FOUNDATION CLASSES

Class 7 Science & Mathematics

Exam Guidelines

- **Time Allowed:** 90 Minutes
- **Total Questions:** 60
- **Maximum Marks:** 240

General Instructions:

1. All questions are compulsory.
2. The question paper consists of 60 Multiple Choice Questions (MCQs).
3. **Marking Scheme:**
   - **+4 marks** for each correct answer.
   - **-1 mark** will be deducted for each wrong answer.
   - No negative marking for unattempted questions.
4. Use black or blue pen only to mark answers.
5. Use of calculators or electronic devices is strictly prohibited.

Part 1: Science (30 Marks)

Section A: (10 Questions)

1. Which of the following is an insectivorous plant?
   A) Cuscuta
   B) Pitcher plant
   C) Rose
   D) Mushroom
2. The process of removing the fleece of the sheep along with a thin layer of skin is called:
   A) Scouring
   B) Sorting
   C) Shearing
   D) Reeling

3. Which acid is found in ant stings?
   A) Acetic acid
   B) Formic acid
   C) Lactic acid
   D) Citric acid
4. Iron rusts in the presence of:
   A) Oxygen only
   B) Water only
   C) Oxygen and Water both
   D) Nitrogen and Water
5. The rhythmic contraction and relaxation of the heart muscles is known as:
   A) Pulse
   B) Heartbeat
   C) Blood pressure
   D) Breathing
6. Which device is used to measure the speed of a vehicle?
   A) Odometer
   B) Speedometer
   C) Thermometer
   D) Barometer
7. A virtual image larger than the object can be produced by a:
   A) Concave lens
   B) Convex mirror
   C) Concave mirror
   D) Plane mirror
8. The reproductive part of a plant is the:
   A) Leaf
   B) Stem
   C) Root
   D) Flower
9. Water absorption through roots can be increased by keeping the plants:
   A) In the shade
   B) In dim light
   C) Under the fan
   D) Covered with a polythene bag
10. The basic unit of time is:
   A) Second
   B) Minute
   C) Hour
   D) Year

11. Paheli wants to know why a copper spoon gets hot when left in a hot soup bowl. Which process is responsible?
    A) Radiation
    B) Convection
    C) Conduction
    D) Insulation
12. Consider the following reaction: Magnesium + Oxygen -> X. If X is dissolved in water, the nature of the solution is:
    A) Acidic
    B) Basic
    C) Neutral
    D) Amphoteric
13. During heavy exercise, we get cramps in the legs due to the accumulation of:
    A) Carbon dioxide
    B) Lactic acid
    C) Alcohol
    D) Water
14. If a pendulum takes 32 seconds to complete 20 oscillations, what is its time period?
    A) 1.2 sec
    B) 1.6 sec
    C) 0.62 sec
    D) 3.2 sec
15. Which of the following blood components helps in the clotting of blood?
    A) RBC
    B) WBC
    C) Plasma
    D) Platelets
16. Why are forests called "Green Lungs"?
    A) They provide timber.
    B) They release oxygen and absorb carbon dioxide.
    C) They stop soil erosion.
    D) They provide shelter to animals.
17. A simple pendulum oscillates between points A, B, and C. Where is the potential energy maximum?
    A) At the mean position (B)
    B) At the extreme positions (A and C)
    C) Equal at all points
    D) Cannot be determined

18. When a fuse wire melts and breaks the circuit, it is due to:
    A) Magnetic effect of current
    B) Heating effect of current
    C) Chemical effect of current
    D) Mechanical effect of current
19. Turmeric stain on a white shirt turns red when washed with soap because:
    A) Soap solution is acidic.
    B) Soap solution is neutral.
    C) Soap solution is basic.
    D) Turmeric is a synthetic indicator.
20. Yeast is used in the production of:
    A) Sugar
    B) Alcohol
    C) Hydrochloric acid
    D) Oxygen

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21. A car travels 30 km at a uniform speed of 40 km/h and the next 30 km at a uniform speed of 20 km/h. What is the average speed?
    A) 30 km/h
    B) 26.6 km/h
    C) 45 km/h
    D) 32 km/h
22. In the human digestive system, where is bile produced and where is it stored?
    A) Produced in Gall bladder, stored in Liver
    B) Produced in Pancreas, stored in Stomach
    C) Produced in Liver, stored in Gall bladder
    D) Produced in Stomach, stored in Small Intestine
23. You are provided with three test tubes A, B, and C containing distilled water, acidic solution, and basic solution respectively. If you only have red litmus paper, how can you identify the Basic solution?
    A) Red litmus remains red.
    B) Red litmus turns blue.
    C) Red litmus becomes colorless.
    D) Red litmus dissolves.
24. Which of the following represents the correct sequence of air passage during inhalation?
    A) Nostrils -> Pharynx -> Larynx -> Trachea -> Alveoli
    B) Larynx -> Nostrils -> Pharynx -> Lungs
    C) Nostrils -> Trachea -> Pharynx -> Larynx -> Alveoli
    D) Nasal cavity -> Trachea -> Pharynx -> Larynx -> Alveoli

25. If the distance between an object and a plane mirror is 5 meters, and the object moves 2 meters towards the mirror, what is the new distance between the object and its image?
A) 3 meters
B) 6 meters
C) 10 meters
D) 5 meters

26. Which of the following is a physical change?
(i) Melting of wax
(ii) Burning of wax
(iii) Digestion of food
(iv) Tearing of paper
A) (i) and (ii)
B) (ii) and (iii)
C) (i) and (iv)
D) (ii) only

27. An electric bell functions on the principle of:
A) Electromagnetic induction
B) Magnetic effect of current
C) Heating effect of current
D) Electrostatic force

28. Plants that have rhizobium bacteria in their root nodules helps in replenishing the soil with:
A) Phosphorus
B) Potassium
C) Nitrogen
D) Calcium

29. Which color of light is deviated the least when passing through a prism (related to Newton's disc concept)?
A) Violet
B) Red
C) Green
D) Blue

30. When carbon dioxide is passed through lime water, it turns milky due to the formation of:
A) Calcium bicarbonate
B) Calcium carbonate
C) Calcium oxide
D) Calcium hydroxide

Part 2: Mathematics (30 Marks)

Section A: (10 Questions)

31. The value of (-10) x (-5) + (-7) is:
    A) 43
    B) -57
    C) 57
    D) 43

32. Identify the complement of 65 degrees:
    A) 115 degrees
    B) 25 degrees
    C) 35 degrees
    D) 90 degrees

33. The mode of the data: 12, 14, 12, 16, 15, 13, 14, 18, 19, 12 is:
    A) 14
    B) 12
    C) 16
    D) 13

34. If 3x + 7 = 16, then x = ?
    A) 2
    B) 4
    C) 3
    D) 5

35. The area of a square is 144 sq cm. What is its perimeter?
    A) 12 cm
    B) 24 cm
    C) 48 cm
    D) 36 cm

36. Convert 3/4 into percentage:
    A) 30%
    B) 75%
    C) 40%
    D) 25%

37. Which of the following is a pair of linear pair angles?
    A) 120 degrees, 60 degrees
    B) 90 degrees, 80 degrees
    C) 100 degrees, 100 degrees
    D) 60 degrees, 30 degrees

38. The exponential form of 10,000 is:
   A) 10^3
   B) 10^5
   C) 10^4
   D) 100^2
39. How many lines of symmetry does a regular hexagon have?
   A) 4
   B) 5
   C) 6
   D) 8
40. The product of 2/3 x 9/4 is:
   A) 3/2
   B) 2/3
   C) 18/7
   D) 6/12
41. In a class test, +3 marks are given for every correct answer and -2 marks for every incorrect answer. Mohit scores -5 marks even though he got 7 correct answers. How many questions did he attempt incorrectly?
   A) 10
   B) 12
   C) 13
   D) 15
42. The sum of three consecutive integers is -87. What is the smallest integer?
   A) -30
   B) -28
   C) -29
   D) -31
43. Find the angle which is equal to its supplement.
   A) 45 degrees
   B) 90 degrees
   C) 180 degrees
   D) 60 degrees
44. The perimeter of a rectangular sheet is 100 cm. If the length is 35 cm, find its area.
   A) 525 sq cm
   B) 1050 sq cm
   C) 350 sq cm
   D) 600 sq cm

45. If 20% of a number is 40, then what is 50% of that number?
    A) 80
    B) 100
    C) 120
    D) 200

46. By selling a watch for Rs. 1200, a shopkeeper loses 20%. What was the Cost
    Price (CP)?
    A) Rs. 1500
    B) Rs. 1440
    C) Rs. 1000
    D) Rs. 1400

47. Find the value of x in the figure if two lines are parallel and intersected by a
    transversal, where interior angles on the same side are (2x - 8) degrees and (3x -
    7) degrees?
    A) 35
    B) 39
    C) 40
    D) 45

48. Simplify: $(3^0 + 4^0) \times 5^2$
    A) 25
    B) 50
    C) 0
    D) 1

49. A wire is in the shape of a square of side 10 cm. If the wire is rebent into a
    rectangle of length 12 cm, find its breadth.
    A) 6 cm
    B) 8 cm
    C) 10 cm
    D) 12 cm

50. Subtract the sum of $(2x - x^2 + 5)$ and $(-4x - 3 + 7x^2)$ from 5.
    A) $6x^2 - 2x + 3$
    B) $-6x^2 + 2x + 3$
    C) $6x^2 + 2x - 3$
    D) $3 - 2x - 6x^2$

51. In a Triangle ABC, if 3(Angle A) = 4(Angle B) = 6(Angle C), find Angle A.
    A) 80 degrees
    B) 60 degrees
    C) 40 degrees
    D) 30 degrees
52. What should be added to $x^2 + xy + y^2$ to obtain $2x^2 + 3xy$?
    A) $x^2 + 2xy - y^2$
    B) $x^2 - 2xy + y^2$
    C) $-x^2 + 2xy + y^2$
    D) $x^2 - xy + y^2$
53. A father is 3 times as old as his son. After 12 years, his age will be twice that of his son. Find their present ages.
    A) 36, 12
    B) 42, 14
    C) 30, 10
    D) 45, 15
54. The mean of 5 numbers is 20. If one number is excluded, their mean becomes 15. The excluded number is:
    A) 20
    B) 40
    C) 25
    D) 35
55. Find the value of: [(2^{20} divided by 2^{15}) x 2^3] divided by 2^5
    A) 2^2
    B) 2^3
    C) 2^5
    D) 2^8
56. Two cross roads, each of width 5 m, run at right angles through the center of a rectangular park of length 70 m and breadth 45 m. Find the area of the roads.
    A) 575 sq m
    B) 600 sq m
    C) 550 sq m
    D) 350 sq m
57. If x/2 - 1/5 = x/3 + 1/4, then x = ?
    A) 2.1
    B) 2.7
    C) 3.2
    D) 2.5

58. In an isosceles triangle, the vertex angle is 50 degrees. What is the size of the base angles?
    A) 65 degrees
    B) 50 degrees
    C) 70 degrees
    D) 40 degrees
59. A sum of money doubles itself in 8 years at simple interest. What is the rate of interest per annum?
    A) 10%
    B) 12.5%
    C) 15%
    D) 20%
60. The circumference of a circle exceeds its diameter by 30 cm. Find the radius of the circle (Take pi = 22/7).
    A) 7 cm
    B) 14 cm
    C) 10.5 cm
    D) 3.5 cm

Answer Key

Science:

1.B | 2.C | 3.B | 4.C | 5.B | 6.B | 7.C | 8.D | 9.C | 10.A

11.C | 12.B | 13.B | 14.B | 15.D | 16.B | 17.B | 18.B | 19.C | 20.B

21.B | 22.C | 23.B | 24.A | 25.B | 26.C | 27.B | 28.C | 29.B | 30.B

Mathematics:

31.A | 32.B | 33.B | 34.C | 35.C | 36.B | 37.A | 38.C | 39.C | 40.A

41.C | 42.D | 43.B | 44.A | 45.B | 46.A | 47.B | 48.B | 49.B | 50.B

51.A | 52.A | 53.A | 54.B | 55.B | 56.C | 57.B | 58.A | 59.B | 60.A