

BREATHING AND EXCHANGE OF GASES

1. Blood analysis of a patient reveals an unusually high quantity of carboxyhaemoglobin content. Which of the following conclusions is most likely to be correct? The Patient has inhaling polluted air containing high contents of:
 - (a) Carbon dioxide
 - (b) Carbon monoxide
 - (c) Carbon disulphide
 - (d) Chloroform
2. Dough kept overnight in warm weather becomes soft and spongy because of:
 - (a) Cohesion
 - (b) Osmosis
 - (c) Absorption of CO_2 from atmosphere
 - (d) Fermentation
3. SARS is caused by a variant of:
 - (a) Pneumococcus pneumoniae
 - (b) Common cold Corona virus
 - (c) Asthma
 - (d) Bronchitis
4. After deep inspiration, maximum expiration of lungs is called:
 - (a) Vital capacity
 - (b) Total lung capacity
 - (c) Inspiratory capacity
 - (d) Functional residual capacity
5. Lungs are covered by:
 - (a) Pleural membrane
 - (b) Peritoneum
 - (c) Pericardium
 - (d) None of these
6. In lungs, there is definite exchange of ions between RBC and plasma. Removal of CO_2 from blood involves:
 - (a) Efflux of Cl^- ions into RBC
 - (b) Influx of Cl^- ions into RBC
 - (c) Influx of HCO_3^- ions into RBC
 - (d) Efflux of HCO_3^- ions into RBC
7. Ascent of high mountains may cause altitude sickness in men. Prime cause of this is:
 - (a) Excess of CO_2 in blood
 - (b) Decreased efficiency of haemoglobin
 - (c) Decreased partial pressure of oxygen
 - (d) Decreased proportion of oxygen in air
8. How many ATP molecules could maximally be generated from one molecule of glucose, if the complete oxidation of one mole of glucose to CO_2 and H_2O yields 686 Kcal and the useful chemical energy available in the high energy phosphate bond of one mole of ATP is 12 Kcal?
 - (a) Two
 - (b) Thirty
 - (c) Fifty seven
 - (d) One
9. Which one of the following statements is incorrect?
 - (a) The residual air in lungs slightly decreases the efficiency of respiration in mammals
 - (b) The presence of non-respiratory air sacs increases the efficiency of respiration in birds
 - (c) In sects, circulating body fluids serve to distribute oxygen to tissues
 - (d) The principle of counter-current flow facilitates efficient respiration in gills of fishes
10. The majority of carbon dioxide produced by our body cells is transported to the lungs:
 - (a) Dissolved in blood
 - (b) As bicarbonates
 - (c) As carbonates
 - (d) Attached to haemoglobin
11. Which one of the following mammalian cells is not capable of metabolizing glucose to carbon dioxide aerobically?
 - (a) Red blood cells
 - (b) White blood cells
 - (c) Unstriated muscle cells
 - (d) Liver cells
12. Increased asthmatic attacks in certain seasons are related to:
 - (a) Low temperature
 - (b) Hot and humid environment
 - (c) Eating fruits persevered in containers
 - (d) Inhalation of seasonal pollens
13. When temperature decreases, oxy-Hb curve will become:
 - (a) More step
 - (b) Straight
 - (c) Parabola
 - (d) All of these
14. Pneumotaxic centre is present in:
 - (a) Cerebrum
 - (b) Cerebellum
 - (c) Medulla
 - (d) Pons Varolli

15. What is vital capacity of our lungs?
 (a) Inspiratory reserve volume + Expiratory reserve volume
 (b) Total lung capacity - Residual volume
 (c) Inspiratory reserve volume + Tidal volume
 (d) Total lung capacity - Expiratory reserve volume
16. When CO₂ concentration in blood increases, breathing becomes:
 (a) Shallower and slow
 (b) There is no effect on breathing
 (c) Slow the deeper
 (d) Faster and deeper
17. The epithelial tissue present on the inner surface of bronchioles and fallopian tubules is:
 (a) Cuboidal (b) Glandular
 (c) Ciliated (d) Squamous
18. Aerobic respiratory pathway is appropriately termed:
 (a) Catabolic (b) Parabolic
 (c) Amphibolic (d) Anabolic
19. The amount of volume of air that can be inspired/expired normally is called:
 (a) Tidal volume (b) Vital capacity
 (c) Residual volume (d) normal volume
20. Which of the following is called Hamburger's shift?
 (a) Hydrogen shift (b) Bicarbonate shift
 (c) Chloride shift (d) Sodium shift
21. How many heme molecules are present in one molecule of haemoglobin?
 (a) 1 (b) 2
 (c) 3 (d) 4
22. CO₂ is transported in blood mostly by means of:
 (a) Plasma
 (b) Bicarbonate ion
 (c) Carbaminohaemoglobin
 (d) None of these
23. The volume of air inspired or expired during normal respiration is called:
 (a) Tidal volume
 (b) Inspiratory reserve volume
 (c) Expiratory reserve volume
 (d) Residual volume
24. A large proportion of oxygen is left unused in the human blood even after its uptake by the body tissues. This O₂:
 (a) Acts as a reverse during muscular exercise
 (b) Raises the pCO₂ of blood of 75 mm of Hg
 (c) Is enough to keep oxyhemoglobin saturation at 96%
 (d) Helps in releasing more O₂ to the epithelial tissues
25. Two friends are eating together on a dining table, one of them suddenly starts coughing while swallowing some food. This coughing would have been due to improper movement of:
 (a) Epiglottis (b) Diaphragm
 (c) Milk (d) Tongue

CHEMICAL COORDINATION AND INTEGRATION

26. Damage to thymus in a child may lead to:
 (a) Reduction in haemoglobin content of blood
 (b) Reduction in stem cell production
 (c) Loss of antibody-mediated immunity
 (d) Loss of cell-mediated immunity
27. Which of the following is not a hereditary disease?
 (a) Cretinism (b) Hemophilia
 (c) Cystic fibrosis (d) Thalassemia
28. Which of the following diseases is not related to thyroid gland?
 (a) Myxoedema (b) Cretinism
 (c) Acromegaly (d) Goitre
29. The hormone that controls the level of calcium and phosphorus in the blood is secreted by:
 (a) Thyroid (b) Parathyroid
 (c) Pituitary (d) Thymus
30. A steroid hormone which regulate glucose metabolism is?
 (a) Cortisol
 (b) Corticosterone
 (c) 11-deoxy corticosterone
 (d) Cortisone

31. Tadpole of frog can be made to grow as giant sized tadpoles, if they are:
(a) Administered antithyroid substance like thiourea
(b) Administered large quantities of thyroxine
(c) Reared on a diet rich in egg yolk
(d) Reared on a diet rich in both egg yolk and glucose
32. Compared to a bull, a bullock is docile because of:
(a) Lower levels of adrenaline/nor-adrenalin in its blood
(b) Higher levels of thyroxine
(c) Higher levels of cortisone
(d) Lower levels of blood testosterone
33. Which part of ovary of mammals acts as an endocrine gland after copulation?
(a) Vitelline membrane
(b) Graafian follicle
(c) Stroma
(d) Germinal epithelium
34. A person is having problems with calcium and phosphorus metabolism in the body. Which one of the following glands may not be functioning properly?
(a) Thyroid (b) Parathyroid
(c) Parotid (d) Pancreas
35. Melanocyte Stimulating Hormone (MSH) is produced by:
(a) Anterior pituitary
(b) Posterior pituitary
(c) Pars intermedia of pituitary
(d) Parathyroid
36. Flight and flight hormone is:
(a) Adrenalin (b) Thyroxine
(c) ADH (d) Oxytocin
37. ADH acts on the:
(a) Collecting tubules of kidneys
(b) Loop of Henle
(c) Collecting ducts of tests
(d) None of above
38. Which one of the following pair of organs includes only the endocrine glands?
(a) Thymus and testes
(b) Adrenal and ovary
(c) Parathyroid and adrenal
(d) Pancreas and parathyroid
39. The blood calcium level is lowered by the deficiency of:
(a) Both calcitonin and parathormone
(b) Calcitonin
(c) Parathormone
(d) Thyroxine
40. Which one of the following hormones is a modified amino acids?
(a) Epinephrine (b) Progesterone
(c) Prostaglandins (d) Estrogens
41. Sertoli cells are regulated by pituitary hormone known as:
(a) FSH (b) GH
(c) Prolactin (d) LH
42. Both corpus luteum and macula lutea are:
(a) Found in human ovaries
(b) Sources of hormones
(c) Characterized by yellow colour
(d) Help in maintaining pregnancy
43. Which one of the following hormones is not a secretion product of human placenta?
(a) HCG (b) Prolactin
(c) Estrogens (d) Progesterone
44. A health disorder that results from the deficiency of thyroxine in adults and is characterized by:
(i) A low metabolic rate
(ii) Increase in body weight
(iii) Tendency to retain water in tissues is
(a) Hypothyroidism (b) Simple goitre
(c) Myxoedema (d) Cretinism
45. Excess of which of the following hormones causes Cushing's syndrome?
(a) Thyroxine (b) Cortisol
(c) Adrenaline (d) Nor-Adrenaline
46. Which of the following is correctly matched?
(a) Thyroxine – Tetanus
(b) Insulin – Diabetes insipidus
(c) Adrenaline – Hepatitis
(d) Parathyroid – Tetany
47. Antidiuretic hormone is also known as:
(a) Secretin (b) Vasopressin
(c) Gastrin (d) Renin
48. Which of the following hormones is not steroid?
(a) Androgen (b) Aldosterone
(c) Testosterone (d) Vasopressin

49. Which of the following hormones is correctly matched with its deficiency disease?
- (a) Relaxin – Gout
 - (b) Parathormone – Tetany
 - (c) Insulin – Diabetes insipidus
 - (d) Prolactin – Astigmatism
50. Function of ADH is:
- (a) Reabsorption of water
 - (b) Reabsorption of sodium
 - (c) Diluting the urine
 - (d) Increasing sugar level in urine

ANSWERS KEY

1	B	11	A	21	D	31	A	41	A
2	D	12	D	22	B	32	D	42	C
3	B	13	D	23	A	33	B	43	B
4	A	14	D	24	A	34	B	44	C
5	A	15	B	25	A	35	C	45	B
6	A	16	D	26	D	36	A	46	D
7	C	17	C	27	A	37	A	47	B
8	C	18	C	28	C	38	C	48	D
9	C	19	A	29	B	39	C	49	B
10	B	20	C	30	A	40	A	50	A