R-19

Code: 19DE11T

M.C.A. I Semester Regular Examinations January 2020
Accounting and Financial Management
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.   Journalise the below transactions, post them to ledger and prepare Trial Balance 2016

April 1 Anthony Started business with Rs 1,00,000
Apr 2 Brought goods for cash Rs 25,000
Apr 3 Purchased goods from Kiran Rs 5,000 on credit
Apr 6 Deposited Rs20,000 into the Bank
Apr 9 Sold goods to Imran Rs 25,000
Apr12 Received cash from Imran Rs 25,000
Apr 12 Paid to Kiran Rs 5,000
Apr 15 Cash Sales Rs 8,000
Apr 22 Paid Wages Rs 5000
Apr 27 Repair to Machinery Rs 2,000
Apr 30 Cash withdrawn for personal use Rs 6,000   12M

OR

2.   Following balances are extracted from Coromandal Ltd as on 31st March, 2016.

Dr   **Cr**

Particulars	Amount (Rs)	Particulars	Amount (Rs)
Stock(01-04-2015)	15,000	Discount	3,000
Bad Debts	2,000	Sales	70,000
Sales Returns	1,300	Purchase returns	2,700
Debtors	5,000	Creditors	35,750
Drawings	2,000	Bills Payable	23,000
Purchases	12,000	Commission	5,000
Cash at Bank	5,000	Capital	1,00,000
Repairs	4,000		
Laptop	30,000		
Rent	5,000		
Office expenses	1,400		
Salaries	12,000		
Wages	2,500		
Tables & Chairs	5,000		
Advertisement	10,000		
Commission	8,400		
Carriage outwards	3,200		

Adjustments

Closing stock was valued at Rs30,000.
Prepaid Rent Rs. 2,000.
Outstanding wages   Rs.1,000.
Make a provision for doubtful debts at 5%.
Depreciation on Laptop was 10%.   12M

UNIT–II

3. From the following data, calculate
   Break- even point, Margin of Safety, P/V ratio
   a) Fixed expenses Rs.4,000   b) Sales.Rs.20,000
   c) Variable Expenses Rs.12,000.   12M

OR

4. "Cost-Volume–Profit analysis helps the managers to produce the optimum quantity in the right time" Explain.   12M

UNIT–III

5. The Balance sheet of Horizontal Ltd., as at 31st March 2017 is as follows

Liabilities	Rs	Assets	Rs
Equity Capital	16,00,000	Goodwill	19,00,000
Debentures	2,50,000	Fixed Assets	5,75,000
Outstanding Expenses	1,50,000	Stock	50,00,000
Sundry Creditors	50,00,000	Debtors	25,00,000
Reserves & Surplus	20,00,000	Cash	5,000
Mortgage	10,00,000	Prepaid expenses	20,000
	1,00,00,000		1,00,00,000

The sales for the year were Rs.60,00,000. Gross Profit 40% of Net sales. Operating and Net profit were Rs 14,00,000 and Rs. 10,00,000 respectively. The opening balances of stock, creditors and Debtors were Rs. 20,00,000, Rs.25,00,000 and Rs. 15,00,000 respectively. The Company approaches you for borrowing facilities. Calculate the relevant ratios and comment your recommendations.   12M

OR

6. What is Ratio Analysis? Explain its advantages and disadvantages with suitable examples.   12M

UNIT–IV

7. Why the objective of financial Management has been shifted from Profit maximization to Shareholders' wealth maximization? Discuss.   12M

OR

8. 'Procurement of external finance is difficult compared with internal finance'. Comment   12M

UNIT–V

9. "Incorporating Risk is important in Capital Budgeting". Explain the techniques available to it in support of the given statement.   12M

OR

10. Green field Ltd, has to purchase of machinery which costs Rs8,00,000 and which has an estimated life of 10 years. This machine will generate sales of Rs4,00,000 per year while increased costs and maintenance will be Rs1,00,000 per year. The cost of the machine is depreciated on a straight line and has no salvage value at the end of its 10 year life. The company has a cost of capital of 12 per cent and corporate tax rate of 40 percent. You are required to calculate
    a) Annual cash flow
    b) Pay Back period
    c) NPV
    d) IRR for the given project.
    e) Should the company purchase the new machine?   12M

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M.C.A. I Semester Regular Examinations January 2020
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 or disprove the validity of the following arguments using the rules of inference, All men are fallible,

   All kings are men,

   Therefore, all kings are fallible   6M

   b) Using proof by contradiction, show that 2 is not a rational number, also explan converse, inverse and contrapositive of a statement.   6M

OR

2. a) Show that R is valid conclusion from the given set of premises P, P $^{®}$ Q, Q $^{®}$ R.   6M

   b) Explain any six rules of inference with examples   6M

UNIT–II

3. a) Define equivalence relation and give an example   6M

   b) What is transitive closure and give an example?   6M

OR

4. a) Discuss properties of binary relations with illustrations?   6M

   b) Demonstrate diagraphs of POSET with suitable illustrations?   6M

UNIT–III

5. a) Analyze the principles of inclusion exclusion with suitable illustration.   6M

   b) How many ways can the letters of the word ALGORITHM be arranged in a row if A and L must remain together as a unit?   6M

OR

6. a) Show that if eight people are in a room, at least two of them have birthday that occur on the same day of the week   6M

   b) How many ways are there to place 20 identical balls into 6 different boxes in which exactly 2 boxes are empty?   6M

UNIT–IV

7. a) Solve the recurrence relation $a_n - 7a_{n-1} + 10a_{n-2} = 4^n$, $a_0=0$, $a_1=1$.   6M

   b) Solve the recurrence relation $a_n - 5a_{n-1} + 6a_{n-2} = (n+1)^2$, $a_0=0$, $a_1=1$.   6M

OR

8. a) Find the generating function for the recurrence relation $a_{n+1}-a_n=3^n$, n 0 and $a_0=1$, Hence solve the relation.   6M

   b) Solve $a_n - 4a_{n-1} + 4a_{n-2} = 2^n$, $a_0=2$, $a_1=1$.   6M

UNIT–V

9. a) Write an algorithm for Prim's algorithm for constructing minimal spanning tree and explain with suitable example?   6M

   b) Define Spanning tree and explain its characteristics   6M

OR

10. a) Write an algorithm for breadth-first search spanning tree and explain with example?   6M

    b) Define Hamiltonian cycles and write basic rules for constructing Hamiltonian cycles   6M

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M.C.A. I Semester Regular Examinations January 2020
Probability and Statistics

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) There are 12 cards numbered 1 to 12 in a box, if two cards are selected, what is the probability that sum is add with replacement   6M

   b) A man is known to speak the truth 3 out of 4 times. He throws a die and reports that it is a 6. Find the probability that it is actually a 6.   6M

OR

2. a) A continuous random variable X has the Probability density function

$$f(x) = \begin{cases} \dfrac{1}{2}(x+1), & -1 < x < 1 \\ 0 & otherwise \end{cases}$$ .Find the mean and variance of X

   6M

   b) For the discrete probability distribution

X	0	1	2	3	4	5	6
F	0	2K	2K	3K	K²	2K²	7K²+K

   Find K and Mean.   6M

UNIT–II

3. a) A sample of 3 items is selected at random from a box containing 10 items of which 4 are defective. Find the expected number of defective items.   6M

   b) Two dice are thrown 120 times. Find the average number of times in which, the number on the first die exceeds the number on the second die?   6M

OR

4. The marks obtained in mathematics by 1000 students is normally distributed with mean 78% and standard deviation 11%. Determine

   (i) How many students got marks above 90%?
   (ii) What was the highest mark obtained by the lowest 10% of the students?
   (iii) Within what limits did middle of 90% of the students lie?   12M

UNIT–III

5. a) The mean and standard deviation of a population are 11,795 and 14,054. What can one assert that 95% confidence about the maximum error if $\bar{x} = 11.795, n = 50$.   6M

   b) A die is tossed 960 times and it fails with 5 upwards 184 times. Is the die unbiased at a level of significance of 0.01?   6M

OR

6. a) Explain Type-I and Type-II errors.   6M

   b) A die was thrown 9000 times and of these 3220 yielded a 3 or 4. Is this consistent with the hypothesis that the die was unbiased   6M

UNIT–IV

7. A simple sample of heights of 6400 English men has a mean of 170 cm and a S.D of 6.4cm, while a simple sample of heights of 1600 Americans has a mean of 172cm and a S.D of 6.3cm. Do the data indicate that American are the average taller than the English men at 5% level of significance   12M

OR

8. In a certain sample of 2000 families' 1400 families are consumers of Tea. Out of 1800 Hindu families, 1236 families consume Tea. Use t^2-test and state whether there is any significant difference between Consumption of Tea among Hindu and Non-Hindu families.   12M

UNIT–V

9. A bank plans to open a single server drive-in banking facility at a certain Centre. It is estimated that 20 customers will arrive each hour on hour on average, it is requires 2 minutes to process a customer's transaction. Determine (i) The proportion of time that the system will be idle (ii) on the average, how long a customer will have to wait before reaching the server. (iii) The fraction of customers who will have to wait.   12M

OR

10. A car park contains 5 cars. The arrival rate of cars is Poisson with a mean rate of 10 per hour. The length of time each car spends in the car park has negative exponential distribution with mean 2 hours. How many cars are in the car park on average and what is the probability of a newly arriving customer finding the car park his car elsewhere?   12M

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		CO	Blooms Level
1.	a)	CO1	L1
	b)	CO1	L1
2.	a)	CO1	L1
	b)	CO1	L1
3.	a)	CO2	L2
	b)	CO2	L2
4.		CO2	L2
5.	a)	CO3	L3
	b)	CO3	L3
6.	a)	CO3	L3
	b)	CO3	L3
7.		CO4	L4
8.		CO4	L4
9.		CO5	L1
10.		CO5	L1

R-19

Code: 19DF12T

M.C.A. I Semester Regular Examinations January 2020
Problem solving with 'C'
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) Define Operator? Discuss operator precedence and associativity   6M

   b) What is ternary Operator? Write a program to find the largest of the two numbers using ternary operator   6M

OR

2. a) Compare and contrast the difference between automatic and static storage class.   6M

   b) Write the structure of the C Program and Explain?   6M

UNIT–II

3. a) Explain formatted input / output functions used in the C program with examples   6M

   b) A farm produces several food grains, namely wheat, barley, oats and flax. The monthly production details (in Kg) and price per Kg (in INR) received during the year are recorded. Read the production details and price of the food grains and print its details through your C program   6M

OR

4. a) Explain different types of branching statements in C with an example   6M

   b) Discuss the break and continue statements with an examples   6M

UNIT–III

5. a) Write different string handling functions in C with examples   8M

   b) Write a program to check whether the given string is a palindrome or not using built in functions   4M

OR

6. a) Explain different types of arrays in C   6M

   b) Write a program to store and print the elements in a two dimensional array using while or do-while   6M

UNIT–IV

7. a) Define structure? Write the differences between arrays and structures   6M

   b) **Mr. John runs a pizza-analysis service. For each pizza, he needs to record the following information:** The name of the pizza company, which can consist of more than one word, The weight of the pizza(in gms), price of the pizza d**evise a structure in C that can hold this information and write a program to get the information about pizza from the user and then it should display the pizza details.**   6M

OR

8. a) What is modularity? How modularity is implemented in C functions?   6M

   b) Define function? Write its advantages and disadvantages   6M

UNIT–V

9. Discuss different file handling functions in C   12M

OR

10. a) What is pointer? Explain pointer to a pointer with an example   6M

    b) Write a program to allocate and release the memory dynamically   6M

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		CO	Blooms Level
1.	a)	CO1	L2
	b)	CO1	L3
2.	a)	CO3	L3
	b)	CO2	L2
3.	a)	CO2	L2
	b)	CO2	L4
4.	a)	CO1	L2
	b)	CO1	L3
5.	a)	CO4	L2
	b)	CO4	L3
6.	a)	CO3	L2
	b)	CO4	L3
7.	a)	CO3	L3
	b)	CO2	L4
8.	a)	CO4	L2
	b)	CO4	L2
9.		CO5	L2
10.	a)	CO5	L2
	b)	CO5	L3

M.C.A. I Semester Regular Examinations January 2020
Technical Communication
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. Define Communication and explain the elements of the communication process with a diagram.   12M

OR

2. Technical Communication involves all the four skills of language: Listening, Speaking, Reading and Writing. Explain the basics of Technical communication.   12M

UNIT–II

3. Discuss the various types of communication and explain in detail verbal and non-verbal communication.   12M

OR

4. 'Stage fright or nervousness helps us achieve better performance in professional presentation situations.' Elucidate.   12M

UNIT–III

5. Explain briefly the common components of a business letter.   12M

OR

6. Explain the features of an effective email. Highlight writing techniques required to draft effective professional emails. Provide appropriate examples to substantiate your answer.   12M

UNIT–IV

7. Discuss the various types of reports. Give an example of each.   12M

OR

8. You have been asked by a firm which manufactures detergent powder to make a study of the consumer reaction to their product and suggest measures to improve the image and the sales of their product. Prepare a report of the study.   12M

UNIT–V

9. Explain the several functions followed by the participants in a Group discussion as a part of selection process.   12M

OR

10. Discuss elaborately the styles of interviews followed by companies in the present era and enumerate the factors that contribute towards success in an interview.   12M

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	CO	Blooms Level
1.	CO1	L3
2.	CO1	L2
3.	CO2	L4
4.	CO2	L2
5.	CO1	L1
6.	CO1	L2
7.	CO2	L3
8.	CO1	L4
9.	CO2	L2
10.	CO2	L3