

Total No. of printed pages = 4

PY 134103

Roll No. of candidate

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2016

**M. Pharm 1st Semester End-Term Examination**

**PHARMACEUTICAL PROJECT**

**METHODOLOGY AND BIostatISTICS**

Full Marks –100 Pass Marks – 35 Time – Three hours

The figures in the margin indicate full marks  
for the questions.

1. Answer any *ten* questions : 3×10=30
  - (a) Define 'Research problems'.
  - (b) What is meant by 'Pilot study' ?
  - (c) What are the various types of Research reports ?
  - (d) What do you mean by "Research tools" ?
  - (e) Give the differences between "Basic" and "Applied Research".
  - (f) What do you understand by "Literature Survey" ?

[Turn over

(g) What is the meaning of "testing of hypothesis" ?

(h) What are different techniques of documentation ?

(i) Define the terms "Standard error" and "Degree of freedom".

(j) What are the main components of a "Research paper" ?

(k) Define one way and two way ANOVA.

(l) What are the objectives of Research ?

2. Answer any *eight* questions :  $5 \times 8 = 40$

(a) Explain the different forms in which a research work may be reported.

(b) Give the importance of footnotes and bibliography in context of research report.

(c) Describe the qualitative and quantitative tools used in research.

(d) What do you mean by correlation ? Write the utility of this method of statistical analysis in pharmacy.

- (e) Write the assumption of t-test and methods of calculation of t-value for paired and unpaired data.
- (f) Define probability. State the addition and multiplication rule of probability.
- (g) Sex of birth and Rh factor are independent events and occur in any child. What will be the probability of a child being male and Rh positive ?
- (h) Give an estimate of the cost to be incurred on raw materials, instrumentation and on *in vivo* tests for submission to a funding agency for grant of a research proposal.
- (i) Describe the different methods of data collection mentioning their merits and demerits.
3. Discuss the important consideration to be made during the selection of a research problem. Suggest a research problem from your area of interest giving justification for its selection.

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Or

Justify the necessity of presenting research work by oral presentation mode. Discuss the important aspect of this mode of presentation.

4. (a) Describe the importance of use of computer packages in research documentation.

(b) With a suitable example, give the application of experimental designs in pharmaceutical research.

5+5=10

5. (a) How will you work out the following statistical measures often used in research?

(i) Regression equation of X on Y.

(ii)  $3^2$  - factorial design.

(b) What are the importances of statistical optimization of the pharmaceutical products during development of dosage forms?

5+5=10