



**HEA-02011242**

Seat No. \_\_\_\_\_

**M. Pharm. (Sem. III) Examination**

**November / December – 2017**

**Paper - VI : Patent, Design of  
Experiment & Biostatistics  
(Interdisciplinary)**

Time : 3 Hours]

[Total Marks : 80

- Instructions :**
- (1) Answer and tie up both the sections separately.
  - (2) Figures to the right indicates marks.
  - (3) Answer any three (03) questions from each section.
  - (4) Question one (1) and question five (5) are compulsory.
  - (5) Draw neat and clean diagrams as required.

**SECTION - I**

- 1 Answer any seven questions out of ten, each carry **7×2=14** two marks :
- (1) What do you mean by patentability of innovation?
  - (2) How WIPO help in patent?
  - (3) Define product patent and process patent.
  - (4) How product patent affect the Indian pharmaceutical market?
  - (5) Discuss the effect of Patent Act 1070 amendment 2005 on the Indian pharmaceutical market.
  - (6) Outline the flow of Patent grant in India.
  - (7) What do you mean by confidence interval?
  - (8) Define mean, mode, and median (with equation if applicable).
  - (9) Discuss GAAT briefly.
  - (10) Define patent claims, dependent claims and independent claims.

- 2** Answer the following :
- (a) Discuss similarity and differences of Indian patent and US patent system. **7**
  - (b) Write a note on Paris Convention. **6**
- 3** Answer the following :
- (a) Write a note on European patent system. **7**
  - (b) Write a note on: Patent Cooperation Treaty and explain its functions. **6**
- 4** Answer the following :
- (a) Describe organization chart and priority document in detail. **7**
  - (b) Describe in detail prior art and body of patent document. **6**

## **SECTION - II**

- 5** Answer any **two** (2) questions from the following, **2×7=14**  
each carry 7 marks :
- (1) Define biostatistics, describe hypothesis in detail.
  - (2) What is 32 full factorial design? How it is useful in pharmaceutical research?
  - (3) Write a note on statistical screening and optimization methods.
- 6** Answer the following :
- (a) Write a note on response surface methodology **7**
  - (b) Enlist different types of ANOVA and briefly describe its application along with example. **6**

- 7 Answer the following :
- (a) Calculate mean, mode, median, variance and standard deviation of following data : 7
- (i) 37, 36, 40, 41, 35, 32, 33, 37, 39
- (ii) 0.71, 0.68, 0.75, 0.73, 0.65, 0.73, 0.79, 0.72
- (b) Write a note on quadratic model. 6
- 8 Answer the following :
- (a) Write a short note on: standard deviation, lack of fit and standard error of mean. 7
- (b) Perform the ANOVA test for following group of data and write the outcome as ANOVA table. 6  
(F critical value for this test is 3.885)

Group-1	Group-2	Group-3
120	165	123
124	170	130
118	174	128
122	166	125
116	171	127