

**M. PHARM. SEM-II (CHOICE BASED CREDIT & GRADE SYSTEM)
: SUMMER - 2018**

SUBJECT: ADVANCED PHARMACEUTICAL BIOTECHNOLOGY-II

Day : **Tuesday**
Date : **03/07/2018**

S-2018-4002

Time: **10.00 AM to 01.00 PM**
Max. Marks: 60.

N.B.:

- 1) Attempt any **THREE** questions from Section-I and any **THREE** questions from Section-II.
 - 2) Both the sections should be written in **SEPARATE** answer books.
 - 3) Figures to the **RIGHT** indicate full marks.
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SECTION-I

- Q.1** Give important differences in polyclonal and monoclonal antibodies. Give (10) significance of each of these antibodies.
- Q.2** Describe various cells involved in immune response. (10)
- Q.3** Write an essay on immunoglobulin to explain hyper variability in their structures. (10)
- Q.4** Write short notes on any **TWO** of the following: (10)
- a) Phagocytosis
 - b) Multiplexed vaccines
 - c) ELISA
 - d) Apoptosis.

SECTION-II

- Q.5** Discuss merits and demerits of enzyme immobilization. Describe a few important (10) techniques of enzyme immobilization.
- Q.6** What are enzyme inhibitors? How they may affect enzyme action? (10)
- Q.7** Give an outline of downstream process involved in purification of recombinant (10) protein.
- Q.8** Write short notes on any **TWO** of the following: (10)
- a) Bioreactor
 - b) Techniques of sterilization
 - c) Sources of enzymes
 - d) Strain improvement.

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