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معدات التخدير-الرابع-علوم التخدير- كلية العلوم الصحية-درجة الامتحان (70)

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- 1) All are bag valve mask disadvantages,except:
  - 1) - tactile feedback during ventilation.
  - 2) + deliver room air without a pressurized gas supply.
  - 3) - no visual indication of spontaneous ventilation
  - 4) - the system is expensive to use with anaesthetic gases
- 2) All are advantages of Adjustable pressure limiting valve,except:
  - 1) - Facilitates scavenging.
  - 2) - Permits application of PEEP.
  - 3) + Adds bulk to the breathing system.
  - 4) - Permits control of the airway pressure during positive pressure ventilation.
- 3) About reservoir bag is false:
  - 1) - an essential component of most breathing systems
  - 2) + It acts as a visual indicator of controlled ventilation.
  - 3) - Manual ventilation is achieved by squeezing the bag.
  - 4) - Permits tactile feedback.
- 4) All are advantages of Mapleson systems, except:
  - 1) - are simple and cheap
  - 2) - are easily portable
  - 3) - do not require CO2 absorption
  - 4) + all Mapleson systems are inefficient in comparision to breathing circuit.
- 5) All are Magill system (Mapleson A) disadvantages, except:
  - 1) - Inefficient for controlled ventilation.
  - 2) - APL valve at the patient end adds bulk to the system
  - 3) + Efficient for spontaneous ventilation.
  - 4) - Not suitable for paediatrics.
- 6) Bain system (Coaxial Mapleson D) advantages, except:
  - 1) - facilitating scavenging
  - 2) - Low dead space
  - 3) + Inefficient for spontaneous ventilation.
  - 4) - Compact system with all the major components at the machine end
- 7) Ayre's T-piece (Mapleson E) disadvantages, except:
  - 1) + There is minimal dead space.
  - 2) - Application of PEEP is not possible
  - 3) - Scavenging is difficult.
  - 4) - Positive pressure ventilation is difficult and potentially hazardous.
- 8) Jackson-Rees modification (Mapleson F) advantages, except:
  - 1) + Scavenging is difficult.
  - 2) - Positive pressure ventilation and PEEP are possible
  - 3) - More suitable for inhalational induction than a circle system.
  - 4) - the standard breathing system for paediatric patients
- 9) All are The circle system disadvantages, except:
  - 1) - The extra valves, tubing and soda lime canister increase the resistance.
  - 2) - leaks and disconnections are more difficult to identify quickly
  - 3) - Soda lime may degrade sevoflurane into harmful substances such as compound A.
  - 4) + Reduced atmospheric pollution





- 10) All are The circle system advantages, except:
- 1) - low flow risking hypoxia and awareness.
  - 2) - conserves anaesthetic gases, heat and moisture.
  - 3) + Low flow anaesthesia is possible
  - 4) - Reduced atmospheric pollution
- 11) Cylinder manifolds advantages, except:
- 1) - Provides an effective backup supply.
  - 2) - Simple and cheap.
  - 3) + Limited capacity when compared with a VIE.
  - 4) - The alarm system means it should never run empty
- 12) Medical gas cylinders, advantages, except:
- 1) + Heavy to transport
  - 2) - Smaller cylinders are portable
  - 3) - A variety of connectors exist.
  - 4) - Can be refilled and reused.
- 13) All are safety Piped medical gas supply, except:
- 1) + the pin index safety system
  - 2) - Clear labelling – both Schrader sockets and connecting hoses are labelled with the gas name.
  - 3) - Colour coding – both Schrader sockets and connecting hoses are colour-coded
  - 4) - NIST – the hose connects to the anaesthetic machine by means of a Non-Interchangeable Screw Thread
- 14) a component of scavenging system:
- 1) - Collecting system
  - 2) - Receiving system
  - 3) - Transfer system
  - 4) + all are scavenging components
- 15) which statement about scavenging system is not true:
- 1) - divided into active or passive
  - 2) + Transfer system connected to the adjustable pressure limiting
  - 3) - Active systems use a pump to generate a negative pressure
  - 4) - positive pressure generated by the patient's expiration is used in passive system
- 16) Passive humidifiers, advantages, except:
- 1) - Do not require a power source.
  - 2) + HMEs can become occluded with secretions, blood or water.
  - 3) - Produce 60–80% humidification of inspired gases
  - 4) - Cheap and simple.
- 17) Nebulized humidifiers disadvantages, except:
- 1) - Expensive.
  - 2) - Require a sterile water supply.
  - 3) - Require an electrical power supply.
  - 4) + There is no added dead space.
- 18) Quincke spinal needle (cutting) disadvantages, except:
- 1) - Less tactile feedback
  - 2) + Cuts through tissue and ligaments, making insertion easier.
  - 3) - increases the risk of nerve damage
  - 4) - Higher incidence of PDPH
- 19) Ballpen (stylet point needle) advantages, except:
- 1) - No problems with coring of tissue or blockage of the aperture
  - 2) - reduce the risk of neurological damage



- 3) ☒ Withdrawal of the stylet may dislodge the hollow cannula from the subarachnoid space
- 4) ☐ The pencil-point stylet aids atraumatic insertion
- 20) Epidural needles advantages, except:
- 1) ☐ Tactile feedback as it passes through tissues and ligaments
- 2) ☒ Dural puncture almost invariably leads to a PDPH due to its wide bore.
- 3) ☐ Blunt, curved tip reduces the incidence of dural puncture
- 4) ☐ The curved tip also facilitates directional placement of the catheter
- 21) all are anesthetic machine components, except:
- 1) ☐ E cylinder
- 2) ☐ flowmeter
- 3) ☒ pulse oxymeter
- 4) ☐ vaporizer
- 5) ☐ breathing circuit
- 22) the false statement is:
- 1) ☒ PISS connects gas pipelines to the anaesthetic machine.
- 2) ☐ The pin index system prevents connection of an incorrect gas cylinder to the yoke on the anaesthetic machine
- 3) ☐ A Bodok seal is a neoprene washer surrounded by a steel reinforcing ring
- 4) ☐ The oxygen flush delivers oxygen at 35–75 l.min
- 23) which statement is true:
- 1) ☐ Pressure relief valves are located downstream of each pressure regulator as a backup in case of regulator failure
- 2) ☐ Needle valves are located at the base of flowmeters
- 3) ☐ The back bar is part of the low pressure system situated downstream of the flowmeter block
- 4) ☒ All statements are true
- 24) Boyle's bottle disadvantages, except:
- 1) ☒ Full saturation of the vapour chamber gas flow was possible.
- 2) ☐ No temperature compensation
- 3) ☐ Tipping Boyle's bottle could lead to dangerous rises in anaesthetic concentrations
- 4) ☐ The concentration of anaesthetic delivered to the patient was imprecise
- 25) Copper kettle advantages:
- 1) ☐ Temperature stabilized by the copper heat sink.
- 2) ☐ Could be used with any volatile anaesthetic agent
- 3) ☒ both are advantages
- 4) ☐ both are disadvantages
- 26) Modern variable bypass vaporizers disadvantages, except:
- 1) ☐ High internal resistance so must be used 'out of circle
- 2) ☐ Temperature compensation only works within a reasonable range of ambient temperatures.
- 3) ☒ Easy to use and reliable.
- 4) ☐ The heat sink makes the vaporizer heavy
- 27) Advantages of flowmeters, EXCEPT:
- 1) ☒ can get stuck
- 2) ☐ cheap and simple
- 3) ☐ easy to obtain
- 4) ☐ no power required
- 28) The bobbin inside the flowmeter moves due to:
- 1) ☐ Electrical force
- 2) ☐ Magnetic force
- 3) ☒ Gas flow



- 4) - Vacuum pressure
- 29) about flowmeters is false:
- 1) - they have an accuracy of  $\pm 2.5\%$
  - 2) + they have a tapered tube with narrow top
  - 3) - at high flows, the density of the gas is important in measuring the flow
  - 4) - the reading of the flow from the top of the bobbin
- 30) all about flowmeters is true except:
- 1) + N<sub>2</sub>O maybe used in an O<sub>2</sub> flowmeter without a change in calibration
  - 2) - flowmeters use a tube and bobbin
  - 3) - they are an example of a variable bypass orifice devices
  - 4) - both laminar and turbulent flow is encountered
- 31) About The normal capnograph trace, is false:
- 1) - Phase one represent the dead space
  - 2) - Phase two rapid rise in PCO<sub>2</sub> as alveolar gas appears.
  - 3) + phase two represents end-tidal CO<sub>2</sub> (EtCO<sub>2</sub>)
  - 4) - Phase four representing inspiration.
- 32) About rebreathing in capnograph trace is false:
- 1) - fraction of inspired CO<sub>2</sub> (FiCO<sub>2</sub>) rises above zero
  - 2) + a sign of malignant hyperthermia.
  - 3) - EtCO<sub>2</sub> will also rise as a consequence.
  - 4) - Caused by exhausted soda lime
- 33) The 'curare clefts' occur when:
- 1) - exhausted soda lime
  - 2) - malignant hyperthermia
  - 3) - chronic obstructive lung diseases
  - 4) + Loss of neuromuscular blockade
- 34) Pulse oximeters disadvantages, except:
- 1) - inaccurate measurements in atrial fibrillation
  - 2) + Is not affected by the presence of different haemoglobins
  - 3) - carboxyhaemoglobin gives false high measurement
  - 4) - methaemoglobinaemia gives false low measurement
- 35) Pulse oximeters advantages, except:
- 1) + Interference from movement or nearby electrical devices can cause loss of signal.
  - 2) - Is not affected by the presence of different haemoglobins
  - 3) - Easy to use, safe, non-invasive.
  - 4) - continuous measurement of oxygen saturation and pulse rate.