

**2021**

**PHYSIOLOGY — HONOURS**

**Paper : CC-7**

**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.*

**Group - A**

1. Answer **any five** questions.

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|--|-----|
| (a) What is asphyxia?  | 2   |
| (b) Mention the location and functions of clara cell.                      | 1+1 |
| (c) Mention the location of type J receptors.                              | 2   |
| (d) State the origin and innervation of 'Phrenic nerve'.                   | 2   |
| (e) Distinguish between the physiological cause of asthma and emphysema.   | 2   |
| (f) What is FEV <sub>1</sub> ? What is its significance?                   | 1+1 |
| (g) Distinguish between adult haemoglobin and foetal haemoglobin.          | 2   |
| (h) What is ventilation-perfusion ratio?                                   | 2   |
| (i) State the identifying characters of histological structure of Trachea. | 2   |
| (j) Distinguish between Tachypnoea and hyperventilation.                   | 2   |

**Group - B**

2. Answer **any two** questions.

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|---|-------|
| (a) Describe the role of 'Chloride shift' in the transport of CO <sub>2</sub> from tissue to lungs. | 5     |
| (b) What is oxyhaemoglobin dissociation curve? Mention the factors affecting this curve.            | 1+4   |
| (c) Describe the molecular mechanism by which carotid and aortic bodies can sense hypoxia.          | 5     |
| (d) What are Bohr effect and Halden effect? State their significance.                               | 2½+2½ |
| (e) State the anatomical location and composition of Pontine and medullary respiratory centres.     | 5     |

**Group - C**

3. Answer **any three** questions.

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|--|-----------|
| (a) (i) What is FRC? How can it be measured? What is its normal value? |           |
| (ii) What is closing capacity?   | (2+4+2)+2 |

**Please Turn Over**

- (b) (i) State different components of static spirogram and mention their normal values.  
(ii) What do you mean by 'Bucket handle movement' and 'Pump handle movement' of rib cage. 6+4
- (c) What is hypoxia? Mention different types of it and their physiological effects. 2+4+4
- (d) (i) State the non-respiratory functions of lung.  
(ii) A person's lung volumes were measured and the following results were obtained—  
Vital capacity – 5 lit  
Residual volume – 1 lit  
Expiratory reserve volume – 1.5 lit  
Find FRC and total lung capacity.  
(iii) State the composition of surfactant. 6+2+2
- (e) (i) Mention the Principal and Accessory respiratory muscles of respiration. State their role in quiet and active breathing.  
(ii) Mention the location and function for pulmonary stretch receptor.  
(iii) What is respiratory alkalosis? (3+4)+2+1
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