

115/2015

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. Which system acts as a chemical communication and control system within the human body?  
(A) Nervous system (B) Circulatory system  
(C) Respiratory system (D) Endocrine system
2. Which is called as a natural pacemaker for heart?  
(A) AV bundle (B) AV node  
(C) SA node (D) bundle of HIS
3. The normal diastolic and systolic blood pressure range is :  
(A) 95 mm to 140 mm of Hg (B) 120 mm to 140 mm of Hg  
(C) 120 mm to 80 mm of Hg (D) 80 mm to 120 mm of Hg
4. Noise of an image can be increased by :  
(A) By averaging (B) By blurring  
(C) Subtracting one image from other (D) None of the above
5. Which of the following is non ionizing imaging modalitiy?  
(A) Computed tomography (B) MRI  
(C) PET (D) Radiography
6. 50-60 Hz noise in E.C.G machines can be reduced by :  
(A) Right Leg drive (B) CMR of instrumentation amplifier  
(C) Notch filter (D) All of the above
7. In which imaging modality radioactive isotope is used?  
(A) PET (B) Ultrasound  
(C) CT (D) MRI



8. The average human heart weights about :
- (A) 200 grams (B) 400 grams  
(C) 300 grams (D) 100 grams
9. Cardiac output is defined as :
- (A) Heart rate  $\times$  stroke volume (B) Respiration rate  $\times$  stroke volume  
(C) Blood flow rate  $\times$  stroke volume (D) Heart rate  $\times$  blood flow rate
10. In an ECG machine Lead I, II and III are called as :
- (A) Augmented limb leads (B) Unipolar limb leads  
(C) Bipolar limb leads (D) Unipolar augmented limb leads
11. What is the range of frequency response of a diagnostic ECG machine?
- (A) 0.05 to 100 Hz (B) 0.05 to 45 Hz  
(C) 5 to 100 Hz (D) 5 to 45 Hz
12. The second heart sound is related to :
- (A) Atria contraction (B) Aortic and pulmonary valve closure  
(C) Termination of ventricular filling (D) Mitral and tricuspid valve closures
13. Which one of the following methods is direct method of measuring blood pressure?
- (A) Sphygmomanometer (B) Auscultation technique  
(C) Rheographic method (D) Catheter filled system
14. Coulter blood cell counter works on the principle of :
- (A) Aperture impedance change (B) Light intensity variation  
(C) Mass change (D) Capacitance variation
15. The frequency band of Gamma pattern of EEG waveform is :
- (A) 0.5 – 4 Hz (B) 4 – 8 Hz  
(C) > 30 Hz (D) 8 – 13 Hz
16. How many electrodes are used in 10-20 electrode placement system in EEG machine?
- (A) 21 (B) 32  
(C) 40 (D) 12