Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. Allied Health Sciences Degree Examination - 09-May-2025

Time: Three Hours **Max. Marks: 100 Marks**

BIOCHEMISTRY

(**RS-3** – B.Sc Cardiac Care Technology, Perfusion Technology, Renal Dialysis Technology, Respiratory Care Technology, Neuro Sciences Technology, Anesthesia Technology, Operation Theatre Technology, Emergency and Trauma Care Technology)
(**RS-4** – B.Sc Medical Laboratory Technology, Medical Imaging Technology and Radiotherapy Technology) Anesthesia and Operation Theatre Technology

Q.P. CODE: 3263

(QP contains two pages)

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Second Question Choice) **2 x 10 = 20 Marks**

1. Explain the steps of urea cycle. Give its energetic. Add a note on the regulation of the cycle.

2. Describe the sources, daily requirement, biochemical functions and deficiency manifestations of iron**.**

   Or

   Give a detailed account of the β- oxidation of palmitic acid and its energetic.

SHORT ESSAYS (Question No 5 & 10 choice) **10 x 5 = 50 Marks**

3. Define radioactive isotopes. Discuss their applications in medical field.

4. What are Essential fatty acids (EFA)? Explain their functions and deficiency manifestations.

5. What are carbohydrates? Classify them giving suitable examples.

   Or

   What is transamination? Give the salient features of transamination reactions. Mention two transaminases of diagnostic importance.

6. Define amino acids. Explain the amino acid classification based on nutritional importance.

7. Describe the structure of t-RNA. Discuss its functions.

8. Define enzymes and coenzymes giving two examples each. Add a note on proenzymes.

9. Discuss the functions and deficiency manifestations of Niacin.

10. What is meant by Standard solution? Give the stepwise procedure for preparing glucose standard solution having strength of 100 mg/dl.

    Or

    What is pellagra? Describe the causes and symptoms.

11. What is BMR? Comment on the reference values. Discuss the factors affecting BMR.

12. Define SI units. Classify them with suitable examples.

SHORT ANSWER (Question No 15 & 20 choice) **10 x 3 = 30 Marks**

13. Calculate the molarity of concentrated HCl.

14. Normal levels for sodium, potassium and chloride in serum. Mention three causes of hyponatraemia.

15. List the indications for body fluid dilution. How is 1 in 500 serial dilution of a serum carried out?

    Or

    List the beneficial role and adverse effects of dietary fibres.

16. Draw the structure of purine and pyrimidine bases. List the minor purine and pyrimidine bases.

17. Metabolic acidosis-definition, causes and biochemical findings.

18. Absorption of carbohydrates by facilitated transport.

19. Wald's visual cycle.

20. Significance of HMP shunt pathway.

    Or

    Deficiency manifestations of folic acid.

21. Reasons for ordering urinary acidification test. How is it carried out?

22. Causes and management of chemical hazards in healthcare setup.

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