FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

SCHOOL OF LIFE SCIENCES

DEPARTMENT OF MICROBIOLOGY

FIRST SEMESTER EXAMINATION 2016/2017 SESSION

COURSE CODE: MCB 516

COURSE TITLE: INTRODUCTION TO BIOTECHNOLOGY (3 UNITS)

CLASS: 500 LEVEL

TIME: 2 HOURS

INSTRUCTIONS: Answer **Four Questions** in All; **Two** from each Section. Question one (1) is compulsory from section A.

Time Allowed: 2 Hours

SECTION A

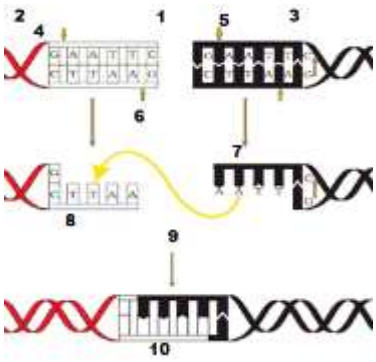

Figure 1

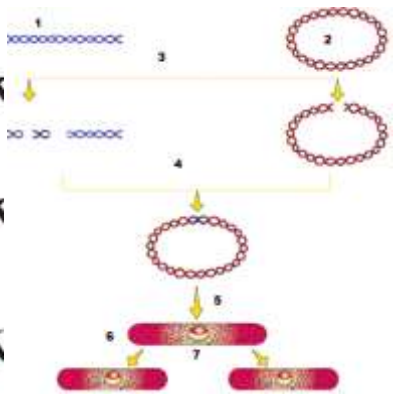

Figure 2

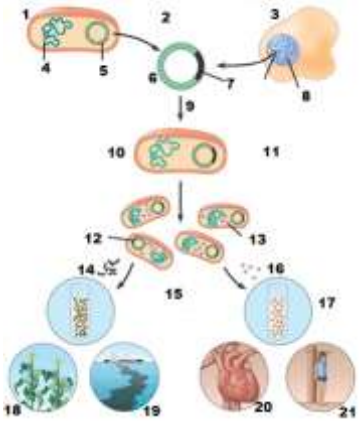

Figure 3

1(a). As a student of biotechnology, provide a suitable title for the above Figures 1-3 in biotechnology and genetic engineering.

1(b). Name 1-10, 1-7 and 1-21 in Figures 1-3 respectively.

1(c). Mention the salient feature universal to the three (3) figures and its significance in biotechnology and genetic engineering.

2. A case of defective coagulation factor gene was reported to the school clinic from a student. Observable signs and symptoms were detected by the doctor.

   (a) As a student of biotechnology, kindly explicate to the doctor on how to treat or cure the disease condition using genetic engineering and biotechnology techniques.
   (b) What is the name of this genetic defect?

3. Write a compendium of historical advancement and important milestones of biotechnology with regards to time period and major break-through. (To be answered in a tabular form).

SECTION B

4(a). What is Enzyme Immobilization?

4(b). List the three major groups of supports for Enzyme Immobilization and three examples for each support.

4(c). List five methods of Enzyme Immobilization.

5(a). Give three examples and three characteristics of secondary metabolites

5(b). Discuss any three of the following terms: (i) Bioconversions (ii) Induction (iii) Phosphate regulation (iv) End product regulation (v) Catabolite regulation.

6(a). What are the necessary steps needed for the purification of a product?

6(b). List three types of each of the following product purification operation:

(i) Chromatography (ii) Centrifuges.