

**B TECH**  
**(SEM I) THEORY EXAMINATION 2018-19**  
**INTRODUCTION TO BIOSCIENCES**

**Time: 3 Hours**

**Total Marks: 100**

**Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.

**SECTION A**

**1. Attempt all questions in brief. 2 x10 = 20**

- a. Define replicons and its application.
- b. Give the function of topoisomerase.
- c. What are okazaki fragments?
- d. Define vacuoles and vesicles.
- e. Who call as “power house of cell” and its functions?
- f. Give the application of DNA finger printing.
- g. Define PCR and it’s in biotechnology.
- h. What is the role of EtBr in gel electrophoresis?
- i. Explain codon and its role.
- j. Define gene therapy and its area of applications.

**2. Attempt any three of the following: 10 x 3 = 30**

- a. Define contraception, its various methods and also discuss advantages and disadvantages of it.
- b. Explain menstrual cycle in detail.
- c. Discuss female reproductive system in detail, draw diagram if necessary.
- d. What do you understand by the term “Gametogenesis” explains in detail?
- e. (i) Differentiate between eukaryotic and prokaryotic cell.  
(ii) Write a short note on “Endoplasmic reticulum”.

**SECTION C**

**3. Attempt any one part of the following: 10 x 1 = 10**

- (a) Define fertilization, different stages pregnancy along with embryonic development in human.
- (b) Explain various steps of glycolysis cycle along with the use of various enzymes.

4. **Attempt any *one* part of the following:** **10 x 1 = 10**  
(a) Explain the principle, working of electrophoresis along with the function of running buffer.  
(b) Illustrate G<sub>1</sub> and G<sub>2</sub> stages of interphase along with the proper diagram if needed.

5. **Attempt any *one* part of the following:** **10 x 1 = 10**  
(a) Define DNA finger printing, its technique and applications.  
(b) Discuss various steps involved in krebs cycle.

6. **Attempt any *one* part of the following:** **10 x 1=10**  
(a) What is human genome project, various technique used and application of it?  
(b) Write a short note on polymerase chain reaction.

7. **Attempt any *one* part of the following:** **10 x 1 = 10**  
(a) What is central dogma, explain in detail?  
(b) Explain RNA, its structure and functions.

