited with 'A' Grade by NAAC)**

**MCA I semester Prefinal Examination, January - 2016**

**Subject: Probability & Statistics**  
**Sub. Code: MCA 13104**

**Exam Time: 3hrs**  
**Max. Marks: 80**

**Answer the following:**

1. a) Distinguish between primary & secondary data. Discuss various methods of collecting primary data . (8M)

- b) Construct a frequency table for following data (8M)

28,35,61,29,36,48,57,67,69,50,48,40,47,42,41,37,51,62,63,33,31,32,35,40,38,37,  
 60,51,54,56

**(Or)**

2. a) Distinguish between diagrams and graphs. (6M)

- b) Draw histogram and frequency polygon for the following data (10M)

Class	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	7	10	20	13	17	10	14	9

3. a) Define Binomial distribution and derive its mean and variance. (8M)

- b) State and prove multiplication theorem on probability. (8M)

**(Or)**

- 4.a) Define poission distribution state and prove additive property of poission distribution. (10M)

- b) A coin is tossed 10 times. What is the probability of obtaining 6 or more heads. (6M)

- 5.a) Define  $\beta$  – distribution of first kind. Obtain mean, variance and third moment of  $\beta$  Distribution of first kind. (8M)

- b) Obtain Mgf of gamma distribution with one parameter. Also obtain mean and variance of gamma distribution from mgf. (8M)

**(Or)**

- 6.a) Define normal distribution . State the properties of normal distribution. (8M)

- b) State and prove additional property of normal distribution. (8M)

- 7.a) The first four central moments of a distribution are 0, 2.5, 0.7 and 18.75  
 Compute coefficient of skewness and kurtosis (6M)

- b) Write short notes on Kurtosis and Skewness. (10M)

**(Or)**

- 8.a) Define central and non central moments . Explain sheppard's correction for Moments. (8M)

- b) Calculate Karl pearson's coefficient of skewness for following date (8M)

x	10	11	12	13	14	15
f	2	4	10	8	5	1

(P.T.O)

9.a) Define regression. Write the equations for lines of regression. Calculate regression lines for following data. (10M)

x:	1	2	3	4	5	6	7
y:	7	8	9	10	11	13	12

b) Explain chisquare test for significance of attributes in an rxs contingency table. (6M)

(Or)

(8M)

10.a) Explain t-test for single mean and paired t-test.

b) The heights of males of a given locality are found to be 70, 67, 62, 68, 61, 68, 70, 64, 64, 66 inches. It is reasonable to believe that average height is equal to 64 inches at 5% level of significance assuming that  $t_{tab} = 1.83$  for 9. d.o.f (8M)

# **LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**

**(An Autonomous and Re-Accredited with 'A' Grade by NAAC)**

**M.C.A I Semester Examination, Jan/Feb - 2016**

**Subject : Elements of Information Technology  
Sub. Code : MCA 13104**

**Exam Time : 3 hrs  
Max. Marks : 100**

**Answer the following:**

## **UNIT-I**

1. (a) Describe the different categories of hardware. (12M)  
(b) What are the two types of software? Describe briefly. (08M)  
**(Or)**
2. (a) What are the programming languages used today. (10M)  
(b) Explain briefly Connectivity and Interactivity. (10M)

## **UNIT-II**

3. What are the names and functions of the parts of the system unit. (20M)  
**(Or)**
4. (a) Explain about input hardware ie. Keyboard, pointing devices and source data – entry devices? (8M)  
(b) Explain the working and characteristics of diskettes. (12M)

## **UNIT-III**

5. (a) What is world wide web? What is its use? How do you find, information on this web? (12M)  
(b) Explain video conferencing. (08M)  
**(Or)**
6. (a) Explain about different types of communication networks. (08M)  
(b) What are the factors Affecting communications among Devices. (12M)

## **UNIT-IV**

7. (a) Explain about file management in detail. (12M)  
(b) Explain the data storage hierarchy and the concept of the key Field. (08M)  
**(Or)**
8. (a) Explain linking images and formatting text. (10M)  
(b) Explain about basic forms and complex forms linking. (10M)

## **UNIT-V**

9. (a) What is management information system(MIS) ? How it is useful for Managers. (20M)  
**(Or)**
10. How are Computer and Communications safe guarded. (20M)

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**(An Autonomous and Accredited with 'A' Grade by NAAC)**

**MCA I semester Prefinal Examination, January - 2016**

**Subject: Elements of Information Technology**

**Exam Time: 3hrs**

**Sub. Code: MCA 13104**

**Max. Marks: 80**

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**Answer the following:**

## **UNIT-I**

1. (a) What are the differences between System Software and Application Software. (06M)  
(b) Explain the functions of Operating Systems. (10M)
- (Or)
2. (a) Explain the five generations of programming languages. (10M)  
(b) Explain connectivity, Interactivity, Multimedia. (06M)

## **UNIT-II**

3. (a) What are the features of floppy disks, hard disks, optical disks. (10M)  
(b) How is data represented in a computer. (06M)
- (Or)
4. Explain different Input/ Output devices. (16M)

## **UNIT-III**

5. (a) What are the factors that affect Data Transmission. (10M)  
(b) Explain Video/ Voice Communication. (06M)
- (Or)
6. (a) What are the benefits of networks and what are their types , components and valuations. (08M)  
(b) Explain (i) World Wide Web (08M)  
                 (ii) Video Conferencing

## **UNIT-IV**

7. (a) Explain about basic tags of HTML. (08M)  
(b) Explain about lists using suitable examples. (08M)
- (Or)
8. (a) Explain the Database Organization models in detail. (10M)  
(b) List out the features of DBMS. (06M)

## **UNIT-V**

9. (a) Explain the five step procedure in Software Development. (10M)  
(b)What the six computer Based Information Systems. (06M)
- (Or)
10. (a) Explain how Computer and Communication are safeguarded. (10M)  
(b) List out six phases of SDLC (06M)

# **LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**

**(An Autonomous and Accredited with 'A' Grade by NAAC)**

**MCA I semester Prefinal Examination, January - 2016**

**Subject: Comp Prog & Problem Solving C & C++**

**Exam Time: 3hrs**

**Sub. Code: MCA 13103**

**Max. Marks: 80**

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**Answer the following:**

**(5\*16=80M)**

## **UNIT-I**

1. a) Explain type conversion with the help of examples.  
b) Write about system development.  
c) Write a C program to calculate factorial of a given number.

**(6+5+5)**

**(Or)**

2. a) Differentiate while and do- while loops.  
b) Write a C program to check whether given number is palindrome or not.  
c) Explain if – else –if with the help of syntax and example.

**(6+5+5)**

## **UNIT-II**

3. a) Differentiate call by value and call by reference with examples.  
b) What is recursion. Write a program to calculate  $x^n$  using recursion.

**(8+8)**

**(OR)**

- 4.a) Write a program for bubble sort.  
b) Explain string manipulation functions with examples.

**(8+8)**

## **UNIT-III**

- 5.a) Differentiate a structure and union with examples.  
b) Write a C program to demonstrate nested structure.

**(8+8)**

**(Or)**

- 6.a) Write a C program to read and write data into a file.  
b) Explain different types of preprocess directives.

**(8+8)**

## **UNIT-IV**

- 7.a) Write short notes on the following:  
(i) Inline functions    (ii) Friend functions    (iii) Reference parameters  
b) What is function overloading? Write a C++ program to calculate area of different geometrical objects using function overloading.

**(6+10)**

**(Or)**

- 8.a) What are function templates? Write a C++ program to swap two date items using function templates.

**(Or)**

- b) Explain the following:  
(i) Constant parameters    (ii) Default parameters  
(iii) Precedence and Associativity

**(8+8)**

## **UNIT-V**

- 9) Explain operator overloading in detail.

**(16)**

**(Or)**

- 10) Explain Inheritance in detail.

**(16)**

10. a) Show that the sum of degree of all the vertices of a non-directed graph is twice the no. of edges i.e.

(4M)

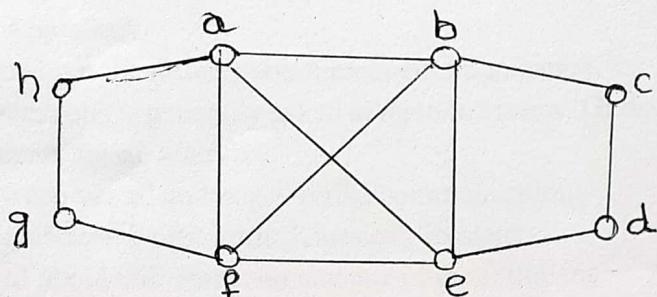
$$\sum_{i=1}^n d(g_i) = 2 |E| .$$

- b) Check whether it is possible to draw a graph with the following degree sequence.  
(3, 3, 3, 3, )

(4M)

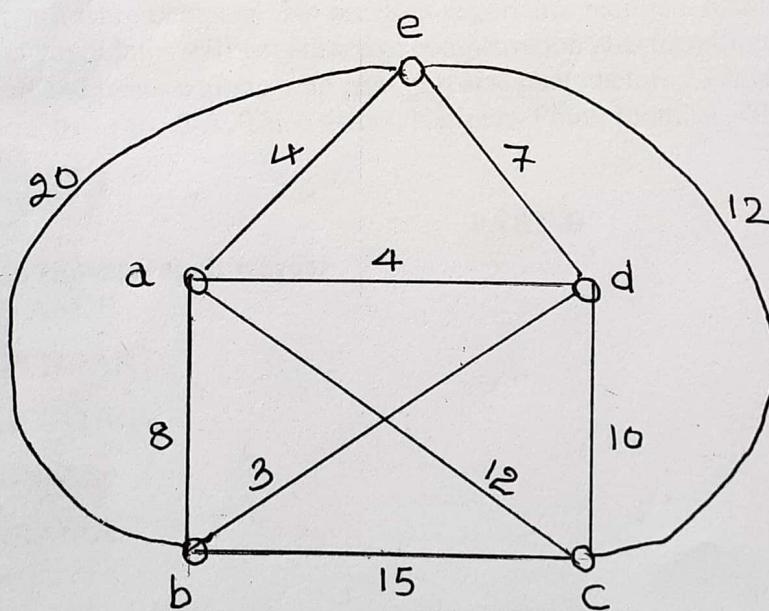
- c) Define Euler path. Find an Euler circuit.

(3M)



- d) Find the minimal spanning tree of the following connected weighted graph with Kruskal's algorithm.

(5M)



# **LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**

**(An Autonomous and Accredited with 'A' Grade by NAAC)**

**MCA I semester Prefinal Examination, January - 2016**

**Subject: English**

**Sub. Code: MCA 13106**

**Exam Time: 3hrs**

**Max. Marks: 80**

## **PART -A**

**I Write any Six of the following**

**(6\*10=60M)**

1. What are objectives of performance Appraisal ? Write the advantages of having a performance Appraisal?
2. Discuss in detail about the different barriers of communication.
3. What kind of Questions is generally asked at a job interview. Give examples.  
How do you prepare for an interview?
4. Distinguish between verbal and non – verbal communication.
5. What do you understand by the term 'Kinesics'. Explain
6. Write an essay of about 300 words on any one of the following:
  - (a) Swatch Bharat
  - (b) Indian cinema today is neither a source of healthy entertainment nor an agent of social change
7. Prepare a report on "Installation of air conditioners and computers" in your company. Invent necessary details.
8. Wanted young, dynamic and result oriented marketing personal (Boys & Girls) for a reputed computer soft ware company. No previous experience required. Must be a MCA student. Successful candidates will get attractive compensation plus travelling allowance. Send application and resume along with pass port size photo before 23 January, 2016 to Scill Consultants pvt. Ltd, B/A, Tall Towers, Narimaw Point, Mumbai -400021

## **PART-B**

**(20M)**

**(5M)**

**1. Correct the miss spelt words:-**

- a) ACCEPTANCE
- b) INDEPENDANT
- c) DEPRICIATION
- d) ESENTIALS
- e) TOLARANCE

**2. Fill in the blanks with appropriate prepositions: -**

**(5M)**

- a) The cargo consists \_\_\_\_\_ six big packets of books.
- b) This cheque is valid \_\_\_\_\_ three months from the date of issue.
- c) I have yet to submit my report \_\_\_\_\_ the head office.
- d) I would suggest with drawing \_\_\_\_\_ this deal.
- e) Prior \_\_\_\_\_ joining us, he was a marketing manager with Daewoo cielo.

**(P.T.O)**

**(10M)**

**3. Correction of sentences:**

- a) The old furnitures was disposed of.
- b) I have less hope left of my success.
- c) Honesty of the peon was greatly appreciated.
- d) The rich should help poor.
- e) The meeting often prove to be a wastage of time.
- f) Our product is widely available than most of the competing brands.
- g) The sub -committee comprises of three members.
- h) Any of the two hotels you mentioned should suit us.
- i) Could you give me an information about the time of meeting?
- j) There has been a mistake definitely in this document.

# **LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**

**(An Autonomous and Re-Accredited with 'A' Grade by NAAC)**

**M.C.A I Semester Examination, Jan/Feb - 2016**

**Subject : Comp Prog & Problem Solving C & C++**  
**Sub. Code : MCA 10103**

**Exam Time : 3 hrs**  
**Max. Marks : 100**

**Answer the following:**

## **UNIT-I**

1. (a) What are the basic types in 'C'? Explain with an example. (6M)
- (b) Write a 'C' program to find whether the given number is Prime or not. (6M)
- (c) Write short note on Computer languages & system development. (8M)

**(Or)**

2. (a) Explain various looping statements in 'C' language. (9M)
- (b) Write a 'C' program to check whether the given number is armstrong or not. (6M)
- (c) Explain about different input and output statements in C. (5M)

## **UNIT-II**

3. (a) Write a C-program to find multiplication of two matrices using pointer notation. (12M)
- (b) Describe about "pointers to Pointers" (8M)

**(Or)**

4. (a) Write a C- program to sort elements using Insertion sort. (10M)
- (b) Explain how to pass array to functions. Give an example. (10M)

## **UNIT-III**

5. (a) Write a C program to accept student data using structure and write into the file. (8M)
- (b) Explain (3\*4=12M)  
        (i) Array of structures  
        (ii) Nested structures  
        (iii) Structures using Arrays

**(Or)**

6. (a) Write a C-program to copy the contents of one file to another file. (10M)
- (b) What are standard library functions in files? Explain converting file type. (10M)

## **UNIT-IV**

7. (a) Explain operators in C++ (8M)
- (b) Write a program for addition of two numbers using function template. (5M)
- (c) What is function overloading? Explain with example. (7M)

**(P.T.O)**

**(Or)**

**(8M)**

8. (a) Describe Parameter Passing mechanism in C++. (6M)  
(b) Write a C++ Program to find sum of digits of a given integer. (6M)  
(c) Write short note on Dynamic Polymorphism with example.

**UNIT-V**

**(12M)**

9. (a) Define a class Matrix . Demonstrate operator overloading to add two matrices by  
overloading ‘+’ operator. (8M)  
(b) Explain with example about exception handling.

**(Or)**

**(12M)**

10. (a) What is inheritance ? Explain the difference types of inheritance. (8M)  
(b) What is abstract class? Give example.

**LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**  
**(An Autonomous and Reaccredited with 'A' Grade by NAAC)**  
**MCA (I semester) Prefinal Examination, January- 2016**

**Subject : Discrete Mathematics**  
**Sub Code : MCA 13101**

**Exam Time : 3 hrs**  
**Max. Marks : 80**

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**Answer any one from each unit:**

**UNIT-I**

1. a) Define tautology? Show that  $((p \vee q) \wedge \sim(\sim p \wedge (\sim q \vee \sim r))) \vee (\sim p \wedge \sim q) \vee (\sim p \wedge \sim r)$  is a tautology? (06M)
- b) Obtain principal disjunctive normal form of  $(p \wedge q) \vee (\sim p \wedge r) \vee (q \wedge r)$ ? (06M)
- c) There are 200 faculty members that speak French, 50 that speak Russian, 100 speak Spanish, 20 that speak French and Russian, 60 that speak French and Spanish, 35 speak Russian and Spanish, while only 10 that speak French, Russian and Spanish. Determine how many speak neither French, Russian or Spanish. (4M)

**(Or)**

2. a) Obtain the principal conjunction normal form of  $(\sim p \rightarrow r) \wedge (q \leftrightarrow p)$  (6M)
- b) Show that the following are equivalent. (6M)  

$$(p \rightarrow q) \wedge (r \rightarrow q) \Leftrightarrow (q \rightarrow p).$$
- c) Define tautological Implication. Check whether the following is tautologically implied or not  $(p \rightarrow (q \rightarrow r)) \Rightarrow (p \rightarrow q) \rightarrow (p \rightarrow r)$ . (4M)

**UNIT-II**

- 3.a) Let  $X = \{1, 2, 3, 4, 5, 6, 7\}$  and  $R = \{(x,y) / x-y \text{ is divisible by } 3\}$ . Show that  $R$  is an equivalence relation. Draw the graph of  $R$  and its matrix. (6M)
- b) If  $f(x) = x+2$ ,  $g(x) = x-2$  and  $h(x) = 3x$  find (6M)  
(i)  $gof$       (ii)  $fog$       (iii)  $(foh)og = fo(hog)$
- c) Define lattice? Prove that for lattice  $(L, \leq)$ , for  $a, b \in L$  (4M)  
Prove that  $a \oplus (b * c) \leq (a \oplus b) * (a \oplus c)$   
(Or)

4. a) Let  $x = \{2, 3, 6, 12, 24, 36\}$  and the relation ' $\leq$ ' be such that  $x < y$  if "x divides y." Draw its Hasse diagrams. If  $A = \{6, 12\}$  is a subset of  $x$  than find the upper bounds, lower bounds, least upper bound (LUB) and greatest lower bound (GLB). (6M)
- b) Show that  

$$(a * (b' \oplus c') * (b' \oplus (a * c'))' = a * b * c'$$
- c) Prove that Every Chain is a Lattice. (4M)

(P.T.O)

### UNIT-III

5. a) Define group , subgroup and group Isomorphisms. Let  $(G^*)$  be a group and  
 $a, b, \in G$ , then  $(a^{-1})^{-1} = a$ . (8M)  
 b) State and prove Lagranges theorem. (8M)

(Or)

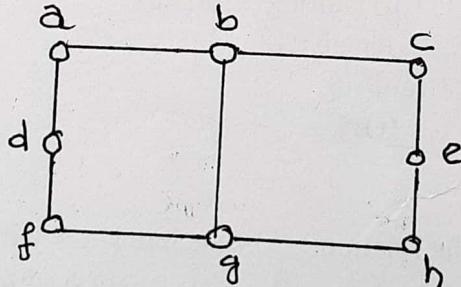
6. a) Given  $A = \{1, 2, 3, 4, 5, 6\}$ . Check whether the following is an  
 Abelian group by constructing a table with multiplication modulo 7. (8M)  
 b) Show that in a group  $(G, *)$ , if for any  $a, b \in G$   $(a * b)^2 = a^2 * b^2$  then  
 $(G, *)$  must be abelian. (8M)

### UNIT-IV

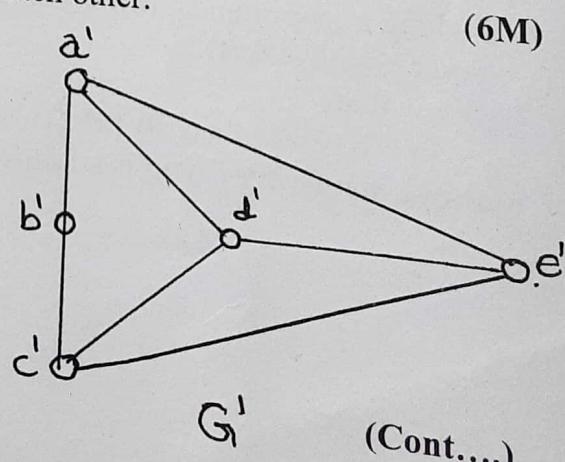
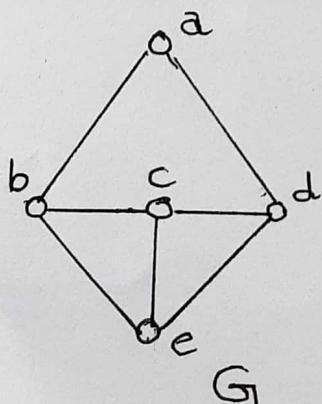
7. a) Solve the recurrence relation.  
 $a_n - 5a_{n-1} + 6a_{n-2} = 0$ , with initial conditions  $a_0 = 2$  and  $a_1 = 5$ . (8M)  
 b) Solve the recurrence relation.  
 $a_n + 4a_{n-1} + 4a_{n-2} = 8$  for  $n \geq 2$  with  $a_0 = 1$ ,  $a_1 = 2$ . (8M)  
(Or)  
 8. a) Solve the recurrence relation.  
 $a_{n+2} + 3a_{n+1} + 2a_n = 3^n$  for  $n \geq 0$  given  $a_0 = 0$ ,  $a_1 = 1$ . (8M)  
 b) Find the unique solution for the recurrence relation.  
 $3a_{n+1} = 4a_n$ ,  $n \geq 0$   $a_1 = 5$ . (8M)

### UNIT-V

9. a) State and prove the Euler's formula.  $|V| - |E| + |R| = 2$ . (6M)  
 b) Define Hamiltonian path, Hamiltonian cycle and Hamiltonian graph.  
 Check whether the graph is Hamiltonian and find H-path, H-cycle. (4M)



- c) Check whether two graphs are isomorphic to each other.



(Cont....)

**LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**  
**(An Autonomous and Re-Accredited with 'A' Grade by NAAC)**  
**MCA (I semester) Examination, February 2016**

**Subject : Modern Economic Analysis**  
**Sub. Code : MCA13105**

**Exam Time : 3 hrs**  
**Max. Marks : 100**

**Answer the following questions**

**5 x 20M = 100M**

**UNIT-I**

1. Define Managerial Economics. How does it differ from traditional Economics? **20M**
2. Briefly explain the following fundamental concepts of Managerial Economics with suitable examples. **20M**
- i) Incremental cost
  - ii) Time perspective
  - iii) Opportunity cost
  - iv) Marginal cost

**UNIT-II**

3. Explain the law of demand and also the factors affecting demand of a product. **20M**
4. Explain the methods of measuring price elasticity of demand. **20M**

**UNIT-III**

5. Explain the behavior of total cost, total fixed cost and total variable cost in the short and long run. **20M**
6. What is perfect competition? How is the price and output of a firm determined under conditions of perfect competition in the short run. **20M**

**UNIT-IV**

7. Define National income and explain various methods of estimation of National Income. Explain about the difficulties that arise in estimation of NI. **20M**
8. Evaluate the objectives and achievements of five year plans in India. **20M**

**UNIT-V**

9. Briefly explain various institutional sources for Industrial finance India. **20M**
10. Explain the role of Reserve Bank of India in the economic development of India. **20M**

**(OR)**

# LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

(An Autonomous and Re-Accredited with 'A' Grade by NAAC)

M.C.A I Semester Supply Examination, July - 2016

Subject : Probability & Statistics  
Sub. Code : MCA 10102

Exam Time : 3 hrs  
Max. Marks : 100

Answer the following questions:

(5\*20=100M)

## UNIT-I

1. a) Discuss briefly the main steps involved in a sample survey? (10M)  
b) Give the rules for construction of statistical table? (10M)

(Or)

2. a) Draw a suitable diagram to represent the following data relating to the production cost of Manufacture. (10M)

Cost of Material = Rs 38,400  
Cost of Labour = Rs 30,720  
Direct Expenses = Rs 11,520  
Overhead Expenses = Rs 15,360

- b) What is Histogram? How could you represent a grouped frequency distribution by means of a histogram when the class widths are (10M)

(i) Equal and (ii) not equal

## UNIT-II

3. a) State and prove the multiplication theorem of probability for two events .Also give its generalisation? (10M)  
b) Urn -A contains 5 red balls and 5 black balls, Urn B contains 4 red and 8 black balls (10M) and Urn C contains 3 red and 6 black balls . A ball is drawn from A, colour unknown and put into B. Then a ball is drawn from B, colour unknown, and put into C. What is the probability that a ball now drawn from C will be red?

(Or)

4. a) The probability that an evening college student will graduate is 0.4.Determine that out of 5 students (a) None (b) one and (c) atleast one will graduate. (10M)  
b) A manufacturer of pins knows that 5% of his product is defective . If he sells pins in boxes of 100 and guarantees that not more than 4 pins will be defective , what is the approximate probability that a box will fail to meet the guaranteed quality?  
 $(e^{-5} = 0.0067)$

## UNIT-III

5. a) Show that for the rectangular distribution  $f(x) = 1/2a$  ,  $-a < x < a$  .g.f about origin (10M)  
 $1/at \sinh at$ . Also show that moments of even order are given by

$$M_{2n} = \frac{a^{2n}}{2n+1}$$

(P.T.O)

- b) The mean marks of 1000 students is 34.4 with a S.D of 16.5 . How many students can be expected to obtain the marks between 30 and 60. Assuming the normality of district determine also the limits of 70% of the students. (10M)

(Or)

6. a) If  $x$  is a beta random variable defined on  $(0,1)$ , obtain the distribution of  $1-x$ .  
 b) If  $F$  is the distribution function of a continues random variable  $x$ , show that  $F$  is uniformly distributed on  $(0,1)$  (10M)  
 (10M)

#### UNIT-IV

(10M)

7. a) Calculate Skewness , Kurtosis and comment on the result.  
 $d_i = \frac{(x-A)}{C}$ ;  $N=300$ ;  $C=10$ ;  $\sum f d_i = 16$ ;  $\sum f d_i^2 = 342$   
 $\sum f d_i^3 = 52$ ;  $\sum f d_i^4 = 1062$ .

- b) What is a frequency distribution? What is its importance in statistics?

(Or)

- 8.a) The first 3 moments of a distribution about 2 are 1,16, and 40. Find out the mean variance and  $\mu_3$

- b) Calculate Karl pearson's coefficient of Skewness from the following table:

Marks	0-10	10-20	20-30	30-40	40-50
Frequency	8	11	26	9	6

#### UNIT-V

(10M)

9. a) Define correlation coefficient and discuss its properties.

(10M)

- b) The following are the marks that have been obtained by a class of students in statistics (out of 100).

Paper-I	45	55	56	58	60	65	68	70	75	80	85
Paper-II	56	50	48	60	62	64	65	70	74	82	90

Obtain the equations of the lines of regression?

(Or)

- 10.a) Two types of drugs were used on 5 and 7 patients for reducing their weight:

(10M)

Drug A was imported and drug B was indigenous . The decrease in the weight after using the drug for 6 months was as follows.

Drug A:	10	12	13	11	14	-	-
Drug B:	8	9	12	14	15	10	9

Is there a significant difference in the efficiency of the two drugs. If not, which drug should you buy? Table Value for 10 d.f at 5% LOS  $t=2.23$

- b) Explain (i) Simple and composite hypothesis

(ii) Null Hypothesis

(iii) Alternate Hypothesis

(iv) Type I error

(v) Type II error

(10M)

# **LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**

**(An Autonomous and Re-Accredited with 'A' Grade by NAAC)**

**M.C.A I Semester Supply Examination, July - 2016**

**Subject : Elements of Information Technology**

**Exam Time : 3 hrs**

**Sub. Code : MCA 13104**

**Max. Marks : 100**

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**Answer the following questions. Each question carries equal marks: (5\*20=100M)**

## **UNIT-I**

1. a) What are the developments taken place in Communication technology ? Explain. (10)
  - b) Explain five generations of Programming Languages. (10)
- (OR)
2. a) Compare windows 98/95 , DOS, Windows NT Operating Systems. (10)
  - b) Explain hardware and software components. (10)

## **UNIT-II**

3. a) Explain different types of secondary storage devices. (10)
  - b) Write short notes on softcopy output and hardcopy output. (10)
- (OR)
4. a) Differentiate between the following (8)
    - (i) Static RAM-Dynamic RAM
    - (ii) EPROM - EEPROM
  - b) Explain four types of printers. (12)

## **UNIT-III**

5. a) What are the factors affecting communication among devices ? Explain. (10)
  - b) What is local area network. Give different types, components and topologies of LANs. (10)
- (OR)
6. a) Explain the resource utility in communication channels. (12)
  - b) What is the difference between internet and intranet. (8)

## **UNIT-IV**

7. a) Explain the functions of file manager, file descriptor and file access permissions. (12)
  - b) Write and explain the features of DBMS. (8)
- (OR)
8. a) Explain text formatting tags of HTML. (10)
  - b) What are the merits and demerits of spread sheet and word processing (10)

## **UNIT-V**

9. Explain the phases of system analysis and design. (20)
- (OR)
10. a) What are the security threats to computers and communication systems? Explain each of them in detail. (12)
  - b) Explain the management levels and organisation. (8)

# **LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**

**(An Autonomous and Reaccredited with 'A' Grade by NAAC)**

**MCA I semester Supply Examinations, Nov/ Dec - 2016**

**Subject : Computer Prog Prob Solving C & C++  
Code : MCA10103**

**Exam Time : 3hrs  
Max.Marks : 100**

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**Answer all questions:**

**(5\*20=100M)**

## **UNIT-I**

1. a) Draw the block diagram of a Computer and explain each component of it. (10M)  
b) Explain different data types that are available in C. (10M)
- (Or)
2. a) Explain different control and conditional statements in C with examples. (12M)  
b) Explain different operators in C. (8M)

## **UNIT-II**

3. a) Write a C program to multiply two matrices of order MXN and NXP. (12M)  
b) Write a C Program for Bubble sort. (8M)
- (Or)
4. a) Explain different string manipulation functions. (10M)  
b) Explain Memory Allocation functions. (10M)

## **UNIT-III**

5. a) Differentiate between structures and unions. (10M)  
b) Explain Preprocessor directives. (10M)
- (Or)
6. a) Explain Standard library I/O functions. (10M)  
b) Write a C program to copy the contents of one file to another file. (10M)

## **UNIT-IV**

7. a) Explain the features of C++. (10M)  
b) What is function overloading? Explain with example. (10M)
- (Or)
8. a) Explain Inline functions. (10M)  
b) Explain operators in C++ (10M)

## **UNIT-V**

9. a) Explain different types of Inheritances. (10M)  
b) Explain operator overloading with example. (10M)
- (Or)
10. a) What is abstract class? Give example. (10M)  
b) Explain virtual functions. (10M)

# LOYOLA ACADEMYDEGREE & PGCOLLEGE, OLD ALWAL

(An Autonomous and Accredited with 'A' Grade by NAAC)

MCA I semester Supplementary Examination, December 2016

Subject : Probability & Statistics  
Sub. Code : MCA 12102

Exam Time : 3 hrs  
Max. Marks : 100

Answer the following questions

5 x 20M = 100M

## UNIT-I

1. Bring out the difference between diagrams and graphs. Explain about various types of diagrams.
- (OR)
2. Write in detail about framing the questionnaire with examples

## UNIT-II

3. a) In a factory the total output is 10,000 units per day. Three machines A1, A2 and A3 produce this total daily output. Machine A1 accounts for 4000 items a day, Machine A2 accounts for 4000 items a day, and Machine A3 accounts for 2000 items a day. Historical data reveals that 1%, 3% and 4% of the output from these machines were defective. On a particular day, an item is selected at random and found to be defective. What was the chance that this item was produced by Machine A1, A2 and A3?  
b) Write about additional theorem

(OR)

4. a) In an office, there are 150 employees. The pattern of their absence for duty in a particular month is recorded in the following table . Fit a Binomial Distribution to the data.

No. of days absent (X)	0	1	2	3	4
No. of absentees f(x)	28	62	46	10	4

- b) State Multiplication theorem.

## UNIT-III

5. Define Normal distribution and list down the characteristics of normal distribution.

(OR)

6. a) If the salary of workers in a factory is assumed to follow a Normal distribution with a mean of Rs. 500 and a Standard Deviation of Rs.100, find Number of workers whose salary vary between Rs. 400 and Rs. 650, given the number of workers in the factory as 15,000 ?  
b) Define beta distribution of first kind and find its mean and variance.

## UNIT-IV

7. a) Define mean and variance of a random variable.  
b) Calculate Karl Pearson's coefficient of skewness from the following data .and comment upon the result.

X	1	2	3	4	5	6	7
F	10	18	30	25	12	3	3

(OR)

8. a) Write short notes on (i) moments (ii) Kurtosis  
b) Calculate the first four moments about the mean for the following data and comment on the nature of distribution.

X:	1	2	3	4	5	6	7	8	9
F:	1	6	13	25	30	22	9	5	2

## UNIT-V

9. a) Define correlation and list down its characteristics.  
b) Define Regression and list down its characteristics.

(OR)

10. a) List down the prerequisites for applying chi square test  
b) In a set of random numbers, the digits 0 - 9 were found to have the following frequencies. Test whether the digits are equally distributed. (Table value of chi square is 16.919 at 9 d.f and LOS=0.05)

Digit	0	1	2	3	4	5	6	7	8	9
Frequencies	43	32	38	27	38	52	36	31	39	24