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Question Paper Code : 60201

M.B.A. DEGREE EXAMINATION, MAY/JUNE 2014.

First Semester

BA 9201/BA 911/UBA 9101/10488 MB 102 — STATISTICS FOR MANAGEMENT

(Regulation 2009/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define statistical methods.
2. If $P(A|B) = 0.2$ and $P(B) = 0.4$ then find $P(A \cap B)$.
3. Write the standard error of sampling distributions of mean and proportion.
4. What is the use of central limit theorem?
5. What do you mean by hypothesis?
6. Find Chi-square test statistic if $s = 10$ and $n = 73$ with hypothesized $\sigma = 9$.
7. Define Runs test with an example.
8. Explain the KW test in relation with ANOVA.
9. Define positive correlation.
10. What is irregular variation?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the use of addition theorem. (6)
(ii) A purchase committee is formed from the staff of a company which has two departments Finance and Production of size 5 and 10 respectively. Both Finance and production department has two female staff each. A department is randomly selected and from which two members are selected. If the committee formed with female only, then find the Bayesian probability that the committee has come from Finance department. (10)

Or

(b) XYZ company produces the average package size of 100 kg Urea with the standard deviation of 9 kg. If a randomly selected package is weighed, what is the probability that

- (i) The package has weight over 110 kgs
- (ii) Below 90 kg
- (iii) Below 85 kg
- (iv) Between 85 to 90 kg. Package size is normally distributed random variable. (4 × 4 = 16)

12. (a) Explain random sampling methods in detail stating the merits and demerits. (16)

Or

- (b) (i) Differentiate Point and Interval estimation. (8)
- (ii) How to determine sample size for a statistical testing in management decision making situation. (8)

13. (a) (i) Discuss the test procedure to test hypothesized population proportion using single sample proportion. (8)

(ii) A company claims that they offer average wage of the workers is Rs. 870 per day. Test whether of average salary Rs 870 is maintained in that company or not using t test. (8)

Employee id# : A34 B32 C21 A43 C11

Wages got Rs. : 850 950 900 930 870

Or

(b) Time of calls (in min) received in a day in a BPO are given below :

Operator	Call#1	Call#2	Call#3	Call#4	Call#5	Call#6
A	12	23	4	5	16	17
B	2	3	10	8	12	6
C	11	34	3	12	54	23

Test whether the call duration varies significantly between the operators using ANOVA test. (16)

14. (a) (i) What are the merits of Nonparametric methods over parametric methods? (8)
- (ii) Explain the Sign test for comparing paired samples with appropriate examples. (8)

Or

- (b) Test whether the association of Facebook usage and Interest on Protests on public issues is significant or spurious from a study conducted from 2000 members randomly selected from an area. (16)

Facebook usage	Protests on public issues	
	Participated	Not participated
Regular visitor	200	200
Rare visitor	400	600
Non member	200	400

15. (a) A financial manager speculates about the relationship between family incomes and their allocation for investment. The following table presents the results of a survey of 8 randomly selected families :

Annual disposable income (in '000 Rs.) :	8	12	9	24	13	37	10	16
Per cent allocation for investment :	36	25	33	15	28	19	20	22

- (i) Develop a regression equation that best describes this data. (10)
- (ii) Calculate Karl Pearson correlation coefficient. (6)

Or

- (b) (i) Explain the method of least square in curve fitting. (6)
- (ii) Find Fishers index number from the following data. (10)

Commodity	Year 2012		Year 2013	
	Price Rs.	Quantity kg	Price Rs.	Quantity kg
Rice	50	10	60	12
Wheat	30	5	40	7
Oil	100	2	200	2
Fruit	50	10	50	20