

**2020**

**BIOCHEMISTRY — GENERAL**

**Paper : SEC-A-2**

**(Clinical Biochemistry)**

**Full Marks : 80**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

1. Answer **any ten** questions :

2×10

- (a) LDH has several clinically important isozymes.
- (b) What are systole and diastole?
- (c) What are anticoagulants? Give examples.
- (d) What is the significance of serum and urine Creatinine levels?
- (e) Name two pathologic conditions in which serum lipase activity is found to rise.
- (f) What are conjugated and unconjugated bilirubin?
- (g) Differentiate between plasma and serum.
- (h) Name two biochemical parameters for cardiovascular disease.
- (i) Give an example of  $\gamma$ -carboxylation.
- (j) How would you collect blood for estimation of  $\text{Ca}^{2+}$ ? What precaution is mandatory for collection of such estimation?
- (k) What is the composition of bile?
- (l) What is the function of picric acid in creatinine estimation in serum?
- (m) What is isoenzyme?
- (n) What is megaloblastic anemia?
- (o) What is the significance of troponin as cardiac marker?

2. Answer **any four** questions :

- (a) The human circulatory system is a double system— explain with diagram. 5
- (b) What is the function of 4-amino antipyrine (4AAP) in blood glucose estimation by GOD-POD method? 5
- (c) (i) What are the major functions of liver?  
(ii) What is the normal range of cholesterol in blood? Write one diseased condition when cholesterol level is elevated. 3+2

**Please Turn Over**

- (d) (i) What is the significance of elevated alkaline phosphatase and acid phosphatase level?  
(ii) What is the normal range of serum bilirubin? (2+2)+1
- (e)  $\text{Ca}^{2+}$  ion plays an important role in blood clotting.— Explain. 5
- (f) What are the biomarkers of liver disorder. 5

3. Answer **any four** questions :

- (a) (i) Describe the method for prevention of hemolysis after blood collection.  
(ii) What are important serum Lipoproteins? Give brief clinical significance of each. 5+(3+2)
- (b) (i) Briefly discuss the principle of estimation of triglycerides.  
(ii) What is the main clinical symptom of liver dysfunction and write its cause.  
(iii) What are the factors that may decrease serum  $\text{Na}^+$ ? What is its normal range? 5+2+(2+1)
- (c) (i) Write down the principle for determination of serum creatinine.  
(ii) What is the clinical significance of creatinine estimation in serum?  
(iii) What are the isozymes of creatine kinase and lactate dehydrogenase? 3+2+5
- (d) (i) What are the major precautions taken during blood transfusion?  
(ii) What is the clinical importance of CPK?  
(iii) Briefly explain cardiac markers mentioning their functions and significance. 2+3+5
- (e) (i) Why Rh factor is important in blood group analysis?  
(ii) What is the significance of increase or decrease of SGOT and SGPT?  
(iii) Aspirin is used to prevent thromboses in patients prone to coronary artery diseases. Why?  
(iv) What is meant by blood pressure? What is its clinical significance? 2+(1½+1½)+3+2
- (f) Give examples of the liver function tests based on 2×5
- (i) excretory function of liver
  - (ii) serum enzymes
  - (iii) metabolic capacity of liver
  - (iv) synthetic functions of liver
  - (v) detoxification function of liver.
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