

29/11/15

DEGREE: B.E

Branch: Biomedical Engineering

Regulations/Semester: 2013/ II

Code No. /Subject: BM 8201/Anatomy and Physiology

Time: 3 Hours

Max: 100 Marks

Answer All Questions

Part – A

10X2=20 Marks

1. What is an action potential and give one method to record it?
2. Define epithelial tissue and list out its different types.
3. What is suture and name the joint type involved in this?
4. How oxygen transported from alveoli to blood-explain briefly?
5. Define Frank-Starling's law.
6. List out factors controlling closure of atrioventricular valves in the heart.
7. Draw a diagram of nephron and label it.
8. What is an acoustic reflex?
9. Define neuroglia and list out different types.
10. What is a ganglion and where it is located?

Part – B

5X16=80 Marks

1. Draw a diagram of cell membrane and explain in detail about transport mechanisms involved in cell membrane.
2. List out axial skeletal bones and explain different joint occurred in skull with an illustrative diagram.

Or

What is respiration and explain different factors and mechanism involved in controlling the respiration?

3. Define ECG? How it is measured and gives detailed information about different wave and its clinical importance.

Or

How blood pressure is regulated explain in detail?

4. Explain in detail about neural layer of eye with its clinical conditions.

Or

Write an essay about water absorption mechanism occurred in urinary system with diagram and its clinical conditions.

5. What is a cortex and how it is divided into different lobes in brain explain with diagram?

Or

Write an essay about spinal cord with diagram.

13. (a) (i) Derive an emf equation of a single phase transformer. (6)
(ii) Draw and explain the phasor diagram of a transformer on load condition. (10)

(Or)

- (b) (i) In a 30-kVA, 2300/230 V, 50 Hz, single-phase transformer, the iron and full-load copper losses are 450 W and 650 W respectively. Calculate the efficiency at unity power factor on full load and on half of the full load. (4)
(ii) Draw and explain various types of three phase transformer connections. (12)

14. (a) Explain the construction and working principle of a synchronous motor with neat diagram. (16)

(Or)

- (b) Write a brief note on starting of a three phase induction motor using auto-transformer starter and star-delta starter. (16)

15. (a) Explain the working principle and characteristics of a split phase induction motor and universal motor. (16)

(Or)

- (b) Explain the construction and working principle of a variable reluctance stepper motor. (16)