Hall Ticket Number :										

R-15 / R14

Code: 5P2A14/4P2A14

M.C.A. I Semester Supplementary Examinations June 2016

Accounting and Financial Management

Max. Marks: 60 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 12 = 60Marks)

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UNIT–I

1. a) Define and bring out the nature of accounting

   b) State the principles of accounting.

OR

2. From the following Trial Balance of Ravi, prepare final accounts for the year ended 31-3-2014:

Debit balance	Rs.	Credit Balance	Rs.
Drawings	4,500	Capital	24,000
Purchases	20,000	Sales	30,500
Sales returns	1,500	Discounts	1,900
Opening stock	8,000	Creditors	7,000
Salaries	4,200	Bills payable	2,500
Wages	1,200	Bank over draft	3,000
Rent	350		
Bad debts	400		
Discounts	700		
Debtors	14,000		
Cash in hand	6,200		
Insurance	400		
Trade expenses	300		
Printing	150		
Furniture	2,000		
Machinery	5,000		
	68,900		**68,900**

Adjustments:

a) Closing Stock Rs.7, 000
b) Prepaid Insurance Rs.60
c) Outstanding salary Rs.500, wages Rs.200
d) Provide additional bad debts of Rs.1000 on sundry debtors
e) Depreciate machinery at 5% and furniture at 10%

UNIT–II

3. Define and explain the managerial uses of
   a) Contribution
   b) P/V Ratio
   c) Break even analysis
   d) Margin of Safety

OR

4. Following information is available for a company for January and February 2015.

Particulars	January 2015	February
Sales (Rs.)	38 Lakhs	65 Lakhs
Profits (Rs.)	---	3.00 Lakhs
Loss (Rs.)	2.4 Lakhs	---

Calculate: (**a**) P/V Ratio (**b**) Break even sales in rupees (**c**) Sales required to earn a profit of Rs.5 Lakhs (**d**) Profit or loss at Rs.46 Lakhs Sales

UNIT–III

5. a) Discuss the importance of ratio analysis?
   b) Write a note on profitability ratio.

OR

6. From the following particulars extracted from the financial statement of ABC & Co., compute (**a**) Current Ratio (**b**) Liquid Ratio (**c**) Inventory Turnover Ratio (**d**) Debtors Turnover Ratio and (**e**) Creditors turnover Ratio.

	Rs.		**Rs.**
Opening stock	47,000	Sundry Debtors	42,000
Closing stock	53,000	Cash	10,000
Net Sales	2,52,000	Bank	8,000
Provision for bad debts	2,000	Bills Receivable	15,000
Sundry Creditors	32,000	Provision for Taxation	15,000
Loose tools	4,000	Bills payable	29,000
Purchases	1,80,000	Marketable securities	8,000
Plant and Machinery	2,00,000	Land and Buildings	3,00,000

Opening Debtor and Creditors are Rs 55,000 and Rs.38, 000 respectively.

UNIT–IV

7. a) Define and explain the nature of financial management.
   b) Discuss the role of financial manager of a firm.

OR

8. a) Example the concept of time value of money?
   b) How do you compute present value of future money

UNIT–V

9. a) What do you understand by capital budgeting?
   b) Discuss the process of capital budgeting.

OR

10. Equipment X has a cost of Rs.75, 000 and net cash flows of Rs, 20,000 per year for six years. A substitute equipment Y would cost Rs. 50,000 and generate net cash flows of Rs.14, 000 per year for six years. The required rate of return of both equipment is 12%. Calculate the NPV and IRR for each equipment. Which equipment should be accepted?

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Hall Ticket Number :										

R-15 / R-14

Code: 5P2B12 / 4P2B12

M.C.A. I Semester Supplementary Examinations June 2016

Computer Programming

Max. Marks: 60 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 12 = 60 Marks)

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UNIT–I

1. a) What is the need for a Flowchart? Explain the connector, process and the loop symbols in a Flowchart 6M

   b) List out and explain the most prominent programming language paradigms 6M

OR

2. a) What are the various types of operators in C? Explain difference in using increment operator as prefix and increment operator as suffix with separate examples 8M

   b) Explain the Switch statement in C with an example 4M

UNIT–II

3. a) Write a C program to input a two dimensional array from the terminal and print the sum of elements in each row 4M

   b) Write a C program to illustrate string handling functions 8M

OR

4. a) Explain System defined and User defined functions in C with examples 6M

   b) Explain recursive functions in C with an example 6M

UNIT–III

5. a) What are the various access control specifiers in C++? Give their syntax 6M

   b) Explain how a member function can be defined outside the class body with an example 6M

OR

6. a) What are the access rules for static data members? 6M

   b) What are Static member functions? What are the various rules for using Static member functions? 6M

UNIT–IV

7. Explain in detail the need for Virtual function with suitable examples 12M

OR

8. What are the various rules to be borne in mind while defining members as private, public or protected during inheritance? Explain how Private inheritance is possible with an example 12M

UNIT–V

9. a) Explain various calls for seekg(),seekp() and tellp() functions and the actions performed for file handling in C++ 6M

   b) Explain overloading the insertion Stream operator << with an example 6M

OR

10. a) Explain the exception handling constructs in C++ 6M

    b) Write a CPP program to handle Divide by Zero exception 6M

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Hall Ticket Number :										

R-15 / R14

Code: 5P2C13/4P2C13

M.C.A. I Semester Supplementary Examinations June 2016

Probability & Statistics

Max. Marks: 60 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 12 = 60Marks)

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UNIT–I

1. a) If A and B are two events , then prove that

$$P(A\cup B)=P(A)+P(B)-P(A\cap B).$$ 6M

b) If the Probability density of a random variable is given by

$$f(x)=\begin{cases} x & for \quad 0<x<1 \\ 2-x & for \quad 1\le x<2 \\ 0 & elsewhere \end{cases}$$

Find the Probabilities that a random variable having this Probability density will take on a value (**i**) between 0.2 and 0.8; (**ii**) between 0.6 and 1.2. 6M

OR

2. a) State and Prove Baye's Theorem. 6M

b) A discrete random variable X has the following probability distribution

Value of X	1	2	3	4	5	6	7	8
$P(X=x)$	$2k$	$4k$	$6k$	$8k$	$10k$	$12k$	$14k$	$4k$

(**i**) Find the value of 'k'. (**ii**) Find $P(X<3)\,and\,P(X\ge 5)$

(**iii**) Find the distribution function of X. 6M

UNIT–II

3. a) Define the uniform distribution and find its mean and variance. 6M

b) Find the probabilities that a random variable having the standard normal distribution will take on a value

(i) between 0.87 and 1.28;
(ii) between $-$ 0.87 and 0.62;
(iii) greater than 0.85;
(iv) greater than $-$ 0.65. 6M

OR

4. a) Prove that the mean and the variance of the Poisson distribution are equal. 6M

b) It has been claimed that in 60% of all solar-heat installations the utility bill is reduced by at least one-third. What are the probabilities that the utility bill will be reduced by at least one-third in

(**i**) four of five installations;

(**ii**) at least four of five installations? 6M

UNIT–III

5. a) If a 1-gallon can of paint covers on the average 513.3 square feet with a standard deviation of 31.5 square feet, what is the probability that the sample mean area covered by a sample of 40 of these 1-gallon cans will be anywhere from 510.0 to 520.0 square feet? 6M

   b) Explain briefly the following
   (i) Point Estimation
   (ii) Interval Estimation 6M

OR

6. a) Take 30 slips of paper and label five each -4 and 4,four each -3 and 3,three each -2 and 2, and two each -1,0 and 1.If each slip of paper has the same probability of being drawn, find the probability of getting $-4,-3,-2,-1,\ 0,\ 1,\ 2,\ 3,\ 4$ and find the mean and the variance of this distribution. 6M

   b) Determine a 99% confidence interval for the mean of a normal distribution with variance $\pm^2$ = 9 , using a sample of $n=100$ values with mean $\bar{x}=5$. 6M

UNIT–IV

7. a) Explain the test procedure for $Z-$ test concerning difference between two means. 6M

   b) A study shows that 16 of 200 tractors produced on one assembly line required extensive adjustments before they could be shipped, while the same was true for 14 of 400 tractors produced on another assembly line. At the 0.01 level of significance, does this support the claim that the second production line does superior work? 6M

OR

8. a) Explain the test procedure for $Z-$ test concerning one mean when $\pm$ is known. 6M

   b) Intelligence tests on two groups of boys and girls gave the following results. Examine if the difference is significant. Use a 0.05 level of significance.

	Mean	S.D.	Size
Girls	70	10	70
Boys	75	11	100

6M

UNIT–V

9. a) The following observations collected according to the one-way analysis of variance design,

Treatment 1	6	4	5	---	---
Treatment 2	13	10	13	12	---
Treatment 3	7	9	11	---	---
Treatment 4	3	6	1	4	1

Construct the analysis of variance table and test the equality of treatments using 0.05 level of significance. 6M

   b) Explain the test procedure of ¡^{2} test for goodness of fit. 6M

OR

10. a) The following table reference to the radio message data, test for goodness of fit at 0.05 level of significance whether the data can be looked upon as values of a radiation variable having the Poisson distribution with ª =4.6.

Number of radio message	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Frequency	3	15	47	76	68	74	46	39	15	9	5	2	0	1

Find the mean of this distribution and using it as the parameter ª , fit a Poisson distribution. Test for goodness of fit at the 0.01 level of significance. 6M

   b) Explain procedure for two-way classification of analysis of variance. 6M

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Hall Ticket Number :										

R-15 / R-14

Code: 5P2B11 / 4P2B11

M.C.A. I Semester Supplementary Examinations June 2016

Mathematical Foundations of Computer Science

Max. Marks: 60 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 12 = 60 Marks)

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UNIT–I

1. a) Prove that the argument $p \to q, q \to r, r \to s, \sim s, p \vee t$ is valid without using truth table. 6M

   b) Write an equivalent formula for following which does not contain the bi-conditional $P \wedge (Q \Leftrightarrow R) \vee (R \Leftrightarrow P)$ 6M

OR

2. a) Show that $\sim(P \wedge Q) \to (\sim P \vee \sim Q) \Rightarrow (P \vee Q)$ 6M

   b) State one procedure to obtain the principal disjunctive and principal conjunctive normal forms of any predicate formula using an example 6M

UNIT–II

3. Consider the set A = {2, 7, 14, 28, 56, 84} and the relation a b if and only if a divides b. Give the Hasse diagram for the poset (A,≤) 12M

OR

4. a) List out the properties of a Lattice 6M

   b) List out the properties of binary relations 6M

UNIT–III

5. How many different sub-committees can be formed each containing three women from an available set of 20 women and four men from an available set of 30 men? 12M

OR

6. a) In a survey, 2000 people were asked whether they read ‘India Today’ or ‘Business Times’. It was found that 1200 read ‘India Today’, 900 read ‘Business Times’ and 400 read both. Find how many at least one magazine read and how many read neither. 6M

   b) Show how many different words can be formed out of the letters of the word VARANASI? 6M

UNIT–IV

7. a) Give an example to explain how to calculate coefficient of generating function 6M

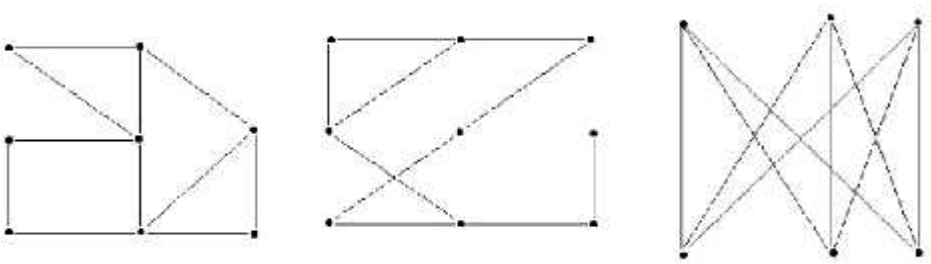
   b) Discuss briefly about higher order recurrence relations 6M

OR

8. Solve the recurrence relation $a_n = 4a_{n-1} - 4a_{n-2}$, $n \geq 2$ with initial conditions, $a_0 = 6$ and $a_1 = 8$ 12M

UNIT–V

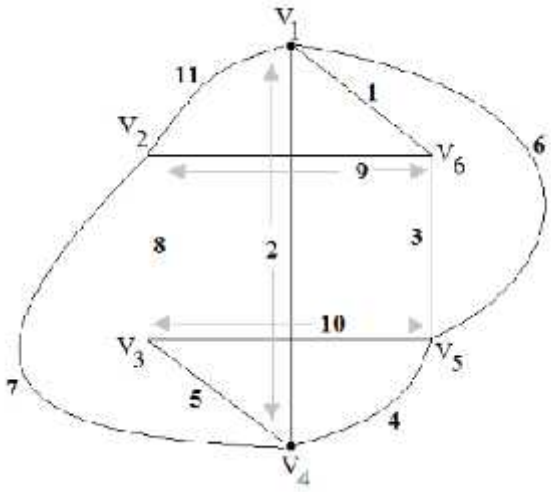
9. Which of the graphs G in figure below have a Hamiltonian circuit? If not, why not?



12M

OR

10. Determine the minimal spanning tree for the graph given below using Krushal's algorithm.



12M

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Hall Ticket Number :										

R-15 / R14

Code: 5P2C16/4P2C16

M.C.A. I Semester Supplementary Examinations June 2016

Technical Communication & Computer Ethics

Max. Marks: 60 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 12 = 60Marks)

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UNIT–I

1. What is meant by Technical Communication? Explain its importance for a successful career in engineering. 12M

OR

2. Discuss the five types of listening skills? 12M

UNIT–II

3. What are the different aspects of Non-verbal Communication? 12M

OR

4. Discuss the different technology enabled tools like PPTs for effective technical presentations. 12M

UNIT–III

5. What are the different team playing skills observed in candidates by recruiters in the group discussion process? 12M

OR

6. Write a letter of application for a soft-ware engineer's post. Write and enclose your resume. 12M

UNIT–IV

7. Discuss the importance of good ethical practices in a business organization. 12M

OR

8. Discuss the ethical issues of soft-ware piracy in India with reference to the licensed Operating Systems like Windows. 12M

UNIT–V

9. Discuss the importance of data encryption in protecting online business transactions. 12M

OR

10. Discuss the procedures to be followed and precautions to be taken by a whistle blower in a software company. 12M

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