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34 (1) HPHY 1.2

2022

(Held in 2023)

HUMAN PHYSIOLOGY

Full Marks : 100

Time : Three hours

***The figures in the margin indicate
full marks for the questions.***

1. Answer **any two** of the following : 10×2=20
- (a) Define Anemia. Discuss the clinical classifications and sign and symptoms of it.
 - (b) Define Synapse with proper diagram. Explain the properties of synapse.
 - (c) Define Menstrual cycle. Discuss about various changes during menstrual cycle.

Contd.

2. Answer **any ten** of the following :

5×10=50

- (a) Write the functions of Bile.
- (b) Define hypoxia. Explain its types.
- (c) Discuss ascending tracts of spinal cord.
- (d) What is immunity? Discuss its types.
- (e) Discuss sarcomere.
- (f) Discuss GFR and factors affecting GFR.
- (g) Write about growth hormones.
- (h) Define arterial blood pressure. Discuss about the heart sounds.
- (i) Explain Neuromuscular-junction.
- (j) What is Reflex? Discuss superficial and deep reflexes.
- (k) Define coagulation. Enumerate the factors involved in blood coagulation.
- (l) Discuss the structure of Neuron.

3. Answer **any five** of the following : 2×5=10

- (a) CSF
- (b) Jaundice

(c) Juxtaglomerular apparatus

(d) Diabetes mellitus

(e) Hypertension and its types

(f) Blood-brain-barrier

(g) Define shock and its types

(h) Infertility

4. Choose the correct answer : 1×20=20

(a) Which is the commonest type of synapse in CNS ?

(i) Axosomatic synapse

(ii) Axodendritic synapse

(iii) Axoaxonal synapse

(iv) All of the above

(b) TSH secretion is inhibited by

(i) Dopamine

(ii) Somatostatin

(iii) T₃ and T₄

(iv) TRH

(c) Hypocapnia is usually due to

- (i) Hypoxemia
- (ii) Alkalosis
- (iii) Decreased CO₂ production
- (iv) Alveolar hyperventilation

(d) The term filtration fraction is used to refer

- (i) RPF/GFR
- (ii) GFR/RPF
- (iii) RPF × GFR
- (iv) GFR – RPF

(e) Lung compliance is increased in

- (i) Pulmonary emphysema
- (ii) Pulmonary fibrosis
- (iii) Surfactant deficiency
- (iv) Acute pulmonary edema

(f) The hormone of energy storage is

- (i) Growth hormone
- (ii) Thyroxine
- (iii) Insulin
- (iv) Glucagon

(g) The muscle spindle is not innervated by

- (i) Aα fibre
- (ii) Aγ fibers
- (iii) Ia fibre
- (iv) II fibre

(h) The gate theory of pain was proposed by

- (i) Cannon and Bard
- (ii) Charles Sherrington
- (iii) Wall and Melzack
- (iv) Weber and Fechner

- (i) Pre synaptic inhibition occurs at
- (i) Axo axonal synapse
 - (ii) Axosomatic synapse
 - (iii) Axodendritic synapse
 - (iv) None of the above
- (j) Normal tidal volume is
- (i) 500 ml
 - (ii) 750 ml
 - (iii) 800 ml
 - (iv) 400 ml
- (k) Normally the thyroid gland secretes
- (i) CGRP
 - (ii) PTH
 - (iii) TSH
 - (iv) Calcitonin
- (l) Vit-B₁₂ is mainly absorbed in the
- (i) Terminal ileum
 - (ii) Upper jejunum
 - (iii) Duodenum
 - (iv) Stomach

- (m) In skeletal muscle, thin filaments do not contain
- (i) Actin
 - (ii) Myosin
 - (iii) Sroponin
 - (iv) Sropomyosin
- (n) 'Christmas disease' occurs due to deficiency of
- (i) Factor II
 - (ii) Factor V
 - (iii) Factor VIII
 - (iv) Factor IX
- (o) Most of the iron in the body is present in
- (i) Hemoglobin
 - (ii) Myoglobin
 - (iii) Ferritin
 - (iv) Transferrin

(p) Heart rate is slowed by

- (i) Deep inspiration
- (ii) Bainbridge reflex
- (iii) Increased IC tension
- (iv) Carotid massage

(q) In Nephron, glucose reabsorption occurs mainly in

- (i) Proximal tubule
- (ii) Loop of henle
- (iii) Destal convoluted tubule
- (iv) Collecting duct

(r) The SI unit of pressure is —

- (i) *mmHg*
- (ii) *CmH₂O*
- (iii) Pascal
- (iv) Torr

(s) The light reflex is integrated in the

- (i) Midbrain
- (ii) Frontal eye field
- (iii) Medulla
- (iv) Primary visual area

(t) Sertole cell produce

- (i) Androgen-Binding protein
- (ii) Inhibin B
- (iii) Mullerian inhibiting polypeptide
- (iv) All of the above