

August, 2015

STATE MEDICAL FACULTY OF WEST BENGAL

Preliminary Examinations
for Diploma in Electrocardiographic Technique : ECG Course

Paper – I
Basic Anatomy, Physiology

Time : 3 Hours

Full Marks : 80

*Question 1 is Compulsory.
Answer any Two from Question No. 2 to 5 and any Four from Question No. 6*

Q-1) State **TRUE/FALSE** as applicable:-

10x1 = 10

- i) There are eight cervical vertebrae.
- ii) Left Anterior Descending artery is a branch of Left Main Coronary Arteries.
- iii) The Circle of Willis is formed by Anterior, Middle and Posterior Cerebral arteries.
- iv) Liver is a paired organ.
- v) Central Nervous System consists of the Cranial Nerves and the Spinal Nerves.
- vi) Diastole is longer than Systole.
- vii) SA node is located at the junction of Superior Vena Cava and Right Atrium.
- viii) P Wave stands for Ventricular Depolarisation.
- ix) Adrenaline acts on both on Alpha and Beta Receptors.
- x) Adrenaline causes broncho-constriction.

Answer any Two from Question No. 2 to 5 and any Four from Question No. 6

2x20 = 40

- Q2. Describe the normal coronary arterial circulation with diagram
15+5 = 20
- Q3. Describe the normal Conduction System and Pacing of the heart with diagram.
15+5 = 20
- Q4. Describe the different mechanisms of Transport across cell membrane.
20
- Q5. What is Blood Pressure? How to measure BP? Which physiological mechanisms do regulate the BP in human?
5+5+10 = 20
- Q6. Write short notes on (**Any Four**) of the five topics stated below:-
4 x 7½ = 30
- a) Action Potential.
 - b) Coagulation Cascade.
 - c) Muscle contraction.
 - d) Cardiac Cycle.
 - e) Atherosclerosis.

STATE MEDICAL FACULTY OF WEST BENGAL

**Preliminary Examinations
for Diploma in Electrocardiographic Technique : ECG Course**

**Paper – II
Elementary Physics in relation to ECG Technique**

Time – 3 hours

Full Marks – 80

*Question 1 is Compulsory.
Answer any Two from Question No. 2 to 5 and any Four from Question No. 6*

Q-1) State **TRUE/FALSE** as applicable:- **10x1 = 10**

- i) Current is the ratio of Voltage and Resistance.
- ii) Superior Axis is located in North West quadrant.
- iii) AV nodal delay is reflected in PR interval.
- iv) QRS complex stands for ventricular repolarisation.
- v) Slow fast AVNRT is the commonest variety of all the types of AVNRT encountered.
- vi) Full form of WPW syndrome is Wolf Parkinson White Syndrome.
- vii) Fusion beat is exemplified by Pre-excitation.
- viii) Sinus Bradycardia is associated with heart rate lower than sixty per minute and sequential relationship of P, QRS and T.
- ix) Wide QRS is defined as QRS width greater than equal to 120 msec.
- x) ST elevation or depression is measured with respect to PR segment or TP segment.

Answer any Two from Question No. 2 to 5 and any Four from Question No. 6

2x20 = 40

Q2. Describe principle of Tread Mill Test. Describe Bruce Protocol and Modified Bruce Protocol of Tread Mill Test. State five contraindications of TMT.

5+5+5+5 = 20

Q3. Describe the structure of ECG machine with sketch diagram and enumerate the principle of its functioning.

10+10 = 20

Q4. What is Defibrillation? Describe the steps of electrical energy delivery. What is the difference between defibrillation and DC Cardioversion?

5+10+5 = 20

Q5. What is Holter Monitoring (ambulatory ECG)? How does it help in diagnosis of (a) Sick Sinus Syndrom (b) AV Blocks and (c) Ventricular premature beats & ventricular Tachycardia?

5+5+5+5 = 20

Q6. Write short notes on (**Any Four**) of the five topics stated below:-

4 x 7½ = 30

- a) ECG during Carotid Sinus Massage.
- b) ECG during Head Up Tilt Table Test.
- c) ECG monitoring in ICCU patients.
- d) Basic Life Support in Cardio-Pulmonary Resuscitation.
- e) ECG manifestations in patients in the Cath Lab.