Episode No – 32
Telecast: 16/04/2017
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Human Physiology Part - 02

01. *Read the statements A and B Pick the correct option*.
Statement A: *All kinds of movements seen in humans are voluntary in nature*.
Statement B: *All movements are not necessarily locomotion's*.
(1) Both statements A and B are correct.
(2) Statement A is correct and B is incorrect.
(3) Both statements A and B are incorrect.
(4) Statement A is incorrect and B is correct.

02. *A student observes a permanent slide of muscle fibres and records the features like fasciculi, syncytium and non-branching pattern. The muscles observed are:*
(1) smooth muscles
(2) skeletal muscles
(3) cardiac muscles
(4) visceral muscles

03. *Which of the following systems in the body jointly co-ordinate and integrate all the activities of the organs so that they function in a synchronized fashion*?
(1) Neural and Muscular system.
(2) Muscular and Endocrinal system
(3) Neural and Endocrinal system
(4) Neural, Muscular and Endocrinal system.

04. *The somatic and autonomic neural system together constitute*
(1) Central neural system
(2) Peripheral neural system
(3) Sympathetic neural system
(4) Parasympathetic neural system

05. *Hypothalamic neurohormone that inhibit the release of growth hormone from the pituitary is*
(1) GnRH
(2) TSHRH
(3) Oxytocin
(4) Somatostatin

06. The H-zone of myofibril is:
(1) the portion of myofibril between two Z-lines.
(2) the elastic fibre present in the centre of 'I' band.
(3) the thin fibrous membrane that holds the thick filaments in the 'A' band.
(4) the central part of a thick filament not over lapped by thin filament seen in resting state.

07. *The actin myofilament of skeletal muscle fibre is composed of:*
    (1) actin and myosin proteins.
    (2) only actin protein.
    (3) actin, tropomyosin and troponin proteins.
    (4) actin and troponin proteins.

08. *At resting potential the outer surface of axonal membrane is positive and the inner surface is negative. The reasons could be*
    (1) presence of positively charged ions outside and negatively charged proteins inside.
    (2) active transport of ions by Na-K pump which pumps Na^+ and K^+ outside and Cl^- inside.
    (3) active transport of ions by Na-K pump which pumps Na^+ outside and K^+ inside in the ratio of 3:2.
    (4) Passive transport of Na^+ outside and K^+ inside.

09. *Myelin sheath is secreted by*
    (1) Neuron
    (2) Mast cells
    (3) Schwann cells
    (4) Fibroblasts

10. *The only hormone credited with secretion by Pars intermedia of Adenohypophysis is*
    (1) MSH
    (2) TSH
    (3) Oxytocin
    (4) Prolactin

11. *The number of subunits present in troponin protein is:*
    (1) two.
    (2) three.
    (3) four.
    (4) six.

12. *A typical value of resting membrane potential of a neuron is:*
    (1) -55 mV
    (2) -70 mV
    (3) Zero mV
    (4) 30 mV

13. *During propagation of nerve impulse along the length of axonal membrane, the depolarized segment within a fraction of second is restored back to resting potential. This is achieved as a result of*
    (1) Efflux of Na^+ from axoplasm.
    (2) Efflux of Na^+ from axoplasm and influx K^+ into axoplasm.
    (3) Efflux of K^+ from axoplasm.
    (4) Efflux of K^+ from axoplasm and influx Na^+ into axoplasm.

14. *Read the statement A and B and choose the correct option*:
    Statement A: *Releasing and inhibiting hormones of hypothalamus are secreted by* neurons.
    Statement B: *These hormones reach the pituitary gland directly through nerve ending*.

(1) Both statements A and B are correct.
(2) Both the statements A and B are incorrect.
(3) Statement A is correct and B is incorrect.
(4) Statement A is incorrect and B is correct.

15. *The chemical transmitter substance that generates an action potential in the sarcolemma is:*
(1) Dopamine at motor plate end.
(2) Acetylcholine at motor end plate.
(3) Dopamine in the basal ganglia.
(4) Acetylcholine in the cerebral cortex.

16. *Which of the following statement regarding the white muscle fibres are correct*?
i. are also called aerobic muscle.
ii. possess less quantity of myoglobin.
iii. have plenty of mitochondria.
iv. contain high amount of sarcoplasmic reticulum.
(1) all
(2) i and iv
(3) ii, iii and iv
(4) ii and iv

17. *Saltatory conduction of impulses is a characteristic feature of*
(1) Skeletal muscle fibres.
(2) Cardiac muscle fibres.
(3) Myelinated nerve fibres.
(4) Non-myelinated nerve fibres.

18. *If electrical current flows across the synapse, it means*
Statement A: *The pre-synaptic neuron and post-synaptic neuron are separated by a synaptic cleft.*
Statement B: *Impulse transmission is faster compared to a chemical synapse.*
Options:
(1) Both the statement A and B are correct.
(2) Both the statement A and B are incorrect.
(3) Statement A is correct and B is incorrect.
(4) Statement B is correct and A is incorrect.

19. *Which hormone is known to stimulate a vigorous contraction of uterus at the time of child birth, and milk ejection from the mammary glands*?
(1) Vasopressin
(2) Gonadotropins
(3) Estrogen
(4) Oxytocin

20. Total n*umber of bones that make up human skeleton is*
(1) 204

(2) 205
(3) 206
(4) 207

21. *What is incorrect about human skeleton*?
    (1) The axial skeleton comprised of 80 bones.
    (2) Skull is dicondylic.
    (3) Sternum is a part of appendicular skeleton.
    (4) Thigh bone is the longest bone.

22. *Pick the incorrect statement:*
    (1) Chemical synapses are characterised by the presence of synaptic cleft unlike electrical synapses.
    (2) Chemical synapses are more common whereas electrical synapses are rare in the human body.
    (3) The transmission of impulse in electrical synapses is similar to impulse transmission along a single axon.
    (4) Neuro-transmitters are always excitatory and are released from axon hillock of a presynaptic neuron.

23. *Pick the correct statement:*
    (1) Neuro-transmitters are associated with both electrical and chemical synapses.
    (2) The synaptic cleft of a chemical synapses are fluid filled spaces.
    (3) Impulse transmission across the synapses is multidirectional.
    (4) Acetylcholine is an inhibitory transmitter and GABA is excitatory transmitter.

24. *Melatonin is associated with all the following except*
    (1) helps in maintaining normal sleep-wake cycle / diurnal cycle.
    (2) helps in maintaining body temperature.
    (3) influence metabolism, pigmentation, menstrual cycle and defence capability.
    (4) regulates blood calcium levels.

25. *Which is the U-shaped bone present at the base of the buccal cavity*?
    (1) Malleus
    (2) Mandible
    (3) Maxilla
    (4) Hyoid

26. *Read the statements A and B and choose the correct option*:
    Statement A: *All the ribs articulate with vertebral column but not with sternum.*
    Statement B: *Human ribs are called bicephalic as they have two articulation surfaces one on dorsal surface and another on ventral surface*.
    (1) Both the statements A and B are correct.
    (2) Both the statements A and B are incorrect.
    (3) Statement A is correct and B is incorrect.
    (4) Statement A is incorrect and B is correct.

27. *The connective tissue membranes that surround the brain and spinal cord are called:*
    (1) pericardium
    (2) pleural membranes
    (3) meninges
    (4) peritoneum

28. *Cerebral aqueduct is a:*
    (1) nerve fibre tract that interconnect different regions of the brain.
    (2) canal that passes through mid-brain.
    (3) opening of cranium.
    (4) four rounded swellings of mid brain.

29. *Which of the following statement about Thyroid gland is incorrect?*
    (1) It is a bilobed largest endocrine gland in the body located on either side of the trachea.
    (2) The follicular cells of thyroid gland secrete Thyroxine, Triidothyronine and Thyrocalcitonin.
    (3) Deficiency of iodine in our diet causes hypothyroidism.
    (4) Thyrocalcitonin regulates blood calcium level.

30. *Myasthenia gravis is an autoimmune disease*:
    (1) affects neuromuscular junction leading to fatigue, weakening and paralysis of skeletal muscles.
    (2) characterised by progressive degeneration of skeletal muscles
    (3) characterised by rapid spasms in muscles due to low Ca^{++} concentration in body fluids.
    (4) usually seen in old characterised by loss of bone mass.

31. *The only movable bone in the skull is:*
    (1) Maxilla.
    (2) Hyoid.
    (3) Malleus.
    (4) Mandible.

32. *Brain stem comprised of:*
    (1) Spinal cord and medulla.
    (2) Medulla and pons.
    (3) Pons and mid-brain.
    (4) Mid-brain and hind brain.

33. *The terms such as black eyes, blue eyes and brown eyes are used with reference to the colour of:*
    (1) Cornea
    (2) Iris
    (3) Eye lens
    (4) Pupil

34. *Which of the following is incorrect with respect to Thyrocalcitonin and Parathormone*?
    (1) Regulate blood calcium level.
    (2) Functions are antagonistic.
    (3) Secreted by Thyroid and Parathyroid respectively.
    (4) Serve similar function.

35. *The part of the scapula that articulates with clavicle is:*
    (1) Glenoid cavity.
    (2) Acromion process.
    (3) Acetabulum cavity.
    (4) Occipital condyle.

36. *The vertebra that articulates with occipital condyl of skull is*:
    (1) Axis.
    (2) Atlas.
    (3) Coccyx.
    (4) Lumbar.

37. *The photoreceptor cells of retina concerned with photopic, scotopic and colour visions are:*
    (1) Photopic and Scotopic → Rods; Colour vision → Cones
    (2) Photopic and Scotopic → Cones; Colour vision → Rods
    (3) Photopic → Ganglion cells; Scotopic → Rods; Colour vision → Cones
    (4) Scotopic → Rods, Photopic and Colour vision → Cones

38. *The area of the eye where most acute vision is formed:*
    (1) Blind spot
    (2) Fovea
    (3) Entire retina
    (4) Cornea

39. *Which one of the following is correct?*
    (1) Insulin is produced by Alpha cells and glucagon by Beta cells of Islet of Langerhans.
    (2) Insulin is a peptide hormone while glucagon is a amino acid derivative.
    (3) Insulin is a hyperglycemic factor and glucagon a hypoglycemic factor.
    (4) Insulin enhances the cellular glucose uptake while glucagon reduces the cellular glucose uptake.

40. *The joints between two vertebrae are:*
    (1) Fibrous joint.
    (2) Cartilaginous joint.
    (3) Pivot joint.
    (4) Hinge joint.

41. The structure concerned with maintenance of body posture and balance is:
    (1) Organ of Corti.
    (2) Vestibular apparatus.
    (3) Cerebrum.
    (4) Limbic system.

42. *Which of the following statement about sex hormones is correct*?
    (1) Testosterone is produced by interstitial cells of testis under the influence of Luteinizing hormone.
    (2) Progesterone is secreted by Corpus luteum and softens ligaments during child birth.
    (3) Estrogen is secreted by both Sertoli cells and Corpus luteum.
    (4) Progesterone produced by Corpus luteum is biologically different from the one produced by placenta.