

This question paper contains 4 printed pages]

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S. No. of Question Paper : 7882

Unique Paper Code : 2493010011

Name of the Paper : **Molecular Basis of Non-Communicable  
Human Disease**

Name of the Course : **B.Sc. (Hons.) Biochemistry (NEP/CBCS-LOCF)**

Semester : **VIII**

Duration : **2 Hours**

Maximum Marks : **60**

*(Write your Roll No. on the top immediately on receipt of this question paper.)*

There are **6** questions.

Attempt **4** questions in all. *All* questions carry equal marks.

Question No. **1** is compulsory.

1. (a) Justify the statement : 2×6=12

- (i) Pulmonary edema occurs in left ventricular congestion.
- (ii) Increased oxidative stress predisposes to atherosclerosis.
- (iii) Patients who have Bulimia can get an electrolyte imbalance.
- (iv) Tri-nucleotide expansion of the Huntington gene leads to misfolding of the protein.
- (v) Mutation in the Von Willebrand factor leads to hemophilia.
- (vi) The BUN : Creatinine goes beyond 20 : 1 in prerenal acute renal failure.

P.T.O.

(b) Expand the following and explain any *two* of the following conditions in brief :

1.5×2=3

(i) PCOS

(ii) PKU

(iii) CFTR

2. (i) Name the virus and its **2** oncogenes responsible for causing Cervical Cancer. How do these oncogenes affect the host cell ?

(ii) Draw a schematic diagram showing the malignant transformation of carcinoma from a normal cell.

(iii) What are the different types of Acute kidney failure ? List a specific causative factor for each type of acute kidney failure.

(iv) How the proteasome is actively involved in removing misfolded proteins ?

5,4,3,3

3. (i) Explain the the biochemical basis for the action of the following drugs :

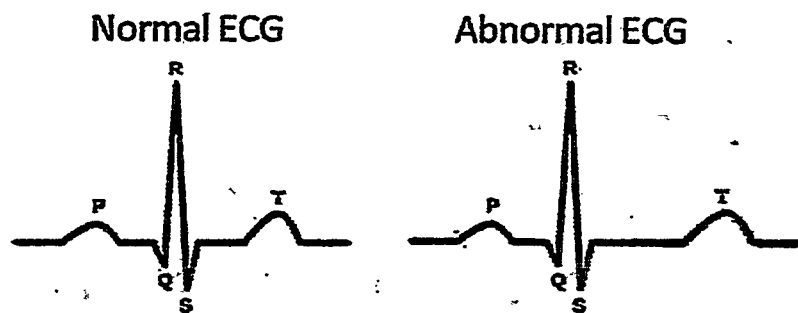
(a) Metformin

(b) Nitro-glycerine

(c) Warfarin

(d) Cimetidine

- (ii) Identify the disease or syndrome from the given ECG profiles. Describe the causes and symptoms of this disease.



12,3

4. Differentiate between the following (any five) :

5×3=15

- (i) Heart attack and heart failure
- (ii) Tumor-specific marks and tumor-associated markers
- (iii) VIA and VILI
- (iv) COPD and ARDS
- (v) Orexins and Anorexins
- (vi) Classical and non-classical haemophilia
- (vii) Chronic Bronchitis and emphysema

5. Write short notes on the following :

3×5=15

- (i) Maple Syrup Disease
- (ii) Thalassemia
- (iii) Irritable down syndrome
- (iv) Alkaptonuria
- (v) Biomarkers for early detection of Breast and prostate cancer.

6. (i) Explain the molecular basis of the following diseases :

- (a) Alzheimer's disease
- (b) Sickle Cell Anemia
- (c) Ischemic heart disease
- (d) Prion diseases

(ii) Name the biomarkers used to detect the following cancers :

- (a) Breast cancer
- (b) Prostate cancer
- (c) Hepatic cancer

12,3