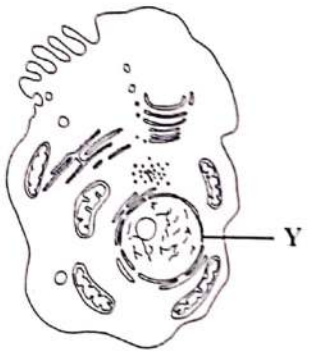
1. Photosynthesis occurs in the

(A) nucleus
(B) cell wall
(C) chloroplast
(D) mitochondrion

2. The structure responsible for the transfer of characteristics from parents to offspring is found in the

(A) vacuole
(B) cytoplasm
(C) chromosome
(D) cell membrane

Item 3 refers to the following diagram which shows an animal cell.



3. What is the name of the part labelled **Y**?

(A) Nucleus
(B) Cytoplasm
(C) Mitochondrion
(D) Chromosome

4. Which of the following statements about photosynthesis is TRUE?

(A) Oxygen is absorbed by the chlorophyll.
(B) Water is a by-product of the process.
(C) The process results in the release of energy.
(D) Carbon dioxide is used by the chlorophyll.

5. Which nutrient is important for building strong muscles?

(A) Fat
(B) Sugar
(C) Starch
(D) Protein

---

6. Which of the following word equations represents the process of photosynthesis?

(A) Carbon dioxide + Water $\xrightarrow{\text{Energy}}$ Sucrose + Oxygen

(B) Carbon dioxide + Water $\xrightarrow{\text{Energy}}$ Glucose + Oxygen

(C) Alcohol + Oxygen $\longrightarrow$ Carbon dioxide + Water + Energy

(D) Oxygen + Glucose $\longrightarrow$ Carbon dioxide + Water + Energy

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7. Which of the following pollutants has a strong affinity for haemoglobin?

(A) Lead dioxide
(B) Methane
(C) Sulphur dioxide
(D) Carbon monoxide

8. Which of the following are common features of respiratory surfaces?

I. Moist
II. Small surface area
III. Well supplied with blood vessels

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

9. Which of the following are significant sources of air pollution?

I. Volcanic eruptions
II. Extensive use of cars
III. Dumping of plastic bottles

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

10. Which of the following blood groups has no antigen?

(A) A
(B) B
(C) O
(D) AB

Item 11 refers to the following diagram which represents a component of blood.



11. What is the function of this blood component?

(A) Fights infection
(B) Transports oxygen
(C) Forms blood clots
(D) Transports dissolved foods

12. The part of the heart that separates the left side from the right is the

(A) valve
(B) tendon
(C) septum
(D) pacemaker

13. Which of the following processes are associated with excretion by the kidneys?

I. Evaporation
II. Filtration
III. Reabsorption

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

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Items **14–15** refer to the following hormones.

(A) Adrenaline
(B) Insulin
(C) Prolactin
(D) Secretin

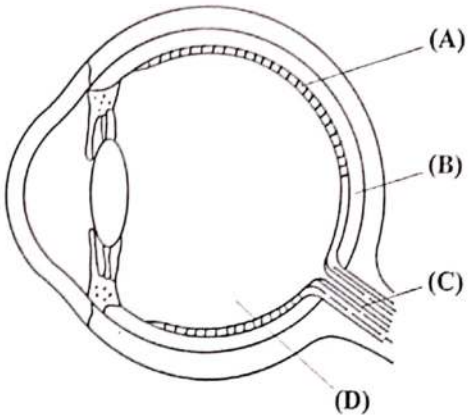
In answering Items **14–15**, each option may be used once, more than once, or not at all.

Which of the above hormones

14. regulates the level of blood sugar in humans?

15. is produced in emergency situations?

Item **16** refers to the following diagram of the eye.



16. Which structure transmits impulses to the brain?

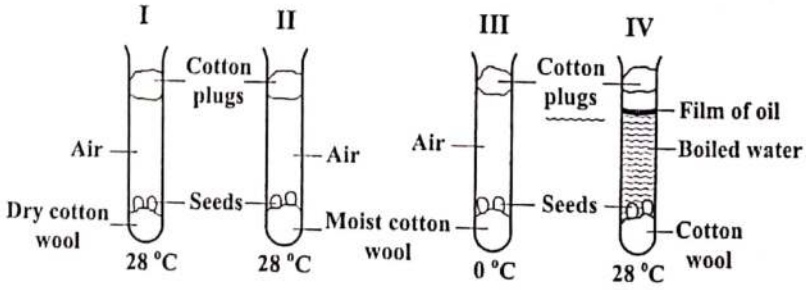
Item **17** refers to the following sexually transmitted diseases.

I. AIDS
II. Herpes
III. Syphilis
IV. Gonorrhoea

17. Which two diseases are caused by bacteria?

(A) I and II
(B) I and III
(C) II and IV
(D) III and IV

Item **18** refers to the following diagrams which display seeds under different conditions in four test tubes, plugged with cotton wool.



18. In which test tube is germination MOST likely to take place?

(A) I
(B) II
(C) III
(D) IV

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19. The testes of the human male correspond to the anthers of flowers because they both

(A) are separate organs
(B) have similar shapes
(C) produce male sex cells
(D) have tubes leading from them

20. Which of the following completes the following path to fertilization in plants?

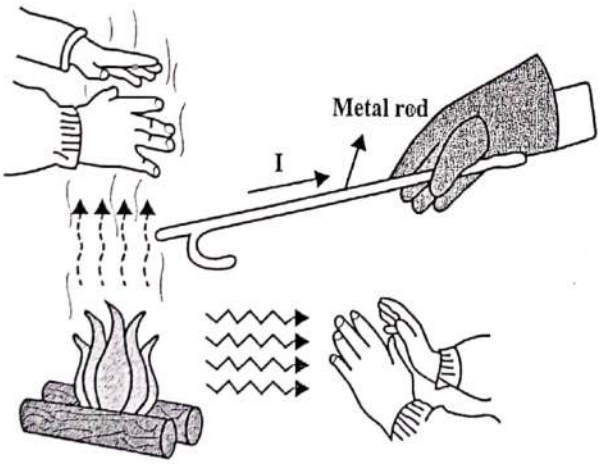
Pollen → ---------- → Ovary

(A) Petal
(B) Stigma
(C) Stamen
(D) Receptacle

21. Solar energy is transferred through space by

(A) radiation
(B) convection
(C) conduction
(D) evaporation

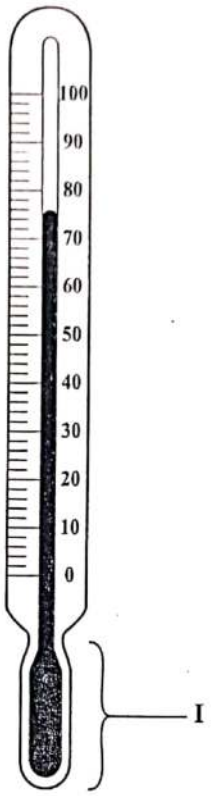
Item 22 refers to the following picture showing the methods of heat transfer.



22. The method of heat transfer at **I** is

(A) radiation
(B) convection
(C) conduction
(D) evaporation

Item 23 refers to the following diagram of a thermometer.



23. The part labelled **I** is the

(A) bulb
(B) stem
(C) bore
(D) glass

24. Which of the following farming techniques are recommended to prevent soil erosion?

I. Terracing
II. Contour farming
III. Strip planting

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

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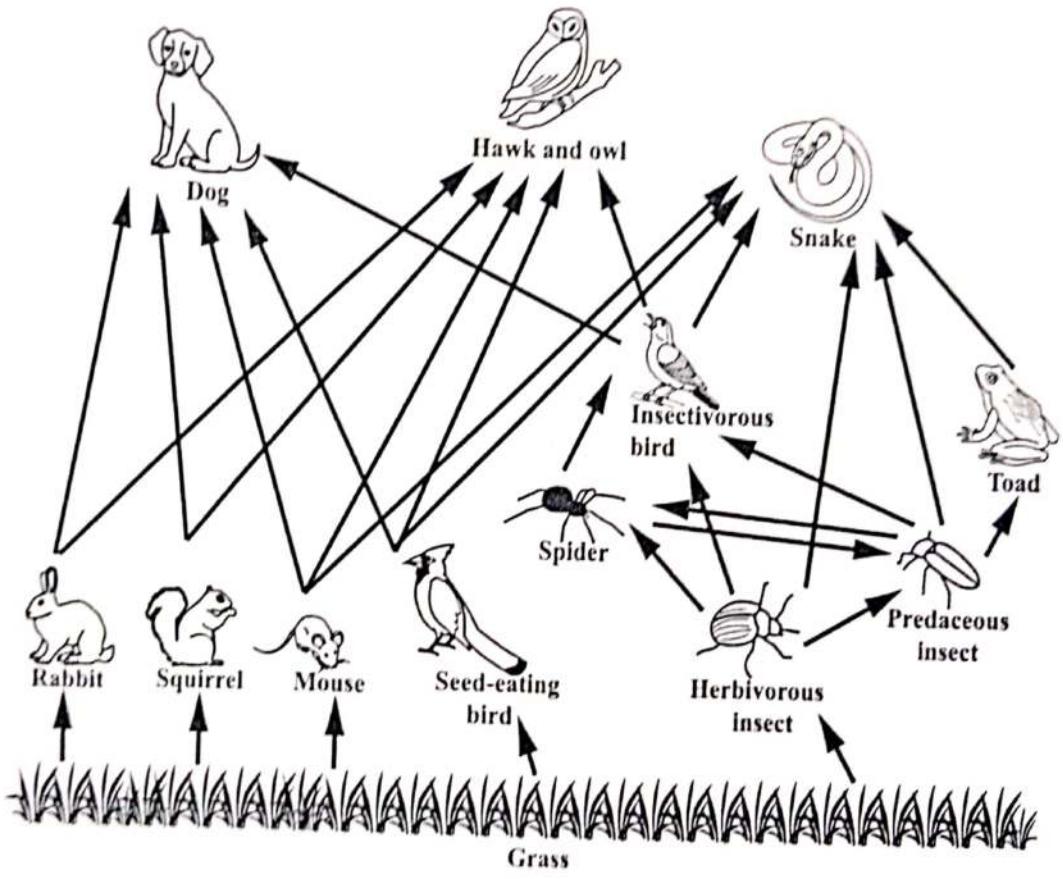
25. The eye of the hurricane is the

(A) centre of the hurricane
(B) path along which the hurricane is moving
(C) region in which the hurricane is located
(D) front where the winds reach the speed of a standard hurricane

26. Decayed organic matter in soil is called

(A) sand
(B) humus
(C) sediment
(D) limestone

Items 27–28 refer to the following food web.



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27. Which of the following is a producer?

(A) Mouse
(B) Toad
(C) Grass
(D) Rabbit

28. Which of the following is NOT a herbivore?

(A) Mouse
(B) Spider
(C) Rabbit
(D) Squirrel

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29. Which of the following fishing methods is the LEAST efficient as it relates to the number of fish caught?

(A) Drift net
(B) Long line
(C) Hand line
(D) Trawl net

30. Which of the following processes results in water moving from the ocean to the atmosphere?

(A) Respiration
(B) Precipitation
(C) Evaporation
(D) Condensation

31. Which of the following processes used in the treatment of water will eliminate harmful bacteria?

(A) Aeration
(B) Filtration
(C) Sedimentation
(D) Chlorination

Items 32–33 refer to the following methods of water purification.

(A) Distillation
(B) Filtration
(C) Chlorination
(D) Sedimentation

In answering Items **32–33** each option may be used once, more than once or not at all.

Which method involves the

32. settling of heavy materials?

33. boiling and re-condensing of water?

34. The MOST effective method used in controlling pests is the

(A) use of traps
(B) use of another organism
(C) use of screens on windows
(D) eradication of their breeding places

35. Which method of waste disposal is LEAST harmful to the environment?

(A) Burning
(B) Burying
(C) Recycling
(D) Landfilling

Item 36 refers to the following safety equipment.

I. Helmet
II. Gloves
III. Boots

36. Which of the following are essential for a welder?

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

37. Which of the following is MOST needed by a student pouring corrosive chemicals in the laboratory?

(A) Helmet
(B) Gloves
(C) Hard hat
(D) Safety vest

38. Which of the following is NOT a conductor of electricity?

(A) Iron
(B) Carbon
(C) Copper
(D) Plastic

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39. The rusting of iron is an example of

(A) reduction
(B) oxidation
(C) precipitation
(D) neutralization

40. Brass is a mixture of

(A) copper and tin
(B) copper and zinc
(C) zinc and tin
(D) silver and copper

41. Steel is widely used in the construction of buildings because it

(A) is inexpensive
(B) is easy to recycle
(C) has high tensile strength
(D) has a high melting point

42. Which of the following chemicals removes nail polish?

(A) Borax
(B) Acetone
(C) Washing soda
(D) Methylated spirit

Item 43 refers to the following dat obtained in an experiment to investigat crop growth and optimum pH growth.

Crop	Optimum pH Value of Soil
(A)	4.0–6.0
(B)	6.0–8.0
(C)	8.0–10.0
(D)	10.0–12.0

43. Which crop grows BEST in neutral soil?

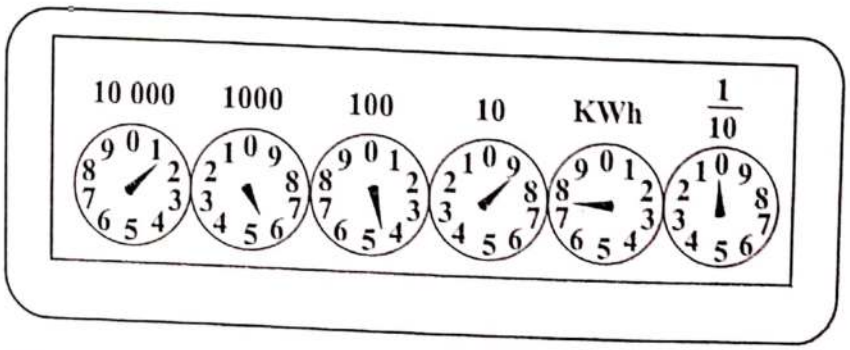
44. Which of the following forms a suspensior in water?

(A) Salt
(B) Oxygen
(C) Sugar
(D) Clay

45. Hard water is water that

(A) contains alcohol
(B) contains a lot of chemicals
(C) forms a lot of lather with soap
(D) does not form lather with soap easily

Item 46 refers to the following diagram which represents an analogue meter used to measure the amount of electricity used.



46. What is the reading on the meter?

(A) 15 487.0 kWh
(B) 16 597.0 kWh
(C) 25 487.0 kWh
(D) 26 597.0 kWh

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47. Which of the following groups is comprised ONLY of the primary colours of light?

(A) Red, blue, cyan
(B) Red, green, blue
(C) Red, green, purple
(D) Red, blue, orange

48. Which electrical component is designed to melt and break the circuit if too much current passes through it?

(A) Fuse
(B) Flex
(C) Plug
(D) Switch

49. A refrigerator has a rating of 0.45 kW. The electricity used, in kWh, by this refrigerator for one day is equal to

(A) 0.45

(B) $\frac{0.45}{24}$

(C) 0.45×24

(D) $0.45 + 24$

50. In the Caribbean, the energy used in the production of electricity is derived mainly from

(A) waterfalls
(B) fossil fuels
(C) solar panels
(D) wind turbines

51. The type of energy contained in fossil fuels is

(A) solar
(B) kinetic
(C) electrical
(D) chemical

52. Which of the following is NOT an alternative source of energy?

(A) Solar
(B) Wind
(C) Candle
(D) Wave

53. Which of the following formulae is used to calculate the mechanical advantage (MA) of a machine?

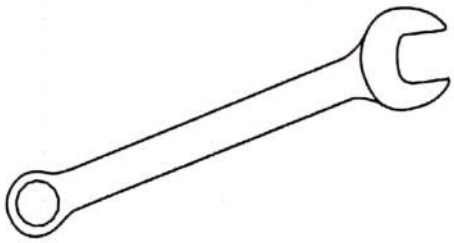
(A) $MA = \frac{\text{Effort}}{\text{Load}}$

(B) $MA = \frac{\text{Load}}{\text{Effort}}$

(C) MA = Effort – Load

(D) MA = Effort × Load

Item **54** refers to the following diagram of a spanner.

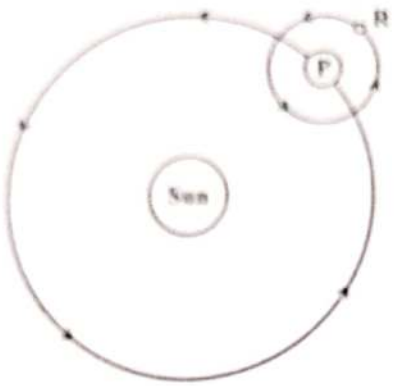


54. The spanner is an example of

(A) a lever
(B) a pulley
(C) an inclined plane
(D) a hydraulic press

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Item 55 refers to the following diagram which illustrates a body, P, that revolves around the sun and another body, R, that revolves around P.



55. Which of the following terms BEST describes P?

(A) Planet
(B) Galaxy
(C) Asteroid
(D) Satellite

Item 56 refers to the following diagram of an athlete jumping over a hurdle.



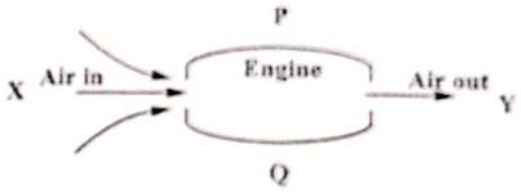
56. What type of energy is the athlete using to jump over the hurdle?

(A) Heat
(B) Sound
(C) Kinetic
(D) Potential

57. Which of the following energy change takes place in a power station that use natural gas?

(A) Kinetic to heat
(B) Electrical to heat
(C) Kinetic to chemical
(D) Chemical to electrical

Item 58 refers to the following diagram which represents the passage of air through the engine of a jet plane.

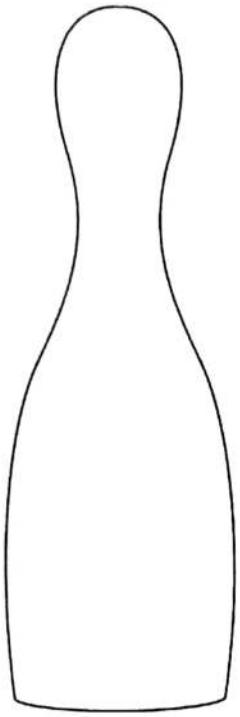


58. The direction in which the plane is moving is

(A) X to Y
(B) Y to X
(C) P to Q
(D) Q to P

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Item 59 refers to the following diagram.



59. Which of the following types of equilibrium is shown in the diagram?

(A) Stable
(B) Neutral
(C) Unstable
(D) Chemical

60. An electrician may use rubber gloves to hold a live electrical wire because the gloves act as

(A) an insulator and will conduct the current
(B) a conductor and will not allow the current to pass through
(C) a conductor and conducts the current away from the gloves
(D) an insulator and does not allow current to pass through

END OF TEST

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS TEST.

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