

**M.H.A. SEM-II (2012 COURSE) (CHOICE BASED CREDIT  
SYSTEMS) : WINTER - 2017  
SUBJECT : BASIC STATISTICS**

Day : **Wednesday**  
Date : **15/11/2017**

**W-2017-1031**

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) Find mode , median, and range of number of patients visiting the OPD in last 20 days using the following record. Create a proper frequency table.

30	30	32	31	35	30	30	29	31	32
34	33	32	33	32	32	33	32	30	34

- b) List and describe common measures of Dispersion.
- c) State the properties of Normal (Gaussian) Distribution

**Q.2** Write short notes on any **FOUR** of the following: **(16)**

- a) Estimating measures of central tendency of Grouped data
- b) Multivariate Analysis
- c) Cluster sampling
- d) Binomial Probability distribution
- e) Pie Chart and Bar Charts

**SECTION – II**

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

- a) Use the following data to test the hypothesis that , in case of adults the height of men are significantly different from the height of women.

Gender	n	Mean ( cm)	Variance	
Male	32	154.3	2.35	
Female	18	148.3	1.34	
t-value for 48 df = 1.96				

- b) Why randomization is very important in sampling ? Explain how care is taken to get proper representative samples in the following cases
- 1) Liquid samples are to be drawn from a large volume of liquid
  - 2) For a nutritional survey children are to be selected from a small locality.
- c) Discuss the importance of ‘sample size’ in any data collection effort.

P.T.O.

**Q.4** Solve any **FOUR** of the following:

**(16)**

- a) A survey on general health of children in age group of 15-18 years, it was found the HEIGHT and WEIGHT of Male were significantly higher compared to Females, but when BMI(Body Mass Index) was compared no significant difference was observed. Comment on the findings
- b) Give an example of a typical contingency table to test the effect of economic background of patients on grading of facilities ( Assume convenient data for illustration)
- c) Explain the terms Observed frequencies and Expected frequencies in the context of chi-squared test.
- d) How to use a scatter diagram for curve fitting . Explain.
- e) Discuss the Steps in Testing of Hypothesis in general

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