

Subject Code: MC915

MCA I Semester [R09] Regular Examinations, January 2010

PROBABILITY AND STATISTICAL APPLICATIONS

Time: 3 Hours

Max Marks: 60

Answer any FIVE questions All questions carry EQUAL marks

1. (a) State and Prove the Bayes Theorem.
(b) A and B enter into a bet according to which 'A' will get Rs.200 if it rains on that day and will lose Rs.100 if it does not rain. The probability of raining on that day is 0.7. What is mathematical expectation of A?

2. (a) Define Binomial distribution and derive the first four moments of a binomial distribution
(b) The diameter of an electric cable is assume to be a continuous variate with P.d.f.
 $f(x) = 6x(1-x)$,
 $0 \leq x \leq 1$. Verify that the above is P.d.f. also find the mean and variance

3. Define a normal Random Variable & derive the properties of normal distribution

4. (a) Derive the Characteristic function of a Poisson distribution
(b) State & prove the Central limit theorem

5. (a) Define a Student 't'. Explain the t-test for single mean .
(b) A sample of 400 male students is found to have a mean height of 171.38 cms . Can it Reasonably regarded as a sample from a large population with mean height 171.17 cms and standard deviation 3.30 cms?(use 5% level of significance)

6. (a) Explain the F-test for equality of population variances.

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(b) Elapsed times for a synthetic job were measured on two different computer systems.

The sample sizes for the two cases were 15 each and the sample means and sample

Variances were computed to be

$$\bar{x} = 104 \text{ seconds} \quad \bar{y} = 114 \text{ seconds}$$

$$S_x^2 = 290 \quad S_y^2 = 510$$

Test the hypothesis that the population means $\mu_x = \mu_y$, against the alternative $\mu_x < \mu_y$.

7. (a) Explain the principle of Least-Squares.

(b) Fit a Second degree curve for the following data

X :	2	3	4	5	6	7
Y:	5	9	18	26	35	50

8. (a) Explain the role of P-charts in statistical quality control

(b) Explain the characteristics of M/M/1 model

Subject Code: MC119

MCA I Semester [R06] Supplementary Examinations, January 2010

ACCOUNTING AND FINANCIAL MANAGEMENT

Time: 3 Hours

Max Marks: 60

Answer any FIVE questions All questions carry EQUAL marks

1. Explain “Funds from operation”, How it is computed?
2. What is the difference between profit Maximization and Wealth Maximization?
3. Differentiate the Master files and Transaction files?
4. What is Double entry system? How it is different from the single entry system? Explain the advantages in Double Entry system over Single Entry system.
5. Explain the role of accountant in modern organization. What are accounting conventions are to be followed while preparing the Final Accounts?
6. What are the elements of costs? Explain the terms with appropriate examples.
7. (a) The Fixed cost for the year is Rs.40, 000. Variable cost per unit for the single product being made is Rs.2. Each unit sells at Rs.10. You are required to calculate the break -even points.
(b) It has been found that Rs.80, 000 will be the likely sales turnover for the next budget period. The cost and the selling price remain the same. Calculate the estimated contribution.
(c) A profit target of Rs.30, 000 has been budgeted. Calculate the turn over required
8. Find out break-even point from the following:
 - (a) Fixed cost Rs.20, 000 variable cost Rs.2 per unit, selling price Rs.4 per unit.
 - (b) Sales Rs.6000 variable cost Rs.3, 600 picture cost Rs.2, 000.
 - (c) Sales Rs.4000 variable cost Rs.2, 400 profit Rs.400.

Subject Code: MC112

MCA I Semester [NR] Supplementary Examinations, January 2010

ACCOUNTING AND FINANCIAL MANAGEMENT

Time: 3 Hours

Max Marks: 60

Answer any FIVE questions All questions carry EQUAL marks

1. What is the Double entry system? How it is different from the single entry system? Explain the advantages in Double Entry system over Single Entry system.
2. Explain the role of accountant in modern organization. What are the accounting conventions are to be followed while preparing the Final Accountants.
3. What are the elements of costs? Explain the terms with appropriate examples.
4. What is the difference between Trail Balance and Balance Sheet?
5. What are the various stages of Accounting Process? Explain various basic Accounting Concept which effect the Double Entry System.
6. What is Standard Costing? How you calculate Material Variances
7. From the following particulars determine funds from operation:

	Rs
Net Loss	10,000
Depreciation on machinery	15,000
Amortization of good will	10,000
Loss on sale of plant	5,000
Profit on sale of land	8,000
Provision for bad debts	1,000

8. From the following particulars ,find out the new selling price per unit if B.E.P. is to be brought down to 9,000 units

Variable cost per unit = Rs.125
Fixed expenses = Rs.2, 70,000
Selling price per unit = Rs .150