



MIMS Academy
Department of Emergency Medicine
India's first G.W.U Academic Training Center
International Training Organization of American Heart Association
MASTERS IN EMERGENCY MEDICINE

Screening test for Admission to MEM 2013 Batch under GWU
Basic Science and Clinical Emergency Medicine

Direction -

- Answer all questions
- No negative marks
- 50 objective multiple choice single response questions - each correct answer carrying one mark
- Time: 50minutes
- Score will be added to total Interview score
- Don't write on question paper
- Mark correct answer using HP pencil

1. Hypoglycemia in a new born weighing > 2.5kg is defined as a glucose level of

- (a) <70 mg/dl
- (b) <40 mg/dl
- (c) <50 mg/dl
- (d) <100 mg/dl

2. Regarding spinal sensory examination, which is correct as to the resulting level of loss of sensation?

- (a) L4 - Lateral aspect of calf
- (b) T10 - Medial aspect of thigh
- (c) T4 - Suprasternal notch
- (d) C7 - Index Finger

3. Carpel tunnel syndrome is entrapment of the following in the carpel tunnel

- (a) Median Nerve
- (b) Ulnar Nerve
- (c) Radial Nerve
- (d) Posterior Interosseous Nerve

4. Who among the following is not at greater risk of serious complications from Varicella Zoster Virus (VZV)
- (a) Women in first trimester pregnancy
 - (b) Breast feeding neonates
 - (c) Splenectomised Children
 - (d) Patient on long term steroid therapy
5. Which is an ECG change in Hyperkalemia
- (a) J Wave
 - (b) T Wave Inversion
 - (c) Flattened P Wave
 - (d) U Wave
6. Regarding FEMORAL TRIANGLE - TRUE STATEMENT
- (a) Femoral vein is lateral to femoral artery
 - (b) Femoral nerve supplies motor fibres to hip adductors
 - (c) It contains medial cutaneous nerve of thigh
 - (d) Femoral artery is palpated at the base of triangle 2-3 cm below midpoint inguinal ligament
7. Regarding Knee Jerk - TRUE STATEMENT
- (a) L 2 Nerve root is involved
 - (b) It is absent in tibial nerve palsy
 - (c) The reflex arc is polysynaptic
 - (d) Hypothyroidism causes brisk reflex
8. Which antibiotic causes hemolysis in G6PD deficiency?
- (a) Trimethoprim
 - (b) Ciprofloxacin
 - (c) Penicillin
 - (d) Metronidazole
9. Hemodialysis is used to treat poisoning with
- (a) Tricyclic Antidepressant
 - (b) Ecstasy (MDMA)
 - (c) Dhatura
 - (d) Lithium
10. The compression: ventilation ratio as per ACLS 2010 in an adult patient who is in cardiac arrest is
- (a) 15:2
 - (b) 30:2
 - (c) 15:1
 - (d) 30:1
11. Prolonged QT interval on an ECG may be caused by all of the following except
- (a) hypokalemia
 - (b) hypercalcaemia
 - (c) hypomagnesaemia
 - (d) hypothermia

12. ECG shows a ST elevation in Lead II, III, aVF is suggestive of

- a. Anterior wall MI
- b. Lateral wall MI
- c. Posterior wall MI
- d. Inferior wall MI

13. Rotator Cuff is formed by all except

- a. infraspinatus
- b. teres major
- c. subscapularis
- d. supraspinatus

14. The Hb/O₂ dissociation curve shift to the right in all except

- a. increased CO₂
- b. decreased Ph
- c. decreased temperature
- d. increased in 2,3 DPG

15. Which of the following of the statement about osmosis is false

- a. the osmotic pressure of a solution depends on the number of particles in solution
- b. the osmolality is affected by temperature
- c. this is the movement of solutes across a semipermeable membrane from areas of low concentration to area of high concentration
- d. when two fluids contain the same number of particles in a solution they exert the same osmotic pressure and are said to be isotonic

16. The current CPR sequence in Basic Life Support as per ACLS 2010 is

- a. CBA
- b. BCA
- c. CAB
- d. ABC

17. Type I hypersensitivity reaction is seen in all except

- a. contact dermatitis
- b. asthma
- c. anaphylaxis
- d. eczema

18. In the spinal cord injured patient, hypotension may be neurogenic but other causes, particularly occult hemorrhage, must be ruled out. Signs of spinal shock include all Except

- A) Hypotension
- B) Cold clammy skin
- C) Relative bradycardia
- D) Normal capillary refill time

19. False statements about ECG include:

- A) The P-R interval corresponds to the duration of atrial systole
- B) The ST segment represents repolarization of the ventricles
- C) The QRS complex represents atrial repolarization
- D) P-wave represents depolarization of the atrium

20. True about the examination of a patient with an acute asthma attack
- A) Absence of the use of accessory muscles is a good predictor of the severity of the attack
 - B) The louder the wheezing, the more severe the degree of obstruction, with the loudest wheezing heard just prior to respiratory collapse.
 - C) Pulsus paradoxus is an inspiratory rise of the systolic blood pressure by over 10 mm Hg and is a sign of severe disease.
 - D) Wheezing is produced by a narrowing of the airways that produces turbulent flow.
21. True regarding differences between pediatric and adult traumas:
- A) Head injury is more common in children due to their higher head to body ratio
 - B) Children are less likely to get hypothermic due to their small body surface area
 - C) Children are less able to compensate for blood loss and become hypotensive earlier
 - D) The child's abdominal organs are more protected due to a greater amount of body fat.
22. All are Sign of cardiac tamponade except
- A) Hypertension
 - B) Elevated JVP
 - C) Pulsus paradoxus
 - D) Muffle heart sound
23. Initial management of Acute MI do not include
- A) Nifedipine
 - B) Nitroglycerin
 - C) Oxygen
 - D) Aspirin
24. A 10 yrs old boy presented to Emergency Dept with history of Headache and vomiting followed by child collapsed. On arrival to ED his GCS is 5/15. What is the first priority in managing this patient
- a) Take CT brain immediately
 - b) Give analgesic and antiemetic for Headache.
 - C) Intubate and ventilate
 - d) Give Mannitol.
 - e) Call neurologist immediately
25. Left Coronary artery is branch of
- (a) Right coronary artery
 - (b) Ascending aorta.
 - (c) Descending Aorta.
 - (d) Main coronary artery
26. Which among this drugs has 'dissociative anesthesia'
- a) Propofol
 - b) Etomidate
 - c) Ketamine
 - d) Both a&c
 - e) All of them

27. *Staphylococcus aureus*
- A. Is a gram negative bacteria.
 - B. Endotoxin release leads to the toxic shock syndrome.
 - C. Is usually sensitive to oral cloxacillin
 - D. Causes Scarlet Fever.
28. Of physiological changes in pregnancy
- A. Cardiac output increases by around 50%.
 - B. Diastolic BP drops slightly.
 - C. pCO₂ rises.
 - D. HCO₃⁻ rises.
29. The femoral nerve
- A. Lies medial to the femoral artery.
 - B. Overlies the iliacus muscle.
 - C. Gives a branch in the thigh to sartorius
 - D. The posterior division gives off the medial and intermediate cutaneous nerves of the thigh
30. The femoral artery
- a) Is a continuation of the common iliac artery
 - b) Is located at the midpoint of the inguinal ligament
 - c) Gives off the profunda femoris branch which provides collateral circulation by anastomosing with the popliteal artery
 - d) Is often injured with fractures of the femoral shaft
31. Regarding acquired immunisation
- a) BCG is a killed whole bacterial vaccine
 - b) The protective immunity conferred by the MMR vaccine lasts temporarily
 - c) Subunit vaccines are used for passive immunisation
 - d) Polio vaccine is made in both live and killed forms of the virus
32. The cardiac output is determined by
- a) Blood volume
 - b) Blood flow to cardiac muscle
 - c) Stroke volume
 - d) Blood Pressure
33. Regarding penicillins
- a) They mainly act by inhibiting cell wall synthesis
 - b) They are very lipid-soluble
 - c) They are slowly excreted by the kidney
 - d) Patients who are allergic to penicillin may not necessarily be allergic to cephalosporins because they have very slightly different β -lactam rings
34. The renin-angiotensin-aldosterone system regulates
- a) Sodium balance
 - b) Heart rate
 - c) Chloride balance
 - d) Nitrogen balance

35. The following are symptoms and signs of hyperthyroidism
- Intolerance to cold
 - Lid lag
 - Weight gain
 - Bradycardia
36. What is the immediate treatment of a tension pneumothorax?
- Adrenaline 1 mg
 - Chest tube
 - Amiodorone 300mg
 - Needle decompression
37. In the Glasgow Coma Scale the following scores are true
- Eye opening to speech scores 4 (four)
 - No verbal response scores 0 (zero)
 - Patient obeying commands scores 6 (six)
 - Flexion response to pain scores 2 (two)
38. The vertebral column
- Is made up of 32 vertebrae
 - Has intervertebral foramina which are formed by notches in the laminae
 - Has C1 to C7 segmental spinal nerves passing over the superior aspect of their corresponding vertebrae
 - Results in spina bifida if the two primary ossification centres of the body do not fuse
39. The ulnar nerve
- Passes deep to the flexor retinaculum and lies lateral to the pisiform bone
 - Supplies the adductor pollicis muscle
 - Lies medial to the flexor carpi ulnaris tendon at the wrist
 - Injury at the level of wrist results in clawing which is most pronounced in index and middle fingers
40. Heart rate less than 100 implies an APGAR score of
- 3
 - 2
 - 1
 - 0
41. Dosage of Amiodarone in cardiac arrest (ACLS)
- 300 mg
 - 200mg
 - 100mg
 - 50mg
42. Carpel Tunnel contains
- Palmar cutaneous branch of median nerve
 - Flexor Carpi Radialis
 - Pisiform Bone
 - Tendon of flexor pollicis longus

43 The following are the criteria for SIRS except

- a. temperature $< 36^{\circ}\text{C}$
- b. WBC $< 4000/\text{mm}^3$
- c. HR $> 90/\text{min}$
- d. RR $< 20/\text{min}$

44. Structures transmitted through the aortic opening is

- a. right vagus nerve
- b. inferior vena cava
- c. azygous vein
- d. left vagus nerve

45. Respiration is controlled by the following except

- a. the pH of CSF
- b. respiratory centres in the cerebral hemisphere
- c. CO_2 receptor in carotid body
- d. The Hering - Breuer reflex

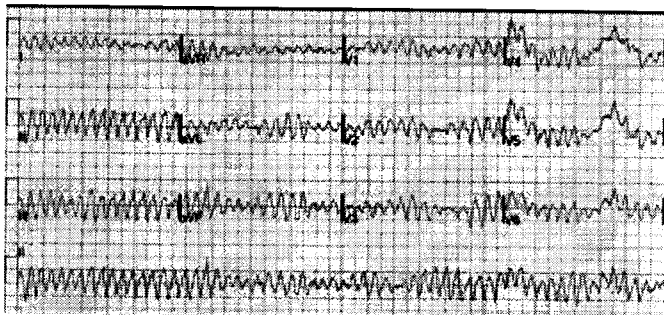
46. The following are retroperitoneal structures

- A] Pancreas
- B] Sigmoid colon
- C] Liver
- D] Spleen

47. The cardiac output increases with

- a) Moderate changes in environmental temperature
- b) Standing from a lying down position
- c) Eating
- d) Rapid arrhythmias

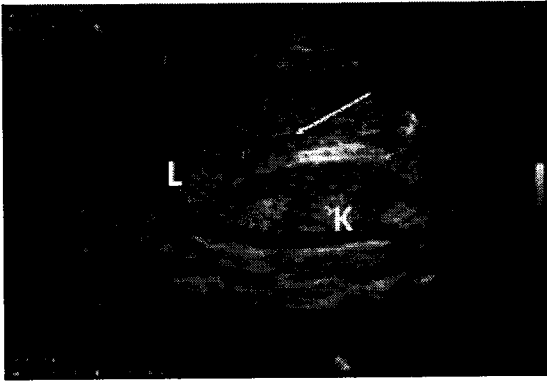
48. 50 year old gentle man brought to Emergency department with retrosternal chest pain & sweating. While receiving patient at ED, he was not responding, no respiration and carotid pulse was not palpable. Monitor attached.



Identify rhythm

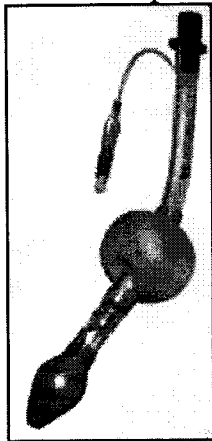
- (a) VF
- (b) AF
- (c) NSR
- (d) PEA
- (e) Asystole

49. 30 year old female, brought emergency department following a motor vehicle collision. On arrival, she was confused, abdomen mildly distended, pulse rate 150/min, BP - 100/70mmHg, respiration rate 26/min. Emergency Physician performed a FAST examination (Focused Assessment Sonography in Trauma). What the Sonography picture shows -



- (a) Normal study
- (b) Collection in the pleural cavity
- (c) Collection in the pouch of Douglas
- (d) Collection in Morrison's pouch
- (e) Inadequate film to comment

50. Name the equipment seen the picture -



- (a) Endotracheal tube
- (b) Combitube
- (c) King's Airway
- (d) Oropharyngeal Airway
- (e) Laryngeal Mask Airway