Fourth Year Pharm. D (SUPPLEMENTARY) : SUMMER - 2019

SUBJECT : BIOSTATISTICS & RESEARCH METHODOLOGY

Day : Thursday
Date : 04/07/2019

Time : 02.00 P.M. TO 05.00 PM
Max. Marks : 70

S-2019-4549

N.B.:

1) **Q.No.1** and **Q.No.5** are **COMPULSORY**. Out of the remaining questions attempt **ANY TWO** questions from each section.
2) Answers to both the sections should be written in **SEPARATE** answer books.
3) Statistical tables and graph papers will be supplied at the examination centre.
4) Use of non-programmable electronic pocket **CALCULATOR** is allowed.
5) Figures to the right indicate **FULL** marks.

SECTION – I

Q.1 **A)** Answer **ANY FOUR** of the following: **[08]**

i) Differentiate between Descriptive design and diagnostic design.

ii) What is control group?

iii) Write the importance of computer in data analysis.

iv) What is experimental design?

v) What is computerized retrieval?

vi) Write the importance of sample size determination in research.

B) Write the importance of report writing in research. **[03]**

Q.2 How will you present the data in research? Write types of presentation. **[12]**

Q.3 **a)** Explain in detail importance of computer use in hospital pharmacy. **[07]**

b) Write the importance of interventional studies in research. **[05]**

Q.4 Write short notes on **ANY THREE** of the following: **[12]**

a) Case studies in clinical research

b) Patient record database management

c) Observational studies

d) Sample size and confidential interval

P.T.O.

SECTION – II

Q.5 A) Attempt **ANY FOUR** of the following: **[08]**

i) Define 'Statistics'.

ii) Compute the Mode and the Median of the following:

105, 132, 145, 117, 132, 126, 129.

iii) Give two examples of the discrete variable.

iv) What are the maximum and minimum values of the 'Probability'?

v) Define 'Population'.

B) Explain the terms 'Attributable Risk' and 'Relative Risk'. **[03]**

Q.6 a) Draw the 'Greater than Ogive' for the following data and using the graph find the approximate value of the Median. **[06]**

B.P.	110 – 115	115 – 120	120 – 125	125 – 130	130 – 135	135 – 140
No. of Patients	9	13	26	22	18	13

b) If on the average 4 RBCs are found in a specific volume of blood for the healthy individuals, then what is the probability that for an randomly chosen healthy individual there will be exactly 3 RBCs in the same volume of blood? **[06]**

Q.7 a) Find the Karl Pearson's correlation coefficient for below: **[06]**

Weight of a patient in kgs	55	60	65	70	75	80
Pulse Rate	72	69	75	73	76	80

b) The theory says that the number of individuals belonging to the blood groups A, B, O and AB are in the ratio 2:2:5:1. When some individuals in a location were checked it showed following results. **[06]**

Belonging to	A	B	O	AB
No. of Individuals	34	39	84	23

Test whether the theory can be justified (Use 5%LOS).

Q.8 a) Following are the pulse rate of the individuals belonging to the different professions. **[06]**

Teachers	72	71	69	73	70	74
Lawyer	80	84	87	83	88	90
Grain dealers	69	68	72	74	73	75

Prepare the ANOVA table and test whether the pulse rate for the individuals belonging to the above professional differ significantly (Use 5%LOS).

b) Following is the data in respect of the number of individuals voted at one election: **[06]**

	Rural	Urban
Voted	735	833
Not voted	146	240

Test whether the voting pattern depends on the locality i.e Urban or Rural (use 5%LOS)

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