Step Academy official

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STUDENT NAME	
PAPER CODE	24392
TIME ALLOWED	
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CLASS	10th
SUBJECT	Biology
TOTAL MARKS	
Paper Type	

Choose the correct answer.

1. Respiration in living organisms always involves:

(A) carbon dioxide production **(B)** energy release **(C)** gaseous exhange **(D)** oxygen consumption

2. The disease involving breakdown of air sacs of the lungs is:

(A) pneumonia **(B)** bronchitis **(C)** asthama **(D)** emphysema

3. Which path does a molecule of oxygen take as it enters the body?

(A) bronchiole, bronchus, larynx, trachea **(B)** bronchiole, bronchus, trachea, laryn **(C)** trachea, bronchiole, bronchus, alveolus **(D)** trachea, bronchus, bronchiole, alveolus

4.
The percentage of oxygen gas in inspired is 21% and in expired air it is 16%. This difference in the amount of oxygen gas is due to the

(A) storage of oxygen gas in lung tissues **(B)** non -reactivity of oxygen gas with the blood **(C)** liberation of oxygen gas as a metabolic waste **(D)** utilisation of oxygen gas in energy production

5. CO_2 produced by plants is used for:

(A) photosynthesis **(B)** synthesis **(C)** osmosis **(D)** endocytosis

6. In asthma, shortness of breath occurs due to

(A) constriction of bronchi **(B)** rupturing of alveolar walls **(C)** rupturing of bronchial walls **(D)** accumulation of pus in alveoli

7. What is the percentage of oxygen in expired air when a person is resting?

(A) 8% **(B)** 12% **(C)** 16% **(D)** 20%

8. Which blood vessel surrounds the alveoli?

(A) capillary **(B)** vein **(C)** venule **(D)** artery

9. In humans during expiration:

(A) diaphragm is lowered and ribs are raised

(B) both diaphragm and ribs are raised

(C) diaphragm is raised and ribs are lowered

(D) both diaphragm and ribs are lowered

10. The gaseous exchange portion of the human respiratory system is the:

(A) trachea **(B)** bronchi **(C)** larynx **(D)** aleoli

11. Which process does not use energy released by respiration?

(A) active transport to the glucose into the villi

(B) diffusion of oxygen across the alveolar surface

(C) maintenance of constant body temperature

(D) passage of nerve impulse

12. One reason for emphysema is:

(A) smoking **(B)** exercise **(C)** food **(D)** iron deficiency

13. When you inhale, the diaphragm:

(A) relaxes and moves upward

(B) relaxes and moves downward

(C) contracts and moves upward

(D) contracts and moves downward

14. In a kidney machine, which of the following passes from the blood to the dialysis fluid?

(A) glucose **(B)** plasma protein **(C)** red blood cells **(D)** urea

15. Osmoregulation involves

(A) active transport **(B)** diffusion **(C)** facilitated diffusion **(D)** osmosis

16. Which blood vessel carries blood with the lowest concentration of urea?

(A) hepatic portal vein **(B)** pulmonary vein **(C)** renal vein **(D)** vena cava

17. Which substance is present at a lower concentration in the renal artery than in the renal vein?

(A) amino acid **(B)** carbon dioxide **(C)** glucose **(D)** urea

18. Urine passes from bladder to the:

(A) medulla **(B)** urethra **(C)** ureter **(D)** cortex

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20. Choose the mismatched

(A) Gums-Keekar **(B)** Latex-Tomato **(C)** Resin-Pinus **(D)** Mucilage-Lady finger

21. Choose the mismatched

(A) Gums-Keekar **(B)** Latex-Tomato **(C)** Resin-Pinus **(D)** Mucilage-Lady finger

22. Nephron, the functional unit of kidney is composed of all of the following except:

(A) Bowman's capsules **(B)** loop of Henle **(C)** glomerulus **(D)** ureter

23. The metabolic waste of a man includes all of the following except:

(A) carbon dioxide **(B)** undigested food **(C)** urea **(D)** water

24. In a kidney machine what must be at the same concentration in the dialysis fluid and in the blood?

(A) glucose **(B)** salt **(C)** urea **(D)** water

25. When a person is frightened, which substance increases the blood sugar level?

(A) adrenaline **(B)** amylase **(C)** glycogen **(D)** insulin

26. The correct order of three auditory ossicles is:

(A) malleus, incus, stapes **(B)** incus, malleus, stapes **(C)** malleus, stapes, incus **(D)** stapes, malleus, incus

27. Which of the following statement is true for the eustachain tube?

(A) it separates middle ear from inner ear **(B)** it has sound receptor cells **(C)** it regulates air pressure on both sides of the tympanum **(D)** it directs sound waves to inner ear

28. Animals maintain coordination due to:

(A) regeneration **(B)** nervous system **(C)** excretion **(D)** reproduction

29. Which one of the following is an example of nervous disorder?

(A) proteolysis **(B)** plasmolysis **(C)** haemolysis **(D)** paralysis

30. Thyroid gland has the ability to store:

(A) iodine **(B)** chlorine **(C)** fluorine **(D)** zinc

31. Nerve impulse is best described as:

(A) chemical **(B)** electrical **(C)** osmotic **(D)** electrochemical

32. Islet of Langerhans are part of the:

(A) thyroid gland **(B)** adrenal gland **(C)** pancreas **(D)** gonads

33. Which part of the brain detects temperature changes in the blood?

(A) cerebellum **(B)** cerebral hemispheres **(C)** hypothalamus **(D)** medulla

34. How many types of neurons are there in the nervous system of man?

(A) two **(B)** three **(C)** four **(D)** five

35.

(A) **(B)** **(C)** **(D)**

36. Which one of the following glands lies above the kidney:

(A) neuron **(B)** muscle cell **(C)** nephron **(D)** cardiac cell

37. In contrast to nerve Is, the response produced by hormones takes longer because:

(A) hormones are specific in their action **(B)** hormones are transported through blood. **(C)** hormones are produced in small amounts. **(D)** the molecules of hormones are small in size.

38. Where are hormones destroyed?

(A) adrenal glands **(B)** kidney **(C)** liver **(D)** pancreas

39. Which one of the following is NOT true for biceps?

(A) relax during extension **(B)** relax during flexion **(C)** present on front of upper arm **(D)** cause bending of arm

40. How many vertebrae are there in the vertebral column of man?

(A) 23 **(B)** 26 **(C)** 36 **(D)** 43

41. Bones are held together with each other and joints by:

(A) nerve **(B)** ligament **(C)** tendon **(D)** smooth muscle

42. How many pairs of ribs make up the chest cage of men?

(A) 10 **(B)** 11 **(C)** 12 **(D)** 13

43. The bone at the elbow joint bend by the contraction of :

(A) flexor muscle **(B)** extensor muscle **(C)** smooth muscle **(D)** ligament

44. The bone that belongs to the appendicular skeleton of human beings is:

(A) femur **(B)** stapes **(C)** sternum **(D)** hyoid bone

45. Gouty arthritis is primarily caused due to:

(A) degeneration of cartilage **(B)** inflammation of membrane at joint **(C)** decreased calcium levels in bones **(D)** Accumulation of uric acid acid crystals

46. The total number of bones in human body is:

(A) 206 **(B)** 208 **(C)** 210 **(D)** 212

47. The purpose of skull is:

(A) Protect the lungs and heart **(B)** Protect the brain **(C)** Protect the spinal cord **(D)** Protect the stomach

48. In how many dimensions does not elbow joint allows movement:

(A) one **(B)** two **(C)** three **(D)** several

49. In which disease swelling of bone joints occurs?

(A) appendicitis **(B)** osteoporosis **(C)** arthritis **(D)** bronchitis

50. Muscles are attached to bones by:

(A) smooth muscles **(B)** ligament **(C)** tendon **(D)** nerve

51. The place where two bones meet is called:

(A) joints **(B)** point **(C)** ligament **(D)** tendon

52. Which one of the following is NOT true about ligament?

(A) Are strong **(B)** Flexible bands **(C)** Join bone to bone **(D)** Join muscle to bone

53. The main components of cartilage are:

(A) Collagen, Chondrocytes and elastic fibres **(B)** Collagen and elastic fibres **(C)** Collagen, Osteocytes and tough fibres **(D)** Osteocytes and bone marrow

54. The offspring from asexual reproduction in plants are likely to:

(A) be more resistant than their parent to disease **(B)** develop into a new variety **(C)** grow bigger than their parent **(D)** have the same flower colour as their parent

55. In addition to water , what is essential for the germination of seed?

(A) carbon dioxide **(B)** oxygen and suitable temperature **(C)** oxygen and soil **(D)** soil and suitable temperature

56. After fertilization which structures develops into the seed of a flowering plant?

(A) carpel **(B)** ovum **(C)** ovule **(D)** style

57. It is an example of sexually transmitted disease:

(A) malaria **(B)** ulcer **(C)** arthritis **(D)** AIDS

58.

The disease in which virus destroys white blood cells and results in loss of immunity against infections is called:

(A) Lung cancer **(B)** AIDS **(C)** Arteriosclerosis **(D)** Pneumonia

59. Fruit is formed by the enlargement of :

(A) embryo in the ovule **(B)** ovary containing the seed **(C)** anthers **(D)** sepal

60. How many sperms are involved in fertilization in a flower?

(A) one **(B)** two **(C)** three **(D)** four

61. Spores are produced in a structure known as:

(A) capsule **(B)** sporangium **(C)** bud **(D)** sporangiophore

62. It is found in the female reproductive system of a rabbit

(A) seminal vesicle **(B)** uterus **(C)** epididyrmis **(D)** tastes

63. Which flower structure produce pollen?

(A) anther **(B)** petal **(C)** carpel **(D)** stigma

64. Parthenogenesis involves:

(A) sexual reproduction **(B)** a process by which an unfertilized egg develops by itself **(C)** both sexes being expressed in one individual **(D)** reproduction in mammals

65. Which of the following alleles is co-dominant?

(A) B, O **(B)** A, O **(C)** A, B **(D)** AB, BO

66. The breeding of domesticated plants and animals refers to:

(A) natural selection **(B)** artificial selection **(C)** wild selection **(D)** selection by chance

67. The 9 :3:3:1 ratio is a F2 ratio of :

(A) phenotypes in a dihybrid cross **(B)** phenotypes in a monohybrid cross **(C)** genotypes in dyhybrid cross **(D)** genotypes in monohybrid cross

68. The number of chromosomes in man is:

(A) 49 **(B)** 45 **(C)** 46 **(D)** 47

69. Which one of the following is a hereditary disease?

(A) polio **(B)** haemophilia **(C)** typhoid **(D)** cholera

70.
A particular characteristic is controlled by dominant allele, A, and a recessive allele, a. Which cross would give a 1:1 ratio of the two phenotypes among the offspring?

(A) AA × aa **(B)** Aa × AA **(C)** Aa × Aa **(D)** Aa × aa

71. Incomplete dominance is exhibited by:

(A) four o' clock **(B)** pea **(C)** rose **(D)** sunflower

72. Mendel studied heredity in:

(A) maize **(B)** pea **(C)** sheep **(D)** rose

73. R-2 means:

(A) Reduce **(B)** Recycle **(C)** Renewable **(D)** Reuse

74. Habitat's destruction can result in a loss of :

(A) species **(B)** community **(C)** land **(D)** ecosystem

75. Ecosystem constitute:

(A) population **(B)** environment **(C)** community and food chain **(D)** habitat

76. Sunlight, temperature, air water are examples of :

(A) biotic factor **(B)** abiotic factors **(C)** nutrients **(D)** mineral resourxes

77. All the members of species inhabiting a given location makeup a:

(A) community **(B)** population **(C)** ecosystem **(D)** biomes

78. Sunlight, temperature, air water are examples of :

(A) biotic factor **(B)** abiotic factors **(C)** nutrients **(D)** mineral resourxes

79. A relationship between species in which one species benefits and the other is harmed is called:

(A) symbiosis **(B)** commensalism **(C)** parasitism **(D)** predator

80. The function of fungi in an ecosystem is to:

(A) provide oxygen gas to producers **(B)** return nutrients to the environment **(C)** increase complexity of food chains **(D)** decrease competition among consumers

81. A network of all the feeding relationship in an ecosystem is called:

(A) a food chain **(B)** a food web **(C)** trophic level **(D)** energy flow

82.

The organization that works with governments for mass awareness and research on the conservation of natural resources is called:

(A) UNDP **(B)** UNCP **(C)** SCOPE **(D)** WWF

83. The causes of acid rain is:

(A) air pollution **(B)** water pollution **(C)** land pollution **(D)** noise pollution

84. The establishment of new forests by planning on non-forest areas is called:

(A) Deforestation **(B)** Afforestation **(C)** Concretion **(D)** Assimilation

85. How many people are at risk from dengue?

(A) 1.5 billion **(B)** 2.0 billion **(C)** 2.5 billion **(D)** 3.0 billion

86. The UNDP launched the project "Mass Awareness for Water Conservation and Management" in:

(A) 2003 **(B)** 2004 **(C)** 2005 **(D)** 2006

87. Fermenter is also known as:

(A) biosynthesis **(B)** bioreactor **(C)** biohazard **(D)** atomic reactor

88. These are used in making yogurt:

(A) bacteria **(B)** fungi **(C)** yeast **(D)** alga

89. It is an example of industrial fermentation:

(A) penicillin **(B)** antigens **(C)** antibodies **(D)** toxins

90. The use and applications of inventions and discovers in science is called:

(A) applied science **(B)** technology **(C)** biotechnology **(D)** genetic engineering

91. A bacterium is considered genetically modified when it has:

(A) a foreign gene **(B)** many plasmids **(C)** a complete genome **(D)** restriction endonucleases

92. Interferons are special proteins produced by human cells that:

(A) Reduce pain **(B)** Cure thalassemia **(C)** Dissolve blood clots **(D)** Limit spread of viral infections

93. The first antiseptic was discovered by:

(A) Joseph Lister **(B)** Louis Pasteur **(C)** Edward Jenner **(D)** Gregor Mendel

94. Vaccine combat diseases through:

(A) antigen **(B)** antibodies **(C)** antibiotic **(D)** serum

95. Which of the following is an addictive drug which is sometimes injected for relief of severe pain?

(A) alcohol **(B)** aspirin **(C)** nicotine **(D)** morphine

96. An example of antibiotic is:

(A) aspirin **(B)** morphine **(C)** alcohol **(D)** tetracycline

97. The drugs that are classified as medicinal drugs are:

(A) antibiotics and heroin **(B)** caffeine and antibiotics **(C)** anaesthetics and caffeine **(D)** anaesthetics and analgesics

98. Which substance is a depressant drug?

(A) nicotine **(B)** heroin **(C)** penicillin **(D)** valium

99. Which disease can usually be cured with antibiotics?

(A) pneumonia **(B)** malaria **(C)** polio **(D)** small pox

100. The drugs which reduce anxiety and high dose induce sleep are called:

(A) sedatives **(B)** analgesics **(C)** narcotics **(D)** hallucinogens

. Write short answers of the following questions.

1 . Name the structure through which exchange of gases can take place in plants.

2 . Why do plants not need specialized respiratory system?

3 . What is the effect of exercise on the rate of breathing?

4 . How viral infections like Covid-19 affect bronchi?

5 . Differentiate between respiration and photosynthesis.

6 . Differentiate between smoker and passive smoker.

7 . Differentiate between aerobic and anaerobic respiration.

8 . Differentiate between Glottis and epiglottis.

9 .
What are the conditions necessary for efficient gaseous exchange between organism and environment?

10 . Why is excretion necessary?

11 . How carbon dioxide and oxygen are removed from plants?

12 . How carbon dioxide and oxygen are removed from plants?

13 . How carbon dioxide and oxygen are removed from plants?

14 . Name the structures of urinary system.

15 . Write the functions of ureter.

16 . Write the functions of urethra.

17 . Write the functions of capsule of kidney.

18 . Name the disorders of kidney.

19 . Write any two similarities between dialysis machine and a real kidney.

20 . Name the structures in the urinary system of man that is associated with each of these re-absorption.

21 .
Name the structures in the urinary system of man that is associated with each of these temporary storage of urine.

22 . The right kidney is slightly lower than the left one. Why?

23 . Differentiate between cerebrum and cerebellum.

24 . Differentiate between voluntary and involuntary action.

25 . Differentiate between short-sightedness and long-sightedness.

26 . Differentiate between endocrine glands and exocrine glands.

27 . Why the plants have a very slow response to stimuli?

28 . Name two functions of cerebellum.

29 . Name the components of a reflex arc.

30 . What is negative feedback?

31 . Give the proper biological names for light sensitive layer of these parts of the eye?

32 . Give the proper biological names for delicate, transparent layer at the front of the eye?

33 . Give the proper biological names for jelly like substance that keeps the eye in shape.

34 . Give the proper biological names for black middle layer of these parts of the eye.

35 . How is the spinal cord protected?

36 . How is insulin important?

37 . Why are the Ibn -al- Haitham scientists famous?

38 .
How do the 'messages' sent by the endocrine system differ from those carried by the nervous system?

39 .

Two patients A & B presented at the ophthalmology department of hospital, person A diagnosed with defective rod cells and person B diagnosed with defective cone cells. Where are the rod and cone cells located in the eye?

40 .
Two patients A & B presented at the ophthalmology department of hospital, person A diagnosed with defective rod cells and person B diagnosed with defective cone cells. What type of problems will be faced to the person B?

41 . What are the two system of coordination in man? Explain.

42 . Distinguish between axial and appendicular skeleton.

43 . Distinguish between hinge joint and ball and socket joint.

44 . Distinguish between hinge joint and ball and socket joint.

45 . Distinguish between fibrocartilage and elastic cartilage.

46 . Distinguish between origin and insertion.

47 . Distinguish between flexor and extensor.

48 . Explain the stutures of the skull are fixed joints.

49 . Why do you need to exercise regularly?

50 . Which structures attach bones to bones.

51 . Which structures act as shock- absorbers at the end of bones.

52 . Briefly write about human appendicular skeleton.

53 . Name the types of asexual reproduction in bacteria and protists.

54 . What are the advantages and disadvantages of vegetative propagation?

55 . Write the difference between epigeal and hypogeal germination.

56 . Write the difference between self pollination and cross pollination.

57 . Write the difference between external fertilization and internal fertilization.

58 . State the contribution of Theophrastus in the discovery of sex in plants.

59 . Name some ripened ovaries and ovules eaten in daily life.

60 . What are the adaptations in insect pollinated flowers for cross pollination?

61 . How spore formation takes place in Rhizopus?

62 .
State the role of National AIDS control program and different NGOs in educating people with reference to AIDS in Pakistan.

63 . Write the differences between antigen and antibodies.

64 . Write the differences between discontinuous and continuous variation.

65 . Name sources of variation.

66 . What kind of gametes would be produced by organisms having the AaBB genotypes?

67 . What kind of gametes would be produced by organisms having the AAbb genotypes?

68 . What is the importance of decomposers in an ecosystem?

69 . Why does an ecosystem need a continuous supply of sunlight?

70 . Distinguish between host and parasite.

71 . At which trophic level/s will you place Human.

72 . At which trophic level/s will you place Pitcher plant.

73 . At which trophic level/s will you place Cockroach.

74 . Relate what will happen in an ecosystem due to population growth of predator.

75 . Relate what will happen in an ecosystem due to population growth of competitor.

76 . Relate what will happen in an ecosystem due to population growth of host.

77 . Relate what will happen in an ecosystem due to population growth of commensal.

78 . What is nitrogen fixation?

79 . Discuss global and regional environment problems.

80 . Name the organism used in fermentation for the making of bread.

81 . Name the organism used in fermentation for the making of cheese.

82 . Name the medical products produced by large scale fermentation.

83 .
Microbes are commonly used in biotechnology. What are the advantages of microbes can reproduce quickly features of microbe growth?

84 .
Microbes are commonly used in biotechnology. What are the advantages of microbes are very efficient protein producers features of microbe growth?

85 . How do bubbles of carbon dioxide gas help to make bread?

86 . What are the Joseph Lister scientists famous?

87 . What are the symptoms of addiction?

88 . How resistance develops in bacteria against antibiotics?

89 . Name any two diseases which have been almost wiped out by vaccination.

90 . State any TWO conditions for which sedatives are prescribed by doctors.

Write detailed answers of the following questions.

1 . Describe the structure of human respiratory system?

2 . State the signs and symptoms, causes and treatments of bronchitis, emphysema and pneumonia.

3 . Explain osmotic adjustment in plants?

4 . Describe human urinary system.

5 . Explain the process of urine formation in man.

6 . What is coordination? Explain.

7 . Draw, label cross section of spinal cord and write its structure and function.

8 . Explain reflex action with diagram.

9 . Give the functional detail of Pituitary gland, Pancreas and Thyroid gland, also mention their disorders.

10 . Write about the different types of cartilage.

11 . Describe the main components of human skeleton.

12 . Describe different types of asexual reproduction in plants.

13 . Explain the life cycle of a flowering plant with the help of a labelled diagram.

14 . Describe the structure of a gram seed.

15 . What is gametogenesis? Explain the process of spermatogenesis and Oogenesis in animals.

16 . Given an account of genes and alleles.

17 . State and explain Mendel's law of segregation.

18 . What is co-dominance? Explain with reference to ABO blood group system.

19 . Assess selection as a possible means of evolution.

20 . Describe levels of organization in ecology?

21 . Discuss briefly interaction between components of ecosystem?

22 . Write a note on human impact on environment.

23 . Write a note on food chain and food web.

24 . Define carbon cycle.

25 . Give an account of water and land pollution.

26 . What is the importance of biotechnology?

27 . Describe the process of fermentation. What is the procedure of using fermenter?

28 . What is the single cell protein? Write its importance and significance as animal and human food.

29 . What are drugs? What are the sources of drugs?

30 . What are addictive drugs? Write their types and effects. What are the problems of drug addictions?