

UKA TARSADIA UNIVERSITY

M.Pharm. (QA) / M.Pharm. (Pharmaceutics) / M.Pharm. (Pharmacology) / M.Pharm. (PA)

040030201/040040201/040050201/040060201 - Research Methodology,

Experimental Design and Patent

Duration: 3 Hours

Max. Marks: 70.

Instructions:

1. Attempt all questions.
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.
5. Draw diagrams/figures whenever necessary.

Section-1

Q-1 (A) Do as directed:

[07]

- I) How is impact factor of a journal calculated?
- II) What is H-index?
- III) Define hypothesis.
- IV) Write any two unique identifiers used to search literature.
- V) What are visual aids?
- VI) Enlist any four citation styles.
- VII) What do you understand by extraneous variable?

Q-1 (B) Answer the following in brief: (Any 4)

[08]

- I) Differentiate research proposal and research report.
- II) Name the different sources of literature for research work.
- III) What are deductive and inductive thinking?
- IV) How can you use your voice effectively for better oral communication?
- V) What is meant by accuracy and reproducibility of an experiment?
- VI) Write the significance of documentation during ongoing research.

Q-2 Answer the following:

[10]

- A) Assume you have completed your PG dissertation work. Write an outline of research report on your dissertation.

OR

- A) Write a note on the various types of research.
- B) Write the importance of literature review. Explain any one method of recording the literature.

OR

- B) Explain the different types of hypothesis and their characteristics.

Q-3 Answer the following in detail. (Any 2)

[10]

- A) What is a research problem? Describe the process for defining a research problem.
- B) What is research? Explain the different objectives of research.
- C) Discuss the features of an effective oral presentation.

Section-2

Q-4 (A) Do as directed:

[07]

- I) Differentiate constraints and boundaries considering an experimental domain.
- II) What are process variables?
- III) What is meant by revocation of patent?
- IV) What are trademarks? Give an example.
- V) Define copyright.
- VI) It is possible to obtain world patent. Comment.
- VII) What is patent of addition?

Q-4 (B) Answer the following in brief: (Any 4)

[08]

- I) Differentiate replication and repetition of an experiment with an example.
- II) Write main uses of predictive statistical models.
- III) Define qualitative and quantitative factors with reference to DOE.
- IV) Why do we randomize any experiment?
- V) Why is patent system required?
- VI) What is meant by infringement of patent?

Q-5 Answer the following:

[10]

- A) Explain five basic principles of an experimental design.

OR

- A) Write a note on Box-Behnken or Plackett-Burman design.
- B) What are the conditions subject to which patent is granted in India?

OR

- B) Describe the PCT filing procedure and its benefits.

Q-6 Answer the following in detail. (Any 2)

[10]

- A) Write a note on contour plots.
- B) Explain the guidelines for preparing a laboratory notebook.
- C) What are claims? Discuss with examples the different types of claims.