

**M.H.A. SEM-II (2012 COURSE) (CHOICE BASED CREDIT
SYSTEMS) : SUMMER - 2018
SUBJECT : BASIC STATISTICS**

Day : Wednesday
Date : 25/04/2018

S-2018-1146

Time : 10.00 AM TO 01.00 PM
Max. Marks : 60

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION – I

Q.1 Answer any **TWO** of the following questions: **(14)**

- a) Discuss Random Sampling , Stratified Random Sampling, Cluster sampling and Systematic sampling methods. Discuss the importance of sample size and how to determine the same.
- b) Estimate mean, mode and median of following data on birth-weights (Kg) of infants . Draw a histogram

Group	2.5 to 2.99 Kg	3.0 to 3.49 kg	3.5 to 3.99 Kg	4.0 to 4.5 Kg
Frequency	5	10	7	5

- c) What are the scatter diagrams, line and exponential curves, and growth curves? Draw typical examples with proper labels. State typical equations and discuss importance of statistic R-squared.

Q.2 Solve any **FOUR** of the following: **(16)**

- a) List and describe the common measures of dispersion.
- b) State the properties of Binomial distribution
- c) State the properties of Normal distribution
- d) Write short note on types of variables
- e) Write a short note on Rank Correlation

SECTION – II

Q.3 Answer any **TWO** of the following questions: **(14)**

- a) Use the following data to compare mean Body weights of Male and Female students of a Nursing School.

Gender	n	Mean	Variance	
Male	25	62.5	2.1	
Female	25	53.8	1.4	
t-value for 48 df = 1.96, assume alpha = 0.05				

P.T.O.

- b) Discuss the cause-effect aspects of relations between BMI, Height and Weight.
- c) Survey of incidence of Cataract gave the following contingency table. Find the expected frequencies for the situation.

Age group	Low (30-39)	Middle (40-49)	Old (above 50)
No-incidence	10	15	10
One-eye-affected	5	15	20
Both eyes-affected	5	25	30

Q.4 Compute values in case of any **FOUR** of the following: **(16)**

- a) In a row of 320 plants 48 are virus affected. What is probability of a healthy plant.
- b) In the sequence { AGGCCCTTAACCG } what is the probability of G or T.
- c) What is the relative frequency of G in the data set { A, G, G, G, C, T, T, T, A, A, G, C, C, T }
- d) If Variance = 25 , what is the value of Std. Deviation?
- e) If in a data set Quartiles are { 4.5, 6.7, and 7.2 } . What is the value of Median?

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