Most Authentic Questions with verified Answers by AIIMS Rank Holders

Review of AIIMS Nov 2018

By AIIMSonians, For future AIIMSonians

- Answers of clinical scenario based MCQs explained in manner of **"why correct is correct and incorrect is incorrect".**
- Smart strategic study for sure success within stipulated time

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CONTENTS

1. Calculate net filtration with the following data:

P_{GC} = 42 mm Hg
π_{GC} = 12 mm Hg
P_{BC} = 16 mm Hg
Assume that no proteins were filtered.

a. 34 mm Hg
b. Data not sufficient
c. 14 mm Hg
d. 28 mm Hg

Ans. c. 14 mm Hg

$P_{UF} = P_{GC} – P_T – \pi_{GC}$
P_{GC} = Hydrostatic pressure
π_{GC} = Osmotic pressure
P_T = Pressure in Bowman's capsule
P_{UF} = Filtration fraction

2. Hormones which is/are under inhibitory control of hypothalamus:

a. Prolactin
b. Prolactin only
c. GH
d. Both GH and prolactin

Ans. d. Both GH and Prolactin

Ref: Ganong 25th edition pg 324-331

- The hypothalamus controls growth hormone production by secreting growth hormone–releasing hormone (GHRH) which inhibits growth hormone release.
- Prolactin production is inhibited by **Prolactin inhibiting harmone (similar to Dopamine)** secreted by hypothalamus, which inturn inhibit prolactin.

3. Which hormone has permissive role is puberty?

a. Leptin
b. GnRH
c. Insulin
d. GH

Ans. a. Leptin

Ref: Ganong 25th edition Pg. 397

- It has been argued for some time that a critical body weight must normally be reached for puberty to occur. Thus, for example, young women who engage in strenuous athletics lose weight and stop menstruating, as do girls with anorexia nervosa. If these girls start to eat and gain weight, they menstruate again, that is, they "go back through puberty."
- It now appears that leptin, the satiety-producing hormone secreted by fat cells, may be the link between body weight and puberty. However, the way that leptin fits into the overall control of puberty remains to be determined.

4. Erythropoietin acts on:

a. CFU
b. Late erythroblast
c. Normoblast
d. Burst forming unit (BFU)

Ans. a > d. CFU > BFU

Ref: N Geetha Text book physiology pg. 79

- CFU E is sensitive to EPO (which decreases as the cells mature). CFU E contains highest density of erythropoietin receptors on their membrane and they depend on EPO for their survival
- BFU also require EPO only during its later stages of development

5. Which of the following heart sound may be a normal finding during pregnancy?

a. Fixed splitting of S2
b. S3
c. S4
d. Pericardial knock

Ans. b. S3

Ref: 24th edition William Obstetrics pg 59

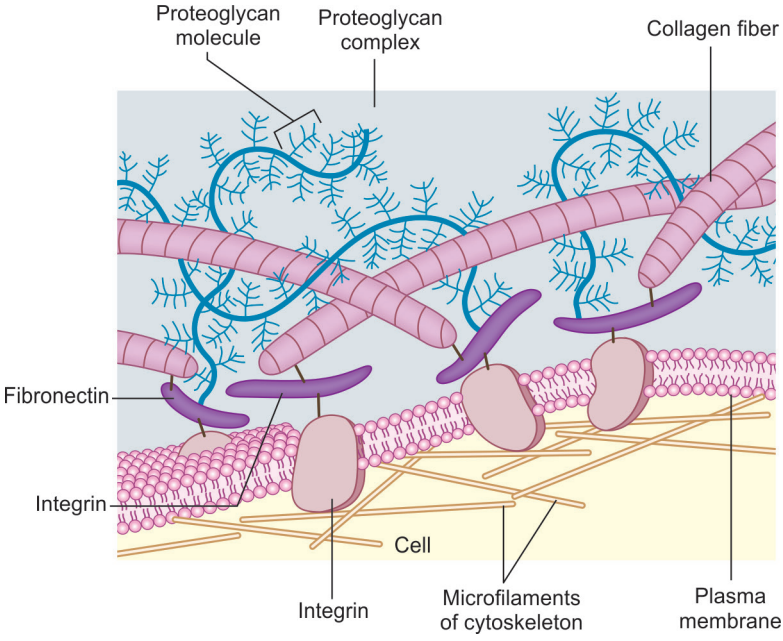
Many of the normal cardiac sounds are modified during pregnancy.

- Splitting of first heart sound and increased loudness of both components
- No change in second heart sound (both aortic and Pulmonary element)
- Loud and easily heard third heart sound
- Systolic murmur intensified during inspiration which disappear shortly after delivery (in 90% of pregnant women)
- Soft diastolic murmur (in 20% of population)
- Continuous murmur in about 10 % of pregnant women

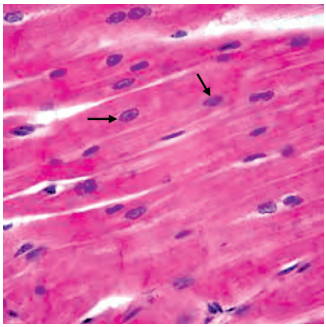
6. Integrin connects actin to which macromolecule in ECM?

a. Laminin
b. Collagen
c. Fibronectin
d. Vitronectin

Ans. c. Fibronectin



7. Which cell organelle is absent in cardiac muscle in the region marked by arrow?



a. Mitochondria
b. Golgi body
c. SER
d. Lysosome

Ans. d. Lysosome

Ref: Ganong's Review of medical physiology 25th edn. page no. 112

- The marking areas are centrally placed nuclei
- The single nucleus of the cardiac muscle cell is located in the centre of the cell.
- Myofibril pass around the nucleus, producing a biconical juxtanuclear region in which the other organelles are concentrated.
- This perinuclear region is rich in mitochondria and contains a Golgi apparatus, glycogen granules, and lipofuscin granules.

8. Fibers reaching directly to Purkinje cell of cerebellum arise from which of the following?

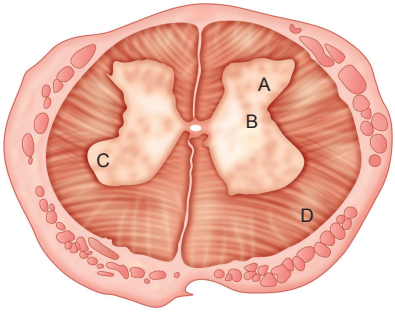
a. Vestibular nucleus
b. Inferior olivary nucleus
c. Raphe nucleus
d. Locus ceruleus

Ans. b. Inferior olivary nucleus

Ref: RI Bijlani and Manjunatha text book of Physio

- White matter contains 2 types of afferent fibers (i) Mossy and (ii) climbing fibers
- Climbing fibers bring information ONLY from inferior olivary nuclei and establish excitatory synapse with Pukinje cells
- Rest of the input from the cerebellum are brought by other fibers called mossy fibers which synapse with granule cells

9. In the histology section given, which marked area is involved in relieving pain in response to massage?



a. A
b. B
c. C
d. D

Ans. a. A

"Mezack and Wall" gate control theory of pain

- Massage stimulates A-beta fiber, which acts on gelatinosa neurone (G neuron) of dorsal of spinal cord.
- G neuron in turn inhibits small diameter pain fiber (closing the gate at spinal cord level.

10. Weber-Fechner law related to:

a. Number of nerves fiber
b. Number of muscles fiber
c. Number of stimulus
d. Intensity of stimulus

Ans. d. Intensity of stimulus.

Weber Fechner law states that the magnitude of sensation felt is propionate to the logarithm of intensity of stimulus.

$S = K \times \log I$

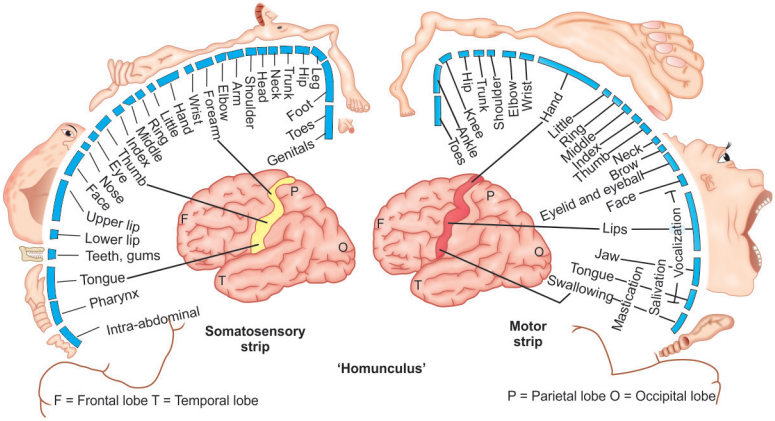
S: Perceived stimulus intensity

k: Weber fraction

11. Maximum area in homunculus signifies:

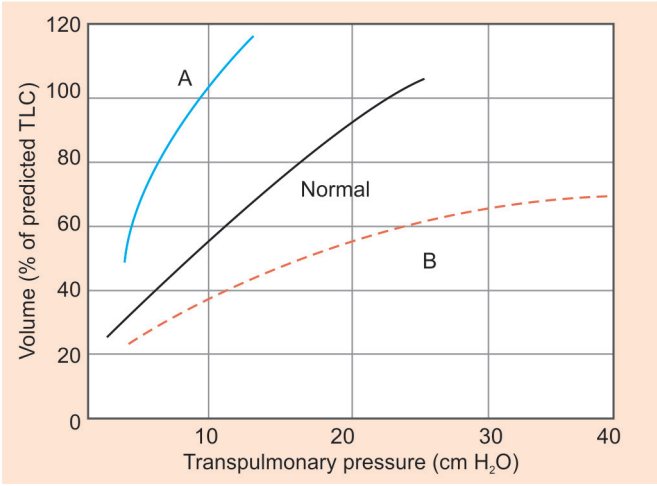
a. Low control and skilled movements
b. More muscle fibers are present
c. Increased precisiveness of movements
d. None of the above

Ans. c. Increased precisiveness of movements



- In homunculus the largest areas represent the face, hands, and fingers, where precise localization is most important
- In homunculus the size of the various parts is proportionate to the use of the part skilled fine movement with precision.

12. Compliance curve of the lung given below: Curve A signifies which of the following?



a. Pulmonary fibrosis
b. Atelectasis
c. Emphysema
d. ARDS

Ans c. Emphysmea

- A in the graph indicate increased compliance as seen in emphysema
- B in the graph indicate decreased compliance seen in pulmonary edema and interstitial pulmonary fibrosis.

Review of AIIMS Nov 2018

Salient Features

- This book is authored by AIIMSonians
- Authentic answers and references from AIIMS seminars, research papers and standard text books
- Answers of clinical scenario based MCQs explained in manner of "why correct is correct and incorrect is incorrect"
- All recall questions and appropriate answers are verified by AIIMS Rank Holders
- Repeated topics are explained in detail
- All aspects of question are addressed accordingly.

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