
NEET BIOLOGY 2018-19 - Chennai

Periodic Test :15

Number of questions: 150

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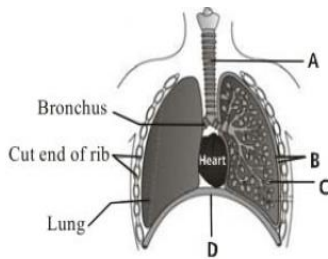
Negative Marks : 4 marks for correct attempt & 1 mark deducted for every wrong attempt.

- Lungs are made up of air-filled sacs, the alveoli. They do not collapse even after forceful expiration because
 - Inspiratory reserve volume
 - Tidal volume
 - Expiratory reserve volume
 - Residual volume
- The partial pressure of oxygen in the alveoli of lungs is
 - Equal to that in the blood
 - More than that in the blood
 - Less than that in the blood
 - Less than that of carbon dioxide
- Lungs do not collapse between breaths and some air always remain in the lungs which can never be expelled because
 - There is a negative pressure in the lungs
 - There is a negative intrapleural pressure pulling at the lung walls
 - There is a positive intrapleural pressure
 - Pressure in the lungs is higher than the atmospheric pressure
- Reduction in pH of blood will
 - Decrease the affinity of haemoglobin with oxygen
 - Release bicarbonate ions by the liver
 - Reduce the rate of heartbeat
 - Reduce the blood supply to the brain
- Name the chronic respiratory disorder caused mainly by cigarette smoking.
 - Respiratory acidosis
 - Respiratory alkalosis
 - Emphysema
 - Asthma
- Asthma may be attributed to
 - Inflammation of trachea
 - Accumulation of fluid in the lungs
 - Bacterial infection of the lungs
 - Allergic reaction of the mast cells in the lungs
- Name the pulmonary disease in which alveolar surface area involved in gas exchange is drastically reduced due to damage in the alveolar walls.
 - Pneumonia
 - Asthma
 - Pleurisy
 - Emphysema
- When you hold your breath, which of the following gas changes in blood would first lead to the urge to breathe?
 - Falling CO₂ concentration
 - Rising CO₂ and falling O₂ concentration
 - Falling O₂ concentration
 - rising CO₂ concentration

9. Approximately seventy percent of carbon dioxide absorbed by the blood will be transported to the lungs

- a) As bicarbonate ions
- b) In the form of dissolved gas molecules
- c) By binding to R.B.C
- d) As carbamino – haemoglobin

10. The figure shows a diagrammatic view of human respiratory system with labels A, B, C and D. select the option which give correct identification and main function and/or characteristic.



- a) C - Alveoli – Thin walled vascular bag like structures for exchange of gases.
- b) D – Lower end of lungs – Diaphragm pulls it down during inspiration
- c) A – Trachea – Long tube supported by complete cartilaginous rings for conducting inspired air.
- d) B – Pleural membrane – Surround ribs on both sides to provide cushion against rubbing.

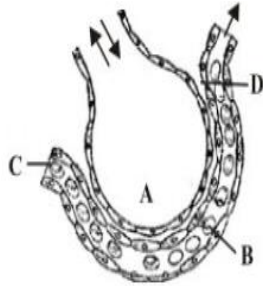
11. Which one of the following is the correct statement for respiration in humans?

- a) Cigarette smoking may lead to inflammation of bronchi
- b) Neural signals from pneumotoxic center in pons region of brain can increase the duration of inspiration.
- c) Workers in grinding and stone-breaking industries may suffer, from lung fibrosis.
- d) About 90% of Carbon Dioxide (CO_2) is carried by haemoglobins carbamino – haemoglobin.

12. People who have migrated from the plains to an area adjoining Rohtang Pass about six months back

- a) Have more RBCs and their haemoglobin has a lower binding affinity to O_2
- b) Are not physically fit to play games like football
- c) Suffer from altitude sickness with symptoms like nausea, fatigue, etc.,
- d) Have the usual RBC count but their haemoglobin has very high binding affinity to O_2 .

13. The figure given below shows a small part of human lung where exchange of gases takes place. Select the option which represents labeled part (A, B, C or D) correctly identified along with its function.



- a) C : arterial capillary – passes oxygen tissues
- b) A : alveolar cavity – main site of exchange of respiratory gases
- c) D : capillary wall – exchange of O_2 and CO_2 takes place here
- d) B : red blood cells – transport of CO_2 mainly.

14. A large proportion of oxygen remains unused in the human blood even after its uptake by the body tissues. This O_2

- a) Acts as a reserve during muscular exercise
- b) Raises the pCO_2 of blood to 75 mm of Hg.
- c) Is enough to keep oxyhaemoglobin saturation at 96%
- d) Helps in releasing more O_2 to the epithelial tissues.

15. Which one of the following is a possibility for most of us in regard to breathing, by making a conscious effort?

- a) One can breathe out air totally without oxygen.
- b) One can breathe out air through Eustachian tube by closing both nose and mouth.
- c) One can consciously breathe in and breathe out by moving the diaphragm alone, without moving the ribs at all.
- d) The lungs can be made fully empty by forcefully breathing out all air from them.

16. Bulk of Carbon dioxide (CO_2) released from body tissues into the blood is present as

- a) bicarbonate in blood plasma and RBCs
- b) free CO_2 in blood plasma
- c) 70% carbamino-haemoglobin and 30% as bicarbonate
- d) carbamino-haemoglobin in RBCs.

17. Listed below are four respiratory capacities(i-iv) and four jumbled respiratory volumes of a normal human adult.

Respiratory capacities	Respiratory volumes
i) Residual Volumes	2500mL
ii) Vital Capacity	3500mL
iii) Inspiratory Reserve volume	1200mL
iv) Inspiratory Capacity	4500mL

Which one of the following is the correct matching of two capacities and volumes?

- a) (ii) 2500mL, (iii) 4500mL
- b) (iii) 1200mL, (iv) 2500mL
- c) (iv) 3500mL, (i) 1200mL
- d) (i) 4500mL, (ii) 3500mL

18. What is true about RBCs in humans?

- a) They carry about 20-25 percent of CO_2
- b) They transport 99.5 percent of O_2
- c) They transport about 80 percent oxygen only and the rest 20 percent of it is transported in dissolved state in blood plasma
- d) they do not carry CO_2 at all

19. What is the vital capacity of our lungs?

- a) Inspiratory reserve volume *plus* expiratory reserve volume'
- b) Total lung capacity *minus* residual volume
- c) Inspiratory reserve volume *plus* tidal volume
- d) total lung capacity *minus* expiratory reserve volume

20. The haemoglobin of a human foetus

- a) has only 2 protein subunits instead of 4
- b) has a higher affinity for oxygen than that of an adult
- c) has a lower affinity for oxygen than that of the adult
- d) its affinity for oxygen is the same as that of an adult

21. The majority of carbon dioxide produced by our body cells is transported to the lungs as

- a) attached to haemoglobin
- b) dissolved in the blood
- c) as bicarbonates
- d) as carbonates

22. Which one of the following statement is incorrect?

- a) The principle of countercurrent flow facilitates efficient respiration in gills of fishes
- b) The residual air in lungs slightly decreases the efficiency of respiration in mammals
- c) the presence of non-respiratory air sacs, increases the efficiency of respiration in birds
- d) In insects, circulating body fluids serve to distribute oxygen to tissues.

23. People living at sea level have around 5 million RBC per cubic millimeter of their blood whereas those living at an altitude of 5400 metres have around 8 million. This is because at high altitude

- a) people eat more nutritive food, therefore more RBCs are formed
- b) people get pollution free air to breath and more oxygen is available
- c) atmospheric O_2 level is less and hence more RBCs are needed to absorb the required amount of O_2 to survive
- d) there is more UV radiation which enhances RBC production.

24. Blood analysis of patient reveals an unusually high quantity of carboxyhaemoglobin content.

Which of the following conclusions is most likely to be correct? The patient has been inhaling polluted air containing unusually high content of

- a) carbon disulphide
- b) chloroform
- c) carbon dioxide
- d) carbon monoxide

25. When CO_2 concentration in blood increases breathing becomes

- a) shallower and slow
- b) there is no effect on breathing
- c) slow and deep
- d) faster and deeper

26. An average person not doing hard work requires energy per day about

- a) 2000 kcal
- b) 1000 kcal
- c) 750 kcal
- d) 2800 kcal

27. Haemoglobin is a type of

- a) carbohydrate
- b) respiratory pigment
- c) vitamin
- d) skin pigment

28. The respiratory centres, which control inspiration and expiration, are located in

- a) diencephalon
- b) medulla oblongata
- c) cerebellum
- d) spinal cord

29. The exchange of gases in the alveoli of the lungs takes place by

- a) passive transport
- b) active transport
- c) osmosis
- d) simple diffusion

30. The CO₂ content by volume, in the atmospheric air is about

- a) 3.34%
- b) 4%
- c) 0.0314%
- d) 0.34%

31. In lungs, the air is separated from the venous blood through

- a) transitional epithelium + tunica externa of blood vessel
- b) squamous epithelium + endothelium of blood vessel
- c) squamous epithelium + tunica media of blood vessel
- d) none of the above

32. Which vertebrate organ receives only oxygenated blood?

- a) Spleen
- b) liver
- c) Gill
- d) Lung

33. How the transport of O₂ and CO₂ by blood happens?

- a) With the help of WBCs and blood serum
- b) With the help of platelets and corpuscles
- c) With the help of RBCs and blood plasma
- d) With the help of RBCs and WBCs

34. When 1500ml air is in the lungs, it is called

- a) residual volume
- b) inspiratory reserve volume
- c) vital capacity
- d) tidal volume

35. Lungs are enclosed in

- a) periosteum
- b) perichondrium
- c) pericardium
- d) pleural membrane

36. At high altitude, the RBCs in the human blood will

- a) increase in number
- b) decrease in number
- c) increase in size
- d) decrease in size

37. Although much CO₂ is carried in blood, yet blood does not become acidic, because

- a) CO₂ is continuously diffused through the tissues and is not allowed to accumulate
- b) in CO₂ transport, blood buffers plays an important role
- c) CO₂ is absorbed by the leucocytes
- d) CO₂ combines with water to form H₂CO₃ which is neutralized by NaCO₃

38. The carbon dioxide is transported via blood to lungs mostly

- a) in combination with haemoglobin only
- b) dissolved in blood plasma
- c) in the form of bicarbonate ions
- d) as carbaminohaemoglobin and as carbonic acid.

39. The ventilation movements of the lungs in mammals are governed by

- a) muscular walls of lung
- b) diaphragm
- c) Coastal muscles
- d) both (b) and (c)

40. The respiratory centre which regulates respiration is located in

- a) cerebellum
- b) medulla oblongata
- c) cerebral peduncle
- d) the vagus nerve

41. Carbon dioxide is transported from tissues to respiratory surface by only

- a) plasma and erythrocytes
- b) plasma
- c) erythrocytes
- d) erythrocytes and leucocytes

42. The alveolar epithelium in the lung is

- a) nonciliated columnar
- b) nonciliated squamous
- c) ciliated columnar
- d) ciliated squamous

43. Skin is an accessory organ of respiration in

- a) humans
- b) frog
- c) rabbit
- d) lizard

44. If due to some injury the chordate tendinae of the tricuspid valve of the human heart is partially non-functional, what will be the immediate effect?

- a) The flow of blood into the aorta will be slowed down
- b) The 'pacemaker' will stop working
- c) The blood will tend to flow back into the left atrium
- d) The flow of blood into the pulmonary artery will be reduced.

45. Which two of the following changes (i-iv) usually tend to occur in the plain dwellers when they move to high altitudes (3500 or more)?

- i) Increase in red blood cells size
- ii) Increase in red blood cell production
- iii) Increase Breathing rate
- iv) Increase in thrombocyte count

Changes occurring are

- a) ii) and iii)
- b) iii) and iv)
- c) i) and iv)
- d) i) and ii)

46. Fastest distribution of some injectable material/medicine and with no risk of any kind can be achieved by injecting it into the

- a) muscles
- b) arteries
- c) veins
- d) lymph vessels

47. Given below are four statements (i-iv) regarding human blood circulatory system

- i) Arteries are thick-walled and have narrow lumen as compared to veins
- ii) Angina is a acute chest pain when the blood circulation to the brain is reduced.
- iii) persons with blood group AB can donate blood to any person with any blood group under ABO system
- iv) Calcium ions play a very important role in blood clotting

Which two of the above statements are correct?

- a) i) and iv)
- b) i) and ii)
- c) ii) and iii)
- d) iii) and iv)

48. The haemoglobin content per 100ml of blood of a normal healthy human adult is

- a) 5 – 11mg
- b) 25 – 30mg
- c) 17 – 20mg
- d) 12 – 16 mg.

49. There is no DNA in

- a) mature RBCs
- b) a mature spermatozoan
- c) hair root
- d) an enucleated ovum

50. In a standard CEG which one of the following alphabets is the correct representation of the respective activity of the human heart?

- a) S – Start of a systole
- b) T – End of a diastole
- c) P – depolarization of atria
- d) R – repolarisation of Ventricles.

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