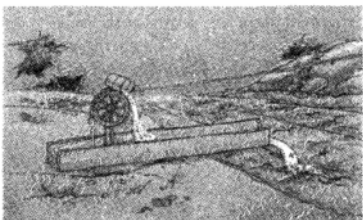


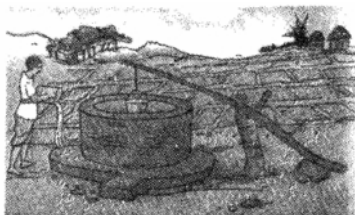
1. The given figures depict traditional methods of irrigation. Cattle or human labour is used in these methods. So these methods are cheaper but less efficient. Identify the correctly matched figure



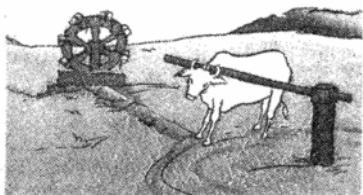
A. Moat



B. Rahat



C. Chain pump



D. Dhedi

2. Which of the following statements is correct about weeds?

- A. Weed cannot be removed manually
- B. Cochineal insects are used to eradicate weed like Opuntia
- C. Cochineal weeds are used for human consumptions
- D. Both (B) & (C) are correct

3. X is a simple tool which is used for removing weeds and for loosening the soil. It has a long rod of wood or iron. A strong broad and bent plate of iron is fixed to one of its ends and works like a blade. It is pulled by animals. What is X ?

- A. Plough
- B. Hoe
- C. Cultivator
- D. Seed drill

4. Azotobacter is a

- A. Curd producing bacteria
- B. Nitrogen fixing bacteria
- C. Immunizing bacteria

D. Bacteria used for making alcohol

5. DPT vaccine is given to an infant to protect against which disease(s)/disorder(s)

- A. Diarrhoea, paralysis, trauma
- B. Diphtheria, pertussis, tetanus
- C. Diphtheria, pertussis, typhoid
- D. None of these

6. I am the source of synthetic polymers. I am a mixture of a number of carbon compounds which can be separated by fractional distillation. I am

- A. Petrol
- B. Diesel
- C. Petroleum
- D. Both (A) & (C)

7. Which of these fibres is made from a raw material obtained from plants?

- A. Rayon
- B. Nylon
- C. Terylene
- D. Polyester

8. A metal piece is dropped in a test tube containing dil. H_2SO_4 . When a burning matchstick is brought near the mouth of the test tube, a pop sound is heard. The sound is produced due to

- A. Evolution of O_2 gas
- B. Evolution of H_2 gas
- C. Evolution of SO_2 gas
- D. Evolution of CO_2 gas

9. Lalita takes a burning substance and collects the evolved vapours in a test tube and makes sure that they do not escape. A small amount of water is added to the test tube. To the solution obtained, a few drops of red litmus solution are added. The litmus solution turns blue. Which of the following could be the burning substance?

- A. Mg
- B. S
- C. Both (A) & (B)
- D. None of these

10. I am a fuel used for vehicles and also at home. I can be easily transported through pipes. I am used as a starting material for the manufacture of a number of chemicals and fertilizers. I am

- A. Liquefied Petroleum Gas
- B. Natural gas
- C. Coal gas
- D. Helium gas

11. PCRA stands for

- A. Petrol Conservation Research Association
- B. Petroleum Conservation Research Association
- C. Petrochemical Conservation Research Association
- D. Petrol Conversion Research Association

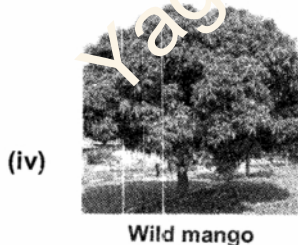
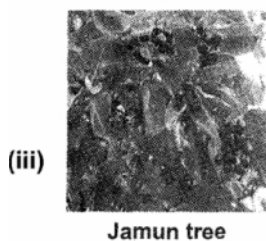
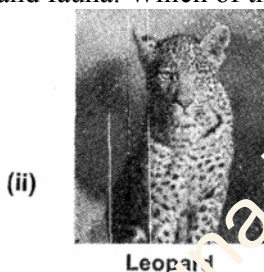
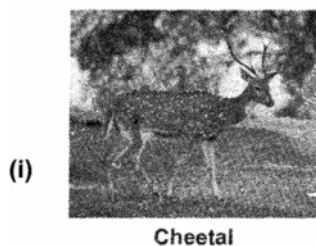
12. A flame always points upwards because

- A. Gases produced in flame are cold
- B. Gases produced in flame are hot
- C. Hot gases are lighter and hence rise up
- D. Both (B) & (C)

13. Which of the following are requirements for producing fire?

- A. Oxygen and heat
- B. Fuel and oxygen
- C. Fuel, oxygen and heat
- D. Fuel and heat

14. Given below are figures of flora and fauna. Which of the following can be seen at Panchmarhi Biosphere Reserve?



- A. (i) & (ii)
- B. (i) & (iii)
- C. (i), (ii) & (iv)
- D. All of these

15. Which of the following statements is true?

- A. Biodiversity can be replicated by artificial means
- B. Fossil fuels can not be recycled
- C. Poaching is a legal industry
- D. Fauna is plant life in a particular region

16. Which of the following is true about plant cells?

- A. They always have a secondary cell wall and the primary may disappear
- B. They have channels between cells that allow strands of cytoplasm to pass from cell to cell
- C. They develop turgor pressure when water enters the nucleus
- D. They do not have cell-to-cell junctions like animal cells

17. Which of the following matches is incorrect?

A.	Ribosome
Organelle	
Function	Secretion of enzymes
Presence	Plant & animal cell

B.	Mitochondria
Organelle	
Function	Site of respiration
Presence	Animal cell only

C.	Chloroplast
Organelle	
Function	Storage of cell sap
Presence	Plant cell

D.	All of the above
Organelle	
Function	-
Presence	-

18. Amniocentesis is a process to

- A. Determine any disease in the heart
- B. Know about diseases of brain
- C. Determine any hereditary disease in the embryo
- D. All of the above

19. Select the incorrect statement regarding AIDS

- A. It is an immunodeficiency disease
- B. HIV virus has RNA as its genetic material
- C. AIDS can be transmitted to an infant from the infected mother through her milk
- D. The time-lag between the infection and appearance of AIDS symptoms may vary from week to month

20. When a bowler slides the bowling ball on the lane to hit the pins, the force exerted on bowling ball is able to _____

- A. Stop a moving object
- B. Change the direction of a moving object
- C. Change the speed of a moving object
- D. Change the position of a stationary object

21. Jaya noted that the pointer shows a reading of 25 cm on the ruler. When she placed a 50 g mass on the dish, the pointer

- A. The 50 g mass was wrongly labelled
- B. The spring weakened its elastic spring force
- C. The rule was placed the wrong way round
- D. The rule moved with the spring

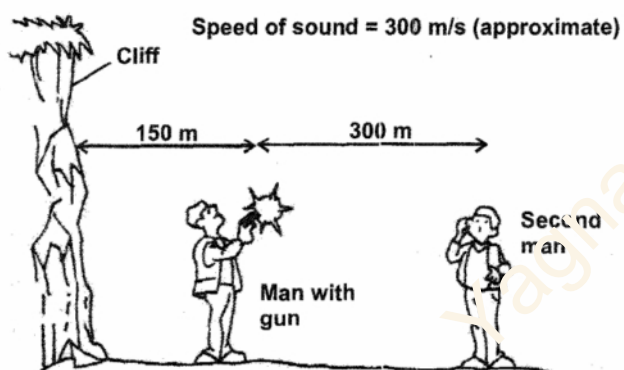
22. Why does a horse need to pull harder during the first few steps in pulling the cart?

- A. Static friction is greater than sliding friction
- B. Sliding friction is greater than rolling friction
- C. No frictional force acts after the cart comes in motion
- D. Air friction is greater during first few steps of motion

23. It is easier to pull a lawn roller than to push it because pulling

- A. Involves sliding friction
- B. Involves rolling friction
- C. Increases the effective weight
- D. Decreases normal reaction

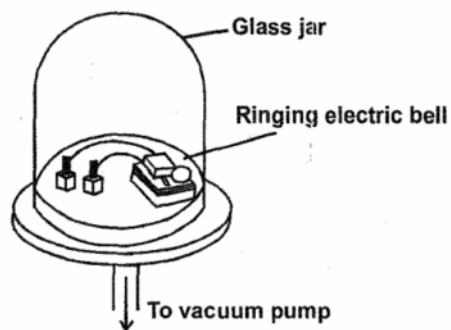
24. A man fires a gun 150 m from a cliff. A second man who is standing 300 m further away from the cliff hears the gun 1 second after he sees the flash. The second man will hear the echo from the cliff



- A. 1 second after seeing the flash
- B. 2 seconds after hearing the gun
- C. 2 seconds after seeing the flash
- D. 4 seconds after hearing the gun

25. A scientist performed an experiment as shown in the figure here.

What do you think happened as air was pumped out of the jar and he rang the bell?



- A. The sound became louder
- B. The sound became fainter first and then louder once all the air was pumped out
- C. The sound could not be heard anymore
- D. The sound was the same as before

26. Which of the following is a good conductor of electricity?

- A. Tap water
- B. Distilled water
- C. Sea water
- D. Rain water

27. Tin cans, used for storing food are made by electroplating

- A. Chrome onto tin
- B. Chrome onto Iron
- C. Tin onto iron
- D. None of these

28. Electric charge is measured in

- A. Coulombs
- B. Amperes
- C. Volts
- D. Watts

29. Which of the following scales are not linear in nature ?

- (i) Decibel
- (ii) Richter
- (iii) Meter

- A. (i) only
- B. (ii) & (iii)
- C. (ii) only
- D. (ii) & (i)

30. Nerve cells in eyes which are sensitive to bright light are

- A. Rods
- B. Cones
- C. Ciliary muscles
- D. Optic nerve

31. A man looked into a plane mirror and saw the clock as shown. The time on the clock was



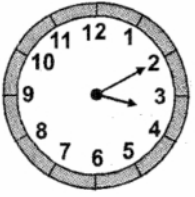
A.



B.



C.



D.

32. Which planets changes colour in different seasons?

- A. Venus
- B. Mars
- C. Jupiter
- D. Saturn

33. Asteroids are

- A. Small broken pieces of planets
- B. Shooting stars
- C. Found in a belt between earth and Venus
- D. None of these

34. Frogs and toads seem to be disproportionately affected by pollution in comparison to many other animals, including other amphibians. What might explain this?

- A. They have to live in two environments, water and land, so they face two kinds of pollution
- B. They tend to live in places throughout the world that are crowded with people

- C. They have thin skin that does not protect them very well from environmental dangers
D. They eat insects that are very dirty

35. Why will marine organisms be affected when there is an oil spillage at sea?

- A. There will be a shortage of light and heat in the water
B. There will be a shortage of oxygen and excessive heat will be trapped in the water
C. There will be a shortage of oxygen and the chemicals from the oil will affect marine organisms
D. There will be a shortage of carbon dioxide and the poisonous substances will affect marine organisms

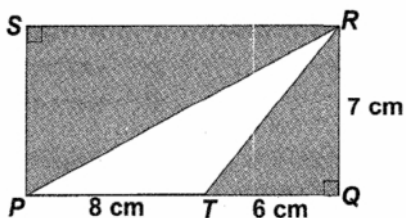
36. A chemist has m gm of salt water that is $m\%$ salty. How many grams of salt must he add to make a solution that is $2m\%$ salty?

- A. $\frac{m}{100 + m}$
B. $\frac{2m}{100 - 2m}$
C. $\frac{m^2}{100 - 2m}$
D. $\frac{m^2}{100 + 2m}$

37. A shopkeeper bought 11 mangoes for Rs 30 and sold 10 of them for Rs 31, the gain (or loss) percent is

- A. $9\frac{1}{11}\%$ gain
B. $9\frac{1}{11}\%$ gain
C. $13\frac{1}{3}\%$ gain
D. $13\frac{2}{3}\%$ gain

38. PQRS is a rectangle. Find the area, in cm^2 , of the shaded portion.



- A. 70
B. 78
C. 80
D. 89

39. Match the following

(1) Rectangle	(a) A quadrilateral having its opposite sides parallel
(2) Square	(b) A quadrilateral having its opposite sides equal and one angle measuring 90°
(3) Parallelogram	(c) A quadrilateral having all sides equal and one angle measuring 90°
(4) Rhombus	(d) A quadrilateral in which a pair of opposite sides are parallel
(5) Trapezium	(e) A parallelogram having all sides equal

- A. 1e 2d 3c 4a 5b
 B. 1a 2b 3c 4d 5e
 C. 1c 2b3e 4a 5d
 D. 1b 2c 3a 4e 5d

40. A man goes to a place at the rate of 4 kmph. He comes back on a bicycle at 16 kmph. His average speed for the entire journey is

- A. 5 km/hr
 B. 6.4 km/hr
 C. 8.5 km/hr
 D. 10km/hr

41. If $a = 16$ and $b = 5$, the value of $\left(\frac{a^2 + b^2 + ab}{a^3 - b^3}\right)$ is

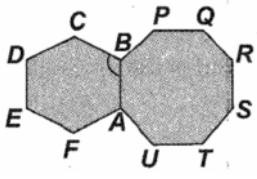
- A. $\frac{1}{11}$
 B. $\frac{1}{19}$
 C. $\frac{121}{3971}$
 D. $\frac{59}{19}$

42. Consider the following questions

- 5 litre of milk cost Rs.25. How many litres of milk would cost Rs.150?
- The eight of a 2 rupee coin is 30 gm. What is the weight of a one rupee coin?
- A car covers a distance of 180 km in 4 hours. How much will it cover in 3 hours?
- If one stone can chase away 2 crows sitting on a tree, then how many stones do we need to chase away 50 crows sitting on the tree? The unitary method does not help in finding answers to questions _____

- A. 1 and 4
 B. 2 and 4
 C. 1,2 and 3
 D. 1,2,3 and 4

43. In the diagram below, ABCDEF is a regular hexagon and ABPQRSTU is a regular octagon. Then $\angle ABC =$



- A. 150°
- B. 120°
- C. 130°
- D. 175°

44. $\sqrt[3]{-2744} + \sqrt[3]{0.008} =$

- A. 70
- B. -70
- C. 14
- D. -14

45. The monthly salaries of A, B, C are in the proportion 2 : 3 : 5. If C's monthly salary is Rs.1200 more than that of A, then B's annual salary is

- A. Rs.14400
- B. Rs.24000
- C. Rs.1200
- D. Rs.2000

46. $(2.\overline{47} + 3.\overline{53} + 0.\overline{05}) = ?$

- A. 6
- B. 0.06
- C. 0.66
- D. 6.06

47. In the following questions, the numbers follow a certain rule. Work it out and select the correct alternative



- A. 32
- B. 40
- C. 36
- D. 20

48. Which number is opposite to 3?



(I)



(II)



(III)



(IV)

- A. 2
- B. 3
- C. 4
- D. 6

49. Which of the following is not a perfect square?

- A. 49
- B. 81
- C. 99
- D. 64

50. In a school there are 300 pupils. x of them are girls. What fraction of the pupils are boys?

- A. $\frac{x}{300}$
- B. $\frac{300}{300-x}$
- C. $\frac{x}{300-x}$
- D. $\frac{300}{300}$

Yagna Innovation