

M.Sc. 1st Semester Examination, 2024

HUMAN PHYSIOLOGY

PAPER – PHY-103

Full Marks : 25

Time : 1 hour

Answer all questions

The figures in the right hand margin indicate marks

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

GROUP – A

Answer any two questions of the following : 2 × 2

1. What is EGG ? How could you calculate the open quotient during EGG ? 1 + 1
2. Mention the types of man-made piezoelectric elements. 2

(Turn Over)

(2)

3. Write the principle of Carnot's cycle. 2
4. What is Poise ? What is Reynolds's number ?
1 + 1

GROUP-B

Answer any *two* questions of the following : 4×2

5. Briefly describe the "Aerodynamic theory" of phonation in the light of Bernoulli law. How could you calculate glottal resistance ?
3 + 1
6. Describe the mechanism of UV-induced immunomodulation in the human body. 4
7. What is critical closing pressure ? Mention the factors that affect it. 2 + 2
8. Discuss the applicability of First Law of Thermodynamics with reference to the living system. What is a adiabatic system ? Give example. 2 + 1 + 1

(3)

GROUP – C

Answer any *one* question of the following : 8×1

9. What is therapeutic ultrasound? Describe the non-thermal effects of ultrasound therapy. Describe the mechanism of UV-induced immunomodulation in the human body.
 $1 + 4 + 3$
10. Discuss the applicability of Pouseuilli's equation with respect to hemodynamics. Find out whether the flow in a pipe having a diameter of 20 mm, fluid velocity of 2.5 m/s, 900 kg/m^3 as the relative density and the viscosity of the fluid as 0.4 Ns/m^2 , is laminar or turbulent.
 $4 + 4$

[Internal Assessment – 5 Marks]
