

BACHELOR OF SCIENCE (BIOTECHNOLOGY) (2010 COURSE)

T.Y. B.Sc. (Biotechnology) Sem-VI : WINTER :- 2021

SUBJECT: CLINICAL BIOTECHNOLOGY

Day : Monday

Date 7/2/2022

W-6291-2021

Time : 10:00 AM-01:00 PM

Max. Marks: 80

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) All questions carry **EQUAL** marks.
- 3) Write both sections on **SEPARATE** answer sheets.
- 4) Draw well labeled diagrams and structures **WHEREVER** are necessary.

SECTION – I

Q.1 a) Attempt any ONE of the following: (06)

- i) State and explain the diagnostic role of enzymes in kidney and pancreatic disorders.
- ii) Describe the quantitative estimation of blood urea, creatinine and uric acid.

b) Attempt any TWO of the following: (10)

- i) Describe the Liver function tests and their significance in clinical diagnosis.
- ii) Define Anemia. Differentiate between iron deficiency anemia and pernicious anemia.
- iii) Which factors are associated with blood clotting? Give a brief account of various diseases associated with blood clotting.

Q.2 Write short notes on any FOUR of the following: (16)

- a) Hemolytic and hepatic jaundice
- b) Na^+ , K^+ and calcium oxalate
- c) RBC metabolism
- d) Significance of hemogram
- e) Clinical significance of ESR

SECTION – II

Q.3 a) Attempt any ONE of the following: (06)

- i) Differentiate between innate and adaptive immunity.
- ii) Explain various classes of immunoglobins along with clonal selection theory.

b) Attempt any TWO of the following: (10)

- i) Explain development and maturation of T – lymphocytes.
- ii) Discuss – histochemistry and immunohistochemistry technique.
- iii) Give an account of the structural and functional features of MHC class I molecule.

P.T.O.

- Q.4** Write short notes on any **FOUR** of the following: **(16)**
- a) TCR
 - b) Spleen
 - c) Affinity and avidity
 - d) ELISA
 - e) Subsets of T – helper cells

- Q.5** Attempt any **EIGHT** of the following: **(16)**
- a) Expand the terms MALT and TCR.
 - b) Fill in the blanks:
 - i) _____ example of adjuvant.
 - ii) Antibodies are synthesized in _____.
 - c) Name the primary lymphoid organs.
 - d) Name the different types of ELISA.
 - e) Functions of cytokines.
 - f) What are haptens?
 - g) What are T-dependent and T – independent antigens?
 - h) Differentiate TH 1 and TH 2.
 - i) Explain the polymorphism in MHC molecule in brief.
 - j) What are granzymes and perforins?

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