

B. PHARMACY FOURTH YEAR FIRST SEMESTER EXAM 2019

PHARMACEUTICS VII

Group A

Full marks 100

Time: Three hours

Answer any five taking at least one from each group

1. Define PCR. Explain process of amplification of DNA by PCR. Explain *Ori C* and DNA melting. Write the role of DNA polymerase III and I in replication. How does DNA polymerase III synthesize DNA with a high level of accuracy? Give the significances of Okazaki fragments. How are both of the DNA strands synthesized together when the enzyme moves in a single direction?

$$2+7+3+2+1+2+3 = 20$$

2. Define genetic engineering. What do you mean by gene expression? Write step-wise in details transcription process. What is called splicing? Give its significances. What do you mean by transposonal elements? Write their significances. How are mRNA protected at 3' and 5' ends in vivo?

$$2+2+5+1+2+1+2+5 = 20$$

3. What do you mean by recombinant DNA technology? What is cloning? Enumerate the characteristics of an ideal vector and explain the importance of each characteristic. What is gene therapy? Write its major limitations. What do you mean by antisense therapy? How will you design antisense oligos for therapeutic purposes?

$$1+2+7+1+3+2+4 = 20$$

Pharmaceutics – VII

Time: three hours

Full Marks 100

Answer any *five* questions taking at least one from each group.

GROUP - B

Q4. Briefly describes the factors to be considered by the F and D scientists during designing the following formulations:

- i. Inject able solutions
- ii. Ophthalmic suspensions

(20)

- Q.3
- i. How multiple emulsions may act as controlled release formulations?
 - ii. What are the principle involved in the process of Iontophoresis and Sonophoresis?
 - iii. Explain why in the favourable condition amphiphilic molecules form micelles whereas phosphatidic acid derivatives form liposomes?

(5+8+7)

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**SUBJECT PHARMACEUTICS - VII
GROUP C**

6. Write down the dissolution acceptance criteria. What are the objectives of dissolution profile comparison? Deduce f_1 and f_2 . What do you understand by "Biowaiver"? What criteria must it fulfil to fit such a condition? 4+4+5+3+4
7. Define and classify the various types of packaging. Elaborate the various materials and containers used in packaging. Write a note on the type of packages commonly used in Pharmaceutical Industry 5+10+5