

2021

**BIOCHEMISTRY — HONOURS**

**Fifth Paper**

**(Module - X)**

**Full Marks : 50**

*The figures in the margin indicate full marks.*

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

Answer **question no. 1** and **any two** more questions, taking **one** from each **Unit**.

1. Answer **any ten** questions : 2×10

- (a) What is glycated haemoglobin? What is its significance?
- (b) What is the significance of troponin as cardiac marker?
- (c) Differentiate between active transport and passive transport.
- (d) What is the normal range of cholesterol in blood? Write one diseased condition when cholesterol level is elevated.
- (e) What is the difference between autocrine and paracrine signalling?
- (f) Write two key events during anaphase of mitotic cell division.
- (g) Differentiate between symport and antiport with one example of each.
- (h) Give two examples of lipid storage disease and write their cause.
- (i) Write the disease states of hypo- and hyper-adrenalism.
- (j) What is Cori's disease? Write its cause.
- (k) What are the major functions of liver?
- (l) Name the disease in which serum lipase is elevated and give its normal range.
- (m) What is cell culture? Why CO<sub>2</sub> (5%) incubator is important for cell culture?
- (n) What is gout? How can it be treated?
- (o) What is megaloblastic anaemia?

**Unit - 1**

2. (a) What are G-proteins and GPCRs? How does adenylate cyclase enzyme take part in signal transduction cascade mechanism?
- (b) Mention different stages of mitosis. What are the main characteristic features of the last stage?

**Please Turn Over**

- (c) Describe the role of phospholipase C in signal transduction with schematic diagram. (2+3)+(2+3)+5
3. (a) What is the role of Na<sup>+</sup>-K<sup>+</sup> ATPase in active transport? Write the names of two Na<sup>+</sup>-K<sup>+</sup> ATPase inhibitors.
- (b) What are steroid hormones? What is their mechanism of action?
- (c) Name three hormones which act through c-AMP as the second messenger and write the functions of them. (3+1) +(2+3)+ (3+3)

**Unit - II**

4. (a) What kind of activity is shown by the blood clotting factors? How does calcium help blood clotting?
- (b) Discuss about the clinical significance of SGOT and SGPT.
- (c) What is hyperkalaemia? Write its symptoms.
- (d) Lipoproteins play a crucial role in atherosclerosis. – Justify. (1+3)+(2+2)+(2+2)+3
5. (a) How blood group analysis is carried out? What are the differences between different blood groups? What is Rh factor?
- (b) What is goitre? Why is it caused?
- (c) What are the major precautions taken during blood transfusion?
- (d) Name the important biomarkers of renal function test. Why albumin level is increased in the blood? (2+2+1) +(2+2) +2+(2+2)
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