

**DIRECTOR OF HEALTH, MEDICAL SERVICES AND MEDICAL EDUCATION  
GUJARAT STATE  
29<sup>TH</sup> LABORATORY AND X-RAY TECHNICIANS TRAINING COURSE EXAMINATION  
PHYSIOLOGY**

Instructions: 1. Figure to the right indicates marks of each question  
2. Draw diagrams wherever necessary

Date: 10-08-2017

Time: 2 hours

Total marks: 50

**Q.1 (A) Answer any five of the following:**

1. What are the functions of platelets?
2. What is the structure of haemoglobin?
3. What is the principal of Sahli's Acid Hematin method?
4. What is tidal volume? Give normal value of it.
5. What is Erythroblastosis Foetalis?
6. Describe tachycardia and bradycardia.
7. What are the different types of muscles?

**(B) Match the following:**

- |  |   |
|--|---|
| <p>B 1. Neutrophils</p> <p>D 2. Cardiac muscle</p> <p>C 3. Saliva</p> <p>A 4. Juxtaglomerular cells</p> <p>A 5. Diabetes</p> | <p>a. Insulin deficiency</p> <p>b. Phagocytosis</p> <p>c. Kidney</p> <p>d. Involuntary</p> <p>e. Ptilin</p> |
|--|---|

Fill in the blank  
 (2) The spinothalamic tract 15  
 anterior → carries information about crude touch  
 lateral → lateral spinothalamic tract conveys pain and temperature

5

**Q.2 (A) Write short notes on any three:**

1. Hazards of blood transfusion
2. Sarcomere
3. Cardiac cycle ✓
4. Functions of Liver ✓
5. Functions of thyroid hormone.

15

**(B) Write true or false and correct it if it is not true:**

5

1. Large lymphocyte is more mature than a small lymphocyte.
2. Normal value of GFR is 125 Liter/day.
3. Leydig cells secrete progesterone hormone.
4. Muscle fatigue is due to inadequate supply of glucose.
5. In quiet breathing, expiration is a passive process.

**Q.3. Fill in the blanks:**

10

1. Each haemoglobin molecule carries four molecules of oxygen. → 4 molecules / (8 atoms)
2. Pain sensation is carried by lateral spinothalamic tract.
3. Normal value of cardiac output is 5-6 Liters/min. ~~about 4-5~~
4. Life span of RBC is 120 days.
5. Calcitonin is secreted by Thyroid gland.
6. Surfactant is produced by \_\_\_\_\_ cells of lung. — alveolar lining epithelial type II cell
7. Optimal temperature for spermatogenesis is \_\_\_\_\_ °C.
8. Sino Atrial Node is a pacemaker of heart.
9. Time of ovulation is usually 14 days prior to menses.
10. Cones photoreceptor is responsible for colour vision.