V(5th Sm.)-Biochemistry-G/SEC-A-2/CBCS

# 2021

## **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 :

- (a) Name and state the function of any one clinically important enzyme.
- (b) Differentiate between plasma and serum.
- (c) What is the normal range of SGPT and SGOT?
- (d) State the significance of increased level of ALP.
- (e) Is there any method to store blood and serum?
- (f) What are the major components of urine?
- (g) What is meant by direct and indirect bilirubin?
- (h) Why HDL is considered as good fat?
- (i) What is creatinine clearance test?
- (j) Mention the parameters that are estimated in LFT.
- (k) State two clinical conditions associated with increased serum cholesterol level.
- (l) What is oral glucose tolerance test?

#### 2. Answer any four questions :

- (a) What is diabetes mellitus? How many ways can it be classified? What are the clinical and biochemical symptoms associated with it? 1+1+3
- (b) What is hypercholesterolemia? Mention its causes. What is atherosclerosis? 2+1+2
- (c) State the principle of estimation of glucose by GOD-POD method. Write down the reaction mechanism. 3+2
- (d) Write down the safety measures that need to be followed while handling biological sample. How is whole blood collected? 3+2
- (e) What do you mean by blood coagulation? Briefly mention the process of blood coagulation. What anti-coagulants can you use *in vitro* to prevent it after blood collection? 2+2+1

**Please Turn Over** 

2×10

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#### 3. Answer any four questions :

- (a) (i) What is first aid? What is its significance?
  - (ii) Discuss tests to assess glomerular filtration rate.
  - (iii) Briefly state the principle of dipstick method for urine analysis. (2+3)+2+3

(2)

(b) A woman's fasting lipid profile is

Total cholesterol - 5.9 mmol/L

HDL-cholesterol – 1.1 mmol/L

Triglyceride – 3.4 mmol/L

- (i) Comment on the patients lipid profile. How would one calculate the woman's cardiovascular risk?
- (ii) How many isozymes of LDH are present in blood? Comment. (2+3)+5
- (c) (i) What is heart rate? What is cardiac output?
  - (ii) How is triglyceride estimated in serum? Write down the principle.
  - (iii) Under what conditions does serum creatinine level elevated? (2+2)+4+2
- (d) (i) Mention the diagnostic importance of serum transaminase.
  - (ii) Outline the principles of quality management for clinical biochemistry laboratory.
  - (iii) What will you interpret if the appearance of urine is cloudy or opalescent? 4+4+2
- (e) (i) What is the significance of estimation of troponin in cardiovascular disease?
  - (ii) Name the parameters that are measured to diagnose myocardial infarction.
  - (iii) Briefly describe the principle of urea estimation. 3+3+4