GENESIS

(Post Graduation Medical Orientation Centre)

Foundation-1 Batch

Total Number- 60 | **Topic: Respiratory System & GP** | **Time: 20 Min**

Pass Mark-42 | Question 16-30 is based on Single answers | **Date: 11/01/20**

1. Co_2 is carried in the blood in?
a) Combination ē the haemoglobin molecule
b) Combination ē the plasma protein
c) Physical solution in plasma
d) Greater quantity in RBC than in plasma
e) Greater quantity as Hco_3^- than any other forms
TTTF (Plasma more)T [Rodde- 160]

2. Vital capacity increase in case of followings?
a) Increase airway resistance
b) Upright position
c) Pregnancy
d) Physical training
e) Pulmonary fibrosis
FTFTF (GS-14)

3. Residing at high altitude results in
a) Hypoventilation
b) Shifting of o_2 hemoglobin dissociation curve to right
c) Increased 2, 3 - DPG concentration
d) Pulmonary vasoconstriction
e) Respiratory alkalosis
FTTTT *[Ref: Ganong physiology/25th/P-648,649]*

4. Laboratory findings of respiratory acidosis?
a) Low PH
b) High plasma HCO_3
c) High Co_2
d) Hypokalaemia
e) Alkaline urine
TTTF (Hyperkalaemia) F (Acidic urine)
[Ref: Genesis Sheet-p=42]

5. Coughing?
a) Is initiated by irritation of trachea & bronchi
b) Contraction narrows airway & increased velocity of flow
c) Depends on expiratory muscle, particularly abdominal muscle
d) It is less explosive than sneezing
e) Is depressed during anaesthesia
T T T F T

6. About peripheral chemoreceptors of respiration?
a) Are located in the carotid and aortic bodies
b) A reduced PaO_2 stimulates them
c) Respond to decrease $PaCO_2$& increase $[H^+]$
d) Afferent impulse from carotid receptors to brain via vagus nerve
e) Afferent impulses from them decrease rate & depth of the respiration
TTF (Increase $PaCO_2$)F(Glossopharyngeal nerve) F (Increase) [Ref: GS-P=36]

7. As people age, there is usually a decrease in their?
a) Ratio of RV to VC
b) Percentage of vital capacity expelled in 1 second
c) Lung volume level at which small airways start to close during expiration
d) Lung elasticity
e) Resting arterial blood Po_2
FT (FEV_1)FTT [Ref: Rodde-144]

8. Bronchial smooth muscle contracts in response to?
a) Bronchial mucosal irritation
b) Inhalation of cold air
c) Circulating norepinephrine
d) Local beta adrenoceptor stimulation
e) A fall in bronchial Pco_2
TTF (Relax)FT(Limit local overventilation) [Ref: Rodde-149]

9. A patient with carbon dioxide retention is likely to have?
a) Metabolic acidosis
b) Alkaline urine
c) Cool extremities
d) Raised cerebral blood flow
e) Raised plasma bicarbonate
FFFTT *[Ref: Rodde/6th/Q-179/P-75]*

10. Compliance of the lungs is greater?
a) In the tidal volume range
b) In adults than in infants
c) Than the compliance of the lungs & thorax together
d) In recumbent subjects than in standing subject
e) When they are filled ē N/S than when they are filled ē air
TTTFT [Ref: Rodde-151]

11. Complete obstruction of a major bronchus usually results in?
a) Collapse of the alveoli supplied by the bronchus
b) Lowers local intrapleural pressure
c) An increase in physiological dead space
d) Cyanosis
e) An increase in blood flow to the lung tissue supplied by the bronchus
TTFFF [Rodde-174]

12. About dead space?
a) Normal volume 350 ml in a young adult
b) Anatomic dead space from nostril to terminal bronchiole
c) Physiologic dead space = Anatomic + Alveolar dead space
d) Anatomical dead space indicates ventilation perfusion ratio
e) Physiologic dead space saturates the inspired air by water vapor
F (150ml)TTFF [GS-P=6]

13. Followings are correct pair?
a) RV=350 ml
b) TV=500 ml
c) TLC=5800 ml
d) VC = 3500 ml
e) FRC = 4600 ml
FTTFF [Guyton-P=502]

14. Ventilation is increased during?
a) Periods when CSF P^H is reduced
b) Chronic renal failure
c) Periods when plasma Hco_3^- level is raised
d) Deep sleep
e) Exercise because of the ensuing fall in arterial Po_2
TTFFF [Rodde-156]

15. In restrictive lung disease there is a decrease in?
a) PEFR
b) FEV_1
c) FEV_1/FVC
d) Residual volume
e) TLC
FTFTT

Each question below contains five suggested answers- choose the <u>one best</u> response to each question (16-30)

16. Maximum airway resistance is produced by?
a) Large bronchi
b) Medium sized bronchi
c) Small airways
d) Trachea
e) None of above
B

17. Biologically active substances partially removed from the blood by the lungs includes following all except?
a) Prostaglandin
b) Serotonin
c) Histamine
d) Acetylcholine
e) Norepinephrine
C (Released into the blood) Ganong's 5th P-637

18. Effects of exercise on respiration are following except?
a) Increase pulmonary blood flow
b) Increase CO_2 formation
c) Increase CO_2 excretion
d) Increase arterial PCO_2
e) Almost normal arterial PO_2
D (Remains almost normal) Genesis note P-17

19. The strongest respiratory stimulant to breathing for central chemoreceptor is?
a) $PaCO_2$
b) PaO_2
c) P^H
d) HCo_3
e) All of above
A [ref: GS-35]

20. Intra-pleural pressure is highest during?
a) End of inspiration
b) End of expiration
c) Midpoint of expiration
d) Mid point of inspiration
e) Start of expiration
B [ref: GS-P=9]

21. Factors shifting the O_2 –Hb dissociation curve to the left except?
a) ↑PH
b) Hb F
c) Hypothyroidism
d) Pregnancy
e) Decrease temperature
D [ref: GS-P=22]

22. Percentage of protein in surfactant?
a) 2%
b) 13%
c) 8%
d) 5%
e) 33%
C [ref: GS-P=18]

23. A person IRV=3500 ml, RV=100ml, ERV=1200ml, TV=500ml then his vital capacity will be?
a) 5800ml
b) 5200ml
c) 5100ml
d) 2800ml
e) 2500ml
B (VC=IRV+ERV+TV) So VC=3500+1200+500=5200ml

24. Criteria of apex of lung includes following all except?
a) More negative intra-pleural pressure
b) Ventilation less
c) Lesser blood flow
d) Lower resistance
e) Larger alveoli
D [ref: GS-P=20]

25. Features of Pneumotaxic center includes following all except?
a) Nucleus- Para brachialis
b) Increases respiratory rate
c) Shortens the duration of inspiration
d) Its damage along with vagus nerve leads to increase RR and duration of inspiration shortens
e) Located at upper pons
D (Reduce RR &↑ duration of inspiration)[ref: GS-33]

26. A-62- years-old female with H/O fracture neck femur came to you with sudden respiratory distress ,her VA/Q will be?
a) 0
b) 1
c) Infinity
d) 0.8
e) None of above
C

27. Which one of following is not features of type-II pneumocytes?
a) Contain lamellar inclusion bodies
b) Produce surfactant
c) Helps in alveolar repair
d) Simple cuboidal
e) Makes up only 8% of surface area
E (5%)

28. Non membranous organelles includes followings all except?
a) Microtubules
b) Centrioles
c) Lysosomes
d) Actin filaments
e) Proteasomes
C

29. Which one of following is not function of Smooth endoplasmic reticulum?
a) Synthesis of phospholipid
b) Synthesis of steroid
c) Contains enzyme for glycogenolysis
d) Synthesis of immunoglobulin
e) Site of detoxification process
D

30. Which one of following is not enzymes of mitochondria?
a) Pyruvate dehydrogenase
b) Citrate synthase
c) α- ketoglutarate dehydrogenase
d) Phospholipase
e) All of above
D (GS-10)