

B.Sc.(N) [Post Basic (1st Year)]

BF/2010/05

Biochemistry & Biophysics

[New Scheme-w.e.f. 2007 admission]

M.M. : 75

Time : 3 Hours.

Note: Attempt Three questions from each Section. Question No. 1 of each Section is Compulsory.

USE SEPARATE ANSWER SHEETS FOR EACH SECTION.

SECTION-A (Biochemistry)

[37.5 marks]

1.
 - a. Define P^H, acid and buffer.
 - b. Explain metabolic and biochemical basis of hypoglycemia.
 - c. Write a short note of protein-energy malnutrition.
 - d. Discuss briefly about Gout.
 - e. Describe the difference between serum and Plasma.
 - f. Role of water in the body.
 - g. Define glycogenesis and glycogenolysis.

[2.5x7=17.5]
2.
 - a. What are lipoproteins. Describe their functions. [5]
 - b. Describe the role of nucleic acids in protein synthesis. [5]
3. **Write notes on any TWO:** [5x2=10]
 - a. Synthesis and utilization of ketone bodies.
 - b. Abnormal constituents of urine.
 - c. Absorption of fats.
4. Describe citric acid cycle along with its energetics.

[10]

P.T.O.

SECTION-B
(Biophysics)

[37.5 marks]

1. **Explain briefly any FIVE of the following:** [5x3=15]
- Barium sulphate is used to outline organs.
 - Heavy objects should be lifted with bent knees.
 - Use of Ultraviolet light to detect ringworm infection.
 - Presence of surfactant in lungs.
 - Rubber bulb of the medicine dropper is squeezed before immersing it into the medicine bottle.
 - Cotton clothing should be worn in operating theatres.
 - Use of hot application in abdominal distention.
 - Hot water is more effective than cold water as a cleaning agent.
2. a. How does sound wave travel? Explain the variation in Intensity and pitch of sound. [4^{1/2}]
- b. What is meant by ultrasound and how is it produced? Discuss the clinical uses of ultrasound. [8]
- OR**
3. a. Natural uranium is a very long half-life isotope. Explain the relationship between activity and half-life. [4^{1/2}]
- b. Describe two uses of radioactivity. Do these have any health implications and if so what are they. [8]
4. **Write short notes on any TWO:** [2x5=10]
- Involvement of pressure in aspiration.
 - Regulation of body temperature.
 - Heart sounds are produced only by the closer of the heart.
 - Eye as a lens.
 - Relationship between stimulus provided and muscle contraction.
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