

## الجمهورية اليمنية جامعة صنعاء مركز الاختبارات الالكترونية



## قائمة الاسئلة 04:30 14-05-2025

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- 1) About surface tension is false
  - 1) Is force per unit length
  - 2) molecule within the liquid is attracted equally
  - 3) force of contraction across a line of a unit length
  - 4) + The surface tension of water at 20 °C = 58 mN/m.
- 2) About pulmonary surfactant is false
  - 1) + is secreted by type I alveolar epithelial cells
  - 2) is a lipoprotein mixture containing phospholipids
  - 3) is 5 nanometers in thickness
  - 4) decreases the surface tension
- 3) which statement is true
  - 1) During deflation of the alveoli, surface tension tends to collapse the alveoli
  - 2) During inflation of the alveoli surface tension preventing its over-stretch.
  - 3) surface tension in small deflated alveoli is 10-15 mN/m.
  - 4) + All statements are true
- 4) About La place low is false
  - 1) determines the relationship between the pressure (P), the surface tension (T), and the radius (r).
  - 2) the pressure inside a spherical structure is inversely proportional to the radius.
  - 3) + pressure inside a cylindrical structure is is directly proportional to the radius.
  - 4) pulmonary surfactant adjusts the surface tension according to the radius.
- 5) Deficiency of pulmonary surfactant causes atelectasis and collapse as in:
  - 1) Premature infants with hyaline membrane disease.
  - 2) Patients with acute respiratory distress syndrome
  - 3) \_\_\_\_ Patients on cardiopulmonary bypass
  - 4) + All statements are true
- 6) choose the correct statement
  - 1) A Solvent is the substance that dissolves in a solution.
  - 2) + Solubility is defined as the ability of a substance to dissolve in another substance.
  - 3) A Solute is the fluid in which another substance dissolves.
  - 4) A Solution is the fluid in which another substance dissolves.
- 7) factor Affecting the Solubility of gases in a liquids
  - 1) The Nature of the Liquid
  - 2) The Pressure of the Gas
  - 3) The Temperature of the Liquid
  - 4) + All factors can affect the solubility
- 8) kelvin scale for temperature measurment, is false:
  - 1) it has a true zero
    - 2) + It is derived from boyle's law
    - 3) is not clinically used.
    - 4) Kelvin is 1/273.16
- 9) Celsius Scale for temperature measurment is false:
  - 1) \_\_\_\_ Temperature K =temperature ( $^{\circ}$ C) + 273
  - 2) + is not clinically used.
  - 3) The most commonly used
  - 4) Both Kelvin and Celsius scale have degrees of the same size



11)

13)

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- 10) Advantages of Mercury termometers, except:
  - 1) It has a linear scale.
  - 2) It is cheap
  - 3) + It is fragile
  - 4) used in conscious patients
  - disadvantages of Mercury termometers, except:
  - 1) unsuitable for remote readings
  - 2) + It has a linear scale.
  - 3) Its response time is relatively long
  - 4) It is fragile
- 12) About bimetallic strip thermometers is false
  - 1) It is not accurate
  - 2) It is used for measuring air temperature.
  - 3) + It is used in in humidifiers
  - 4) It is cheap.
  - choose the correct match
  - 1) The tympanic membrane- peripheral temperature
  - 2) + The nasopharynx- core temperature
  - 3) The esophagus- peripheral temperature
  - 4) none are correct matched
- 14) Sites to measure peripheral temperature
  - 1) the rectum
  - 2) the urinary bladder
  - 3) + axillary prob
  - 4) the tympanic membrane
- 15) About Heat, is false:
  - 1) is a form of energy that can be transferred from a hotter substance to a colder substance.
  - 2) + potential energy of the molecules of the substance.
  - 3) The unit of heat in humans is kilocalarie
  - 4) the rate of heat production is measured by Watt
- 16) The amount of heat required to produce a change of the state of a given substance from one phase to another at a constant temperature is called
  - 1) Heat capacity
  - 2) Specific heat capacity
  - 3) + latent Heat
  - 4) Specific latent Heat
- 17) Latent Heat Of Vaporization:
  - 1) + It is the amount of heat required to change the substance from a liquid to vapor phase without a change in temperature
  - 2) It is the amount of heat given out to change the substance from vapor to a liquid phase without a change in temperature.
  - 3) It is the amount of heat required to change the substance from a solid to a liquid phase without a change in temperature.
  - 4) It is the amount of heat given out to change the substance from a liquid to a solid phase without change in temperature.
- 18) All are metods to prevent hypothermia, except:
  - 1) + decrease ambient temperature and humidity
  - 2) Humidify the inspired gases
  - 3) Warm intravenous solutions



19)

24)



- 4) Use warm mattress
  - when convection is the rout of heat loss, is true:
    - 1) like cold ambient operating room temperature
    - 2) like open body cavity
    - 3) + like a theatre with high air flow rates
    - 4) like patient contact with a cold object
- 20) Radiation is:
  - 1) \_\_\_\_ It is transfer of heat energy by movement of liquid or gas due to change in their density
  - 2) + It is emmision of heat from the body in the form of infrared radiation
  - 3) it is due to loss of latent heat of vaporization of moisture on the skin's surface
  - 4) It is the direct transfer of heat energy from one molecul to another
- 21) About evaporation is false:
  - 1) it is about 20 % of heat loss from the body
  - 2) \_\_\_\_ heat loss depends on sweating
  - 3) + does not need a medium
  - 4) like open body cavity
- 22) All are units to measure the heat energy, except:
  - 1) Joule
  - 2) + Psi
  - 3) Cal
  - 4) Kilojoule
- 23) About conduction is false:
  - 1) Very minimal
  - 2) Metals are poor conductors
  - 3) + It can occur in a vacuum
  - 4) Contact of the patient with a cold subject
  - To measure the humidity, use a:
    - 1) Dew point hygrometer
    - 2) Hair hygrometer
    - 3) + All above
    - 4) None above
- 25) Advantages of artificial nose, except:
  - 1) Cheap
  - 2) Light
  - 3) Easy to use
  - 4) + Increase dead space
- 26) All are hazards of over humidification, except:
  - 1) Atelectasis
  - 2) Pulmonary edema
  - 3) + Hypothermia
  - 4) Infection
- 27) Laminar flow, except:
  - 1) Flow pass through a smooth uniform tube
  - 2) Flow moves in a steady regular manner
  - 3) + The flow is noisy
  - 4) Low resistance
- 28) Turbulent flow is true:
  - 1) Flow pass through a smooth uniform tube
  - 2) Flow moves in a steady regular manner





- 3) The flow is noisy
- 4) + All above
- 29) Factors affecting the laminar flow, except:
  - 1) + Density of the fluids
  - 2) Radius of the tube
  - 3) Viscosity of the tube
  - 4) Length of the tube
- 30) Factor affecting the turbulent flow is:
  - 1) \_ \_ Radius of the tube
  - 2) + Reynolds number
  - 3) Viscosity of the tube
  - 4) Length of the tube
- 31) Electrical safety statement is false:
  - 1) + Electrical power is grounded in OR
  - 2) Electrical equipment are gounded in OR
  - 3) Electrical shocks disrupt cellular function
  - 4) Grounding prevents electrical chrges build up
- 32) turbulent flow is false
  - 1) The fluid moves in an irregular manner
  - 2) + The flow is silent.
  - 3) The resistance is higher
  - 4) directly proportional to the square of the flow
- 33) Reynolds number> 2000
  - 1) \_\_\_\_ the flow is constant
  - 2) + the flow is turbulent
  - 3) the flow is laminar
  - 4) there is no flow
- 34) laminar flow is :
  - 1) + parabolic velocity profile.
  - 2) flat flow profile.
  - 3) flow passes through a smooth uniform tube with a constriction
  - 4) The flow is noisy
- 35) ultrasonic Nebulizer disadvantages:
  - 1) adjustable droplet size
  - 2) Cheap
  - 3) + over-efficient
  - 4) humidification of the inspired air.