Olympiad Foundation

SAMPLE PAPER CLASS 9th

ओलम्पियाड फाउण्डेशन

OLYMPIAD FOUNDATION

SCIENCE OLYMPIAD

Division of Marks

| S.No.	Topic/Section	No. of Question	Marks
1	Science	25	25
2	HOTS (High Order thinking Skill)	10	10
3	Reasoning & Mental Ability	15	15
	Total	50	50

INSTRUCTIONS :

1. Use Blue/Black ballpoint pen only to darken the appropriate circle.

2. Mark should be dark and should completely fill the circle.

3. Dark only one circle for each entry.

4. Dark the circle in the space provided only.

5. Rough work must not be done on the answer sheet and do not use white-fluid or any rubbing material on Answer Sheet.

6. Each question carries one mark.

Select the correct answer and darken your answer in the table :

SCIENCE

1. The excretory system in Annelids is consisted of tubes called -
   (A) Flame cells   (B) Metanephridi
   (C) Nephridia   (D) Protonephridia

2. Which sub group in plant kingdom produces flowers ?
   (A) Angiosperms   (B) Fungi
   (C) Mosses   (D) Ferns

3. Burning of fossil fuels add -
   (A) CO_2, SO_2, NO_2, gases in air   (B) C, SO_2, N_2, gases in air
   (C) CO, SO_3, NO_3, gases in air   (D) CH_4, CO_2, NO_2, gases in air

4. Greenhouse gases are -
   (A) Industries   (B) Rhizobium
   (C) Lightening   (D) All of the these

5. The barrier between the protoplasm and the outer environment in an animal cell is
   (A) Cell wall   (B) Plasma membrane
   (C) Nuclear membrane   (D) Cytoplasm

6. Ribosome are the site of -
   (A) Photosynthesis   (B) Respiration
   (C) Protein synthesis   (D) Absorption

7. Nitrogen, phosphorus and potassium are examples of -
   (A) Micro - nutrients   (B) Macro - nutrients
   (C) Fertilizers   (D) Both A and B

8. Cyperinus and Parthenium are types of -
   (A) Diseases   (B) Pesticides
   (C) Weeds   (D) Pathogens

9. Number of moles present in 28g of nitrogen atoms are -
   (A) 1 mole   (B) 2.3 moles   (C) 0.5 mole   (D) 2 moles

10. _____ is a physical quantity which express the amount of matter in a body.
    (A) Mass   (B) Density   (C) Volume   (D) Temperature

11. _____ is the formation of liquid drop from vapour.
(A) Evaporation   (B) Condensation
(C) Boiling   (D) Melting

12. Solution which has uniform composition through is called _____.
(A) Homogeneous solution   (B) Heterogeneous solution
(C) Colloidal   (D) None of these

13. The mixture of water and silver chloride separated by -
(A) Centrifugation   (B) Sedimentation
(C) Filtration   (D) Sublimation

14. Identify the correct symbol of gold
(A) Ag   (B) Gd   (C) Ge   (D) Au

15. An element x has valiancy equal to 3. What will be its formula with carbonate iron ?
(A) X_2CO_3 (B) $X_2(CO_3)_3$ (C) XCO_3 (D) $X(CO_3)_3$

16. Two elements X and Y has same atomic mass but the atomic number is 20 and 21 Respectively. X and Y are _____
(A) Isobar   (B) Isotones
(C) Isomers   (D) Isotopes

17. The maximum numbers of electrons can be accommodated in m cell is _____
(A) 2   (B) 8   (C) 18   (D) 32

18. Choose the option that best describes the characteristics of the kingdom to which the mushroom belongs :
(A) Unicellular prokaryotic organisms
(B) Saprophytic, eukaryotic, multicellular organisms
(C) Unicellular eukaryotic organisms
(D) Autotrophic eukaryotic organisms

19. Give below is the figure of Funaria - a moss plant.
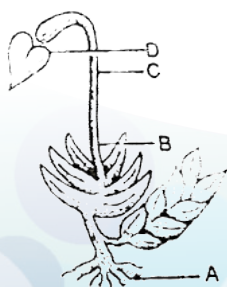
Here the parts indicated by the letters A, B, C and D represent which of the following structures ?

(A) A ➜ foot;   B ➜   rhizoids;   C ➜   seta;   D ➜   capsule

(B) A ➜ rhizoids;   B ➜   foot;   C ➜   seta;   D ➜   capsule

(C) A ➜ foot;   B ➜   seta;   C ➜   rhizoids; D ➜   capsule

(D) A ➜ rhizoids;   B ➜   seta;   C ➜   foot;   D ➜   capsule

20. Which of the following animals possesses a water vascular system ?

I. star fish   II. jelly fish   III. cuttle fish   IV. hydra

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

21. From the given v-t graph, it can be inferred that the object is -
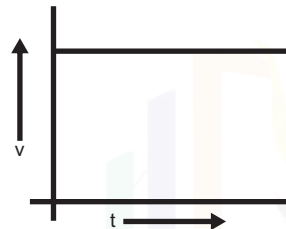
(A) At rest   (B) In uniform motion

(C) Moving with uniform acceleration   (D) In non - uniform motion

22. Which of the following statement is correct regarding velocity and speed of a moving body ?

(A) Velocity of a moving body is always higher than its speed

(B) Speed of a moving body is always higher then its velocity

(C) Speed of a moving body is its velocity in a given direction

(D) Velocity of a moving body is its speed in a given direction

23. Newton's third law of motion explains the two forces namely 'action' and 'reaction' coming into action when the two bodies are in contact with each other. These two forces :
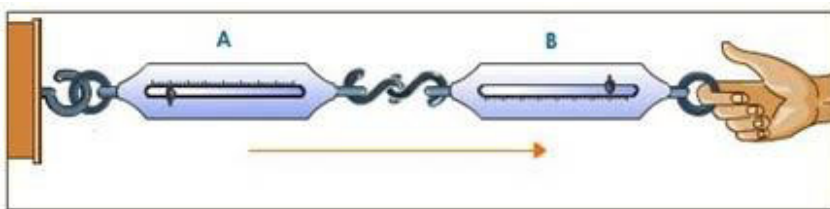
(A) Always act on the same body

(B) Always act on the different bodies in opposite directions

(C) Have same magnitude and direction

(D) Acts on either body at normal to each other

24. In a rocket, a large volume of gases produced by the combustion of fuel is allowed to escape through its tail nozzle in the downward direction with the tremendous speed and makes the rocket to move upward.


Which principle is followed in this take off of the rocket ?
(A) Moment of inertia
(B) Conservation of momentum
(C) Newton's third law of motion
(D) Newton's law of gravitation

25. A stone is released from the top of a tower of height 19.6 m. Then its final velocity just before touching the ground will be :
(A) 384.16m/s
(B) 196 m/s
(C) 19.6 m/s
(D) 3841.4 m/s

HOTS (HIGHER ORDER THINKING SKILLS)

26. When a piece of cork is put into the water it starts floating on the surface of water due to the upward Buoyant force from water.
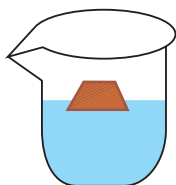
If the cork is pushed more inside the water by applying the force than the buoyant force.
(A) Will increase as the cork is immersed into the water
(B) Will decrease as the cork is immersed into the water
(C) Will first increase and then decrease as the cork is immersed more into the water
(D) Will remain the same as long as the cork is inside the water

27. A ball is dropped from a height of 10 m.
(A) Its potential energy increases and kinetic energy decreases during the falls.
(B) Its potential energy is equal to the kinetic energy during the falls.
(C) The potential energy decreases and the kinetic energy increases during the falls.
(D) The potential energy is 0 and kinetic energy is maximum while it is falling.

28. The unit of work is joule. The other physical quantity that has same unit is -
(A) Power
(B) Velocity
(C) Energy
(D) Force

29. The sound can travel in air when :
(A) Particles of medium travel from one place to another
(B) There is no moisture in the atmosphere
(C) Disturbance travel from one place to another
(D) Both A & C

30. We can distinguish between a man's voice and a woman's voice of the same loudness even without seeing them. This is due to a characteristic of sound which measures the shrillness of sounds. Can you choose the correct unit of the quantity on which this characteristic of sound depends ?
(A) Hertz
(B) Meter Second
(C) Meter
(D) Unitless

31. The echo - receiver of a sonar attached to a ship, receives the echo from the bottom of sea 4 seconds after the ultrasonic waves were sent into the sea.
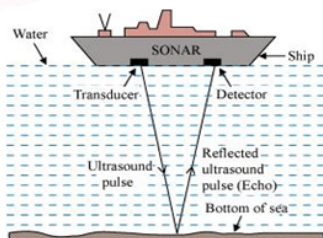
If the speed of sound in water is 1500 m/s, then what is the depth of the sea ?
(A) 6000 m
(B) 3000 m
(C) 15000 m
(D) 3500 m

32. Diarrhea, cholera, typhoid are the diseases that have one thing in common that is -
(A) All of them are caused by bacteria
(B) All of them is transmitted by contaminated food and water
(C) All of them are cured by antibiotics
(D) All of the above

33. The disease caused due to worm is -
(A) Tetanus
(B) Rabies
(C) Sleeping sickness
(D) Filariasis

34. The amount of nitrogen in the atmosphere is maintained by a biological cycle which involves two processes, first is to withdraw nitrogen from the atmosphere and secondly to add the same to atmosphere.
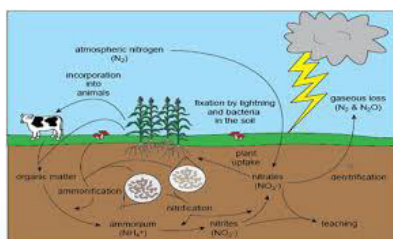

Can you guess the names of these two respective processes.
(A) Nitrogen fixation and nitrification
(B) Nitrogen fixation and denitrification
(C) Nitrification and denitrification
(D) Nitrification and nitrogen fixation

35. Fish is an important aquatic food which is rich in proteins. The act of capturing, preservation and utilization of fishes is called fish culture. Among the following statements choose the option which does not describe the benefit of fish culture ?
(A) A large number of fisher are raised in the small area.
(B) Economically important desired fishes are made available
(C) There is more mortality in the younger stages of the fishes
(D) Through selective hybridization, yield and quality of fishers are improved

REASONING AND MENTAL ABILITY

36. Choose the wrong term in the given series :
ABZ, BCY, CDX, EFW, EFV
(A) BCY   (B) CDX   (C) EFV   (D) EFW

37. 16 : 80 :: 20 : ?
(A) 100   (B) 90   (C) 80   (D) 70

38. In a code language 'VERY' is written as 'JSBH' and 'OKAY' is written as 'MTSH'. How will OVER BE Written in the code ?
(A) MSJB   (B) JSMB   (C) MJSB   (D) MSSB

39. If C = 3, CAN = 18, then MEN is equal to -
(A) 32   (B) 34   (C) 36   (D) 38

40. Ajay is the son - in - law of harry and husband if Jai's sister. If Ritesh is the brother of Jai, then how is Ritesh related to Harry ?
(A) Grand son   (B) Brother - in - law
(C) Brother   (D) Son

41. On planet X, the local terminology for book, pen, water, air, TV and mobile are 'TV', 'pen', 'air', 'book', 'mobile', and 'water' respectively. If someone is thirsty on planet X, what would he drink ?
(A) Book   (B) Mobile   (C) Air   (D) Water

42. Select a suitable figure from the four alternatives that would complete the figure matrix.
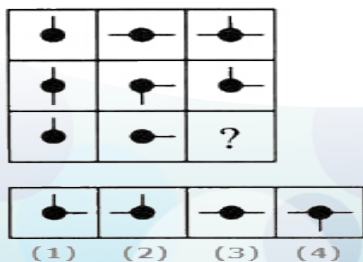

(A) 1   (B) 2   (C) 3   (D) 4

43. A man walks 200m towards east. He turns to right and walks 100m. He again turns right and walks 200m. Then he turns to right and again walks 200m. How far is he from the starting pint of the trip ?
(A) 50 m
(B) 100m
(C) 200m
(D) 700m

44. A boy is facing toward west. He turns 135⁰ anticlockwise and then 90⁰ clockwise. Which direction is facing now ?
(A) North - West
(B) North - East
(C) South - East
(D) South - West

45. Consider the following diagram :
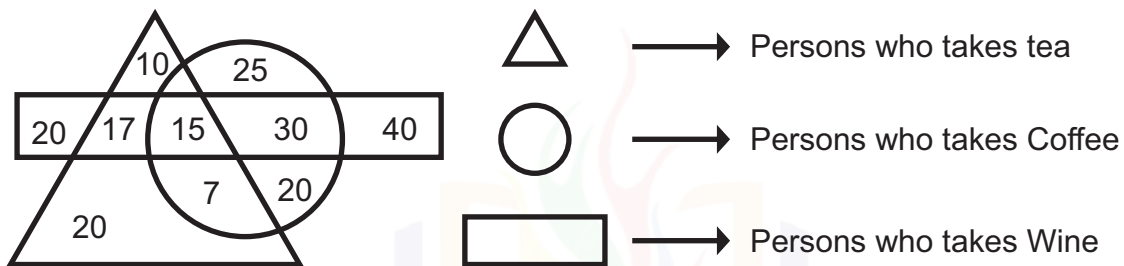
How many people like tea and wine ?
(A) 32
(B) 30
(C) 35
(D) 40

46. In the Venn Diagram given below, A represents the total number of people in a town who like cricket = 1300. B represents the total number who like badminton = 500 and C represents the total number of people who like Tennis = 100. If AB = 9, BC = 12, AC = 13 and ABC = 2, how many people like only one game ?
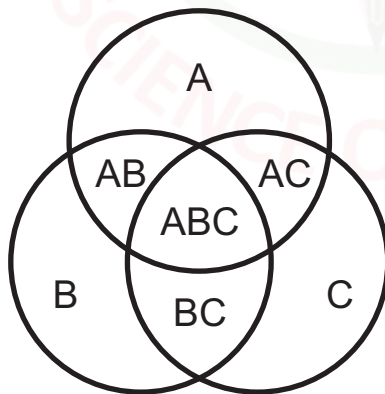
(A) 1265
(B) 1264
(C) 1260
(D) 1268

47. Which of the following word cannot be formed from the words 'POPULAR'
(A) POLAR
(B) POP
(C) LAUP
(D) PAPPU

8

48. In the following question, a matrix of certain characters is given. These characters follow a certain trend row - wise or column wise. Find out this trend and choose the missing character accordingly.

72	24	6
96	16	12
108	?	18

(A) 12   (B) 16   (C) 18   (D) 20

49. Choose the alternative which is closely resembles the water - image of the given combination.
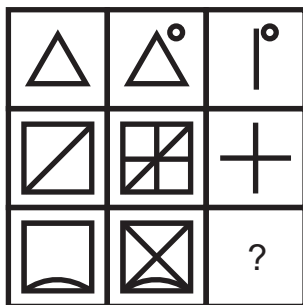
NUCLEAR

(1) ЯAƎⅼϽUИ   (2) ЯAƎⅼϽUИ
(3) ИUCⅼEAЯ   (4) ИUCⅼEAЯ

(A) 1   (B) 2   (C) 3   (D) 4

50. Select a suitable figure from the four alternative that would complete the figure mattix.

(A) 1   (B) 2   (C) 3   (D) 4

ANSWER KEY

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