



Course name: Practical training 1
Course Code: 390
First Semester Exam.
BME Program
Level 300
Exam Date: 1- 1 – 2019
Allowed Time: 2 Hours



1-Write true or false: (Score 15)

- 1) The lifespan of OR surgical light is measured in its L70.
- 2) Each medical device should be identified and tracked by its serial number.
- 3) The PM is unplanned maintenance whereas the CM is planned maintenance.
- 4) Location of ICU should be accessible from OR.
- 5) The walls of OR should be covered by antibacterial material, while the floor should be covered by antistatic material.
- 6) Circulations within OR are made from dirty to clean.
- 7) Ventilator does not treat a disease or condition.
- 8) Bipolar mode is used for both cutting and coagulation.
- 9) 12-lead system configuration is used for recording EMG.
- 10) Heart rate measurement using average calculation is done by counting the number of pulses.
- 11) The sources of bioacoustics signals are the nerves and the muscles.
- 12) In defibrillator, peak discharge current is dependent on the stored energy.
- 13) Bedside patient monitor is a special type of the oscilloscope.
- 14) Shock of defibrillator with synchronizer should be done during T wave.
- 15) Fulguration is random discharge of sparks between active electrode and tissue surface.

2- Choose the most correct answer (Score 15)

- 1- An abbreviated service history of every device should be saved in
 - a) Monitoring
 - b) Acquisition
 - c) Inventory & documentation
- 2- The space between two beds in ICU should be
 - a) 5-8 ft
 - b) 10-15 ft
 - c) 15-18 ft



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- 3- What is the electrode that is characterized by its heating factor?
 - a) Active electrode
 - b) Passive electrode
 - c) Dispersive electrode
 - 4- The main part of the electrosurgical unit is
 - a) Capacitor
 - b) Oscillator
 - c) Power supply
 - 5- The main function of the committee is to carry out acquiring of medical technology. The committee is
 - a) TAWG
 - b) CBC
 - c) MTAC
 - 6- The standard color of vacuum line is
 - a) White
 - b) Yellow
 - c) Black
 - 7- In defibrillator circuit, the capacitor is charged by
 - a) Rectifier diode
 - b) Inductor
 - c) Photo diode
 - 8- Sternum and apex paddles are applied together to the rib cage in
 - a) Anterio-posterior configuration
 - b) Sterno-apical configuration
 - c) Apical-posterior configuration
 - 9- Decreased liability and increased downtime are indicators for
 - a) Monitoring of medical equipment
 - b) Maintenance of medical equipment
 - c) Replacement of medical equipment
 - 10- The role of scrub nurse in OR is to
 - a) Help the chief surgeon
 - b) Pass instruments to the surgeon
 - c) Provide extra devices to OR
 - 11- A device that is used to examine the interior of a hollow organ or cavity of the body is
 - a) Endoscopy
 - b) Microscope
 - c) Laryngoscope
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- 12- Observation and short term ventilation of patients take place in
- ICU Level I
 - ICU Level II
 - ICU Level III
- 13- A device that is used to measure the oxygen arterial saturation is
- Ventilator
 - Pulse oximeter
 - Blood gases analyzer
- 14- Action potential of the cell is produced during
- Polarization
 - Repolarization
 - Depolarization
- 15- One form of measuring blood pressure is Korotkoff technique which is based on
- Fluid-filled catheter
 - Catheter tip probe
 - Sounds appearance and disappearance

3- Answer the following questions (Score 20)

- Write down the acquisition process steps. (4)
- Draw a block diagram of solid-state electrosurgical unit. (4)
- What are operating modes of the defibrillator? What is the difference? (4)
- List the basic sections of any medical instrument. (4)
- List four elements of OR facility environment. (4)

Bonus question (5)

Discuss briefly only one of the following equipment:

- EEG
- EMG
- Ventilator