

2023 SUPER MOCK BIOLOGY 2

PAPER 1

50 minutes

[50 marks]

Answer **all** the questions.

Each question is followed by **four** options lettered **A** to **D**. Find out the correct option for **each** question and shade **in pencil** on your answer sheet, the answer space which bears the same letter as the option you have chosen. Give only **one** answer to **each** question.

1. The ability of organisms to maintain a constant internal environment is known as
- diuresis
 - endosmosis
 - homeostasis
 - plasmolysis

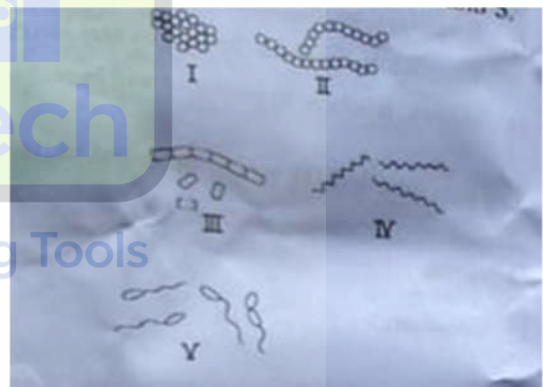
The diagram below is an illustration of a mango leaf drawn by a student in a Biology test. The student failed the test. Study it and answer questions 2 and 3.



2. The likely reason the student failed the test was that the
- labels were wrong and the guidelines were not touching the structures
 - net venation shown were few, rough, not properly drawn and wrongly placed
 - leaf was too tapered at the apex, the leaf stalk was too short and the shape leaf was wrong
 - leaf venation should have been parallel and the midrib should be thicker.

3. Which other features of the diagram, if shown, would have earned the student more marks?
- colour and size
 - title and magnification
 - habitat and agricultural qualities of a leaf
 - Spelling of label and length of midrib

The diagrams below are illustrations of forms in which a particular group of organisms exist. Study them and answer questions 4 and 5



4. Which group of organisms is illustrated?
- Bacteria
 - Viruses
 - Fungi
 - Protozoa
5. In which of the illustrated forms does the organism that causes cholera exist?
- II
 - III
 - IV
 - V

Study the list of organisms below and use them to answer Questions 6 and 7.

- I – Hydra
- II – Owl
- III – Snake
- IV – Snail

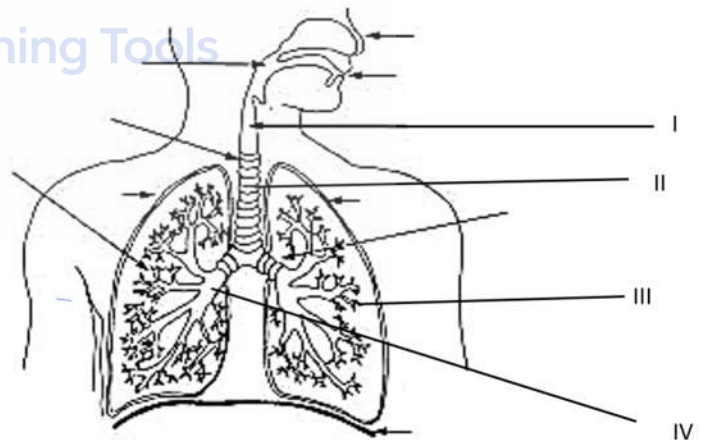
6. Arrangement of the organisms in order of increasing complexity is
 - A. I – II – III – IV
 - B. II – III – I – IV
 - C. I – IV – III – II
 - D. IV – III- II - I
7. The phylum of the organism labelled IV is
 - A. Coelenterata
 - B. Platyhelminthes
 - C. Mollusca
 - D. Arthropod
8. An example of a process that involves osmosis is the
 - A. movement of digested food from ileum into blood capillaries
 - B. translocation of starch from leaves to all parts of a plant
 - C. reabsorption of food nutrients from kidney into blood capillaries
 - D. movement of water from root hairs to cortical cell
9. Growth in animals differs from that in plants because growth in
 - A. plants is intercalary
 - B. animal is apical
 - C. plants is from within
 - D. plants is indefinite

The diagram below is an illustration of a structure in the skeletal system of humans. Study it and answer questions 10 and 11.



10. The illustrated structure is part of the
 - A. cervical vertebrae
 - B. axial skeleton
 - C. axis vertebrae
 - D. appendicular skeleton
11. An individual was involved in a car accident and the illustrated structure was badly injured. Which of the following structures would most likely be affected?
 - A. Lumbar, eye and teeth
 - B. Ear, brain and hinge joint
 - C. Eye, cerebellum and ear
 - D. Clavicle, tongue and pelvis
12. The tricuspid valve is located between the
 - A. left auricle and left ventricle
 - B. right auricle and superior vena cava
 - C. aorta and left ventricle
 - D. right auricle and right ventricle

The diagram below is an illustration of some structures used for gaseous exchange in humans. Study it and answer Questions 13 and 14.



13. The parts labelled I II III and IV respectively are
 - A. larynx, bronchus, bronchiole and trachea
 - B. bronchus, bronchiole, trachea and larynx
 - C. bronchiole, trachea, bronchus and larynx
 - D. larynx, trachea, bronchiole and bronchus

14. The part labelled III would be found in the
A. heart
B. lung
C. kidney
D. sternum
15. Which of the following hormones is wrongly paired with its secretory organ?
A. Insulin and pancreas
B. Oestrogen and ovary
C. Oxytocin and hypothalamus
D. Adrenalin and kidney
16. The eye defect caused by an uneven curvature of the cornea or lens or both is
A. myopia
B. astigmatism
C. presbyopia
D. hypermetropia
17. The androecium in a flowering plant is a collection of
A. ovules
B. stamens
C. filaments
D. sperms
18. Placentation in fruits is referred to as the
A. part of the ovary where the ovules originate and remain till maturity
B. formation of a single carpel joined at the two edges of an ovule
C. arrangement of ovules in the ovary of a flower
D. ovules borne on a central column of tissues in an ovary
19. Which of the following processes does not occur during photosynthesis?
A. Oxygen is evolved
B. Water is split
C. Carbon (IV) oxide is evolved
D. Energy from sunlight is absorbed
20. Stunted growth and small leaves yellow leaves in plants are symptoms of deficiency of
A. magnesium
B, iron
C. Sulphur
D. nitrogen
21. The structure that its action could result in choking when talking and eating at the same time is
A. liver
B. oesophagus
C. epiglottis
D. stomach
22. The food substance that would produce the highest amount of energy is
A. protein
B. fat
C. amino acid
D. glucose
23. Organisms that feed on dead decaying tissues of other organisms are known as
A. saprophytes
B. autotrophs
C. heterotrophs
D. parasites
24. The type of nutrition in which organisms take in solid organic materials into their body is
A. symbiotic
B. holozoic
C. saprophytic
D. parasitic
25. The mouthparts of a grasshopper are adapted for
A. absorption
B. grinding
C. sucking
D. chewing

26. A group of organisms belonging to different species that coexist in the same habitat and interact with each other is referred to as
- biosphere
 - population
 - niche
 - community
27. Which of the following factors is the main problem facing xerophytes?
- poor formation of roots
 - competition for sunlight
 - lack of adequate water
 - conservation of excess water
28. Fishes survive in water mainly because they possess
- paired fins
 - scales
 - streamlined body
 - gills
29. Which of the following instruments is not used in measuring abiotic factors in a habitat?
- Wind vane
 - Thermometer
 - Hygrometer
 - Microscope
30. Which of the following soil types have a high capillarity?
- Sand and loam
 - Silt and clay
 - Sand and silt
 - Clay and sand
31. The capturing and digestion of insects by a pitcher plant is a special form of nutrition that is
- Chemosynthetic
 - autotrophic
 - saprophytic
 - heterotrophic
32. Which of the following organisms would be the producer in a food chain?
- Man
 - Maize
 - Goat
 - Bacterium
33. The nephron is supplied with blood by the
- aorta
 - carotid artery
 - renal artery
 - subclavian artery
34. One advantage of internal fertilization is for
- closer partnership between mates
 - better security for foetus
 - inheritance of greater maternal characteristics
 - shorter gestation period
35. Which of the following arthropods possesses two pairs of antennae?
- Cockroach
 - Crayfish
 - Millipede
 - Spider
36. The hormone involved in tropic movement in plants is
- abscisic acid
 - auxin
 - cytokinin
 - gibberellin
37. Which of the following valves prevent backflow of blood through the pulmonary artery?
- Bicuspid valve
 - Left semi-lunar valve
 - Right semi-lunar valve
 - Tricuspid valve
38. Organisms which excrete ammonia as the main nitrogenous waste live
- on the desert
 - in water
 - in the soil
 - on moist soil

39. The parasympathic nervous system is responsible for
- dilation of arteries of the alimentary canal
 - acceleration of the heart beat
 - relaxation of the bladder
 - constriction of the arteries of the skeletal muscles
40. The moisture content of expired air is
- super saturated
 - the same as expired air
 - less saturated than inspired air
 - more saturated than inspired air
41. The tide of the sea is highest when
- many flooding rivers flow into the sea
 - several organisms swim towards the shore
 - heavy rains cause severe storms
 - the pull on the land by the moon and the sun is in the same phase
42. The cell associated with the phloem tissue is the
- companion cell
 - sieve tube element
 - subsidiary cell
 - cork cell
43. Which of the following resources is renewable?
- Coal
 - Soil
 - Solar energy
 - Vegetation
44. In carnivores, the least developed teeth are the
- canines
 - incisors
 - molars
 - premolars
45. One of the microelements required by plants is
- calcium
 - iron
 - manganese
 - magnesium
46. Which of the following secretions contains rennin?
- Gastric juice
 - Pancreatic juice
 - Saliva
 - Succus entericus
- Use the following events leading to the clotting of blood to answer Questions 47 to 49.*
- Formation of meshwork across damaged blood vessels
 - II. Conversion of prothrombin into thrombin
 - III. Trapping of blood vessels in meshwork
 - IV. Conversion of fibrinogen into fibrin
47. Which of the following arrangements is the correct order of events?
- I, II, IV and II
 - II, I, and IV
 - II, I and III
 - IV, I, III and II
48. Which of the events is catalyzed by calcium ions?
- I
 - II
 - III
 - IV
49. Enzymes are involved in events
- I and II
 - I and IV
 - II and III
 - II and IV
50. If the haploid number of chromosomes in an organism is 26, then the chromosome number of each sperm is
- 13
 - 26
 - 52
 - 78

END OF PAPER