DOCTOR OF PHARMACY
Fourth Year Pharm. D. : SUMMER : 2022
SUBJECT : BIOSTATISTICS & RESEARCH METHODOLOGY

Day : Wednesday   Time : 02:00 PM-05:00 PM
Date : 11/5/2022   **S-5746-2022**   Max. Marks : 70

N. B. :

1) **Q. No.1** and **Q. No. 5** are **COMPULSORY**. Out of remaining answer **Any TWO** questions from each section.
2) Answers to both the sections should be written in the **SEPARATE** answer books.
3) Figures to the right indicate **FULL** marks.

SECTION - I

Q.1 **a)** Answer **ANY FOUR** out of **SIX** :   **(08)**

    i) Write the importance of observational studies.

    ii) Write the applications of clinical trials.

    iii) What are interventional studies?

    iv) Differentiate between descriptive design and diagnostic design.

    v) Write the main purpose of research.

    vi) What is power of study?

    b) Write the importance of computer system in patient record database management.   **(03)**

Q.2 How will you determine sample size? Write the importance of sampling in scientific research.   **(12)**

Q.3 **a)** Write the importance of computer in community pharmacy.   **(07)**

    b) Explain different parts in report writing.   **(05)**

Q.4 Write notes on **ANY THREE** of the following :   **(12)**

    i) Computerized Literature Retrieval

    ii) Patient medication profiles

    iii) Presentation of data

    iv) Inventory control

    v) Experimental design

P.T.O.

SECTION - II

Q.5 **a)** Answer **ANY FOUR** out of **SIX** : (08)

 i) Define type 1 error.

 ii) What do you mean by parameter and statistic?

 iii) Explain the critical region.

 iv) Explain standard error of mean.

 v) Write about important data distributions with key properties.

 vi) Explain about null hypothesis and alternative hypothesis.

 b) Write in detail about one statistical software. (03)

Q.6 **a)** Compute Karl Pearson coefficient of correlation for given data. (06)

X	12	32	25	19	20	22
Y	19	21	17	22	38	13

 b) For given data, find two regression equations and estimate X when Y=20 if (06)
 correlation coefficient is 0.6.

	X	Y
Mean	20	25
Standard deviation	5	4

Q.7 **a)** Explain the difference between relative risk and attributable risk. How to (07)
 handle these risks.

 b) What is the significance of incidence and prevalence in statistical methods in (05)
 epidemiology?

Q.8 Write notes on **ANY THREE** of the following : (12)

 i) Measures describing the central tendency

 ii) Pie charts, scatter plots, semi logarithmic plots

 iii) Linear regression and correlation

 iv) Level of significance and power of test

 v) Chi square test

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