SCIENCE

1. The mode of nutrition in green plants is called:
   a) Heterotrophic b) Saprophytic
   c) Autotrophic d) Parasitic
2. The process by which green plants prepare their own food is called:
   a) Transpiration b) Photosynthesis
   c) Respiration d) Germination
3. Which of the following substances is not required for photosynthesis?
   a) Carbon dioxide b) Water
   c) Oxygen d) Sunlight
4. Which pigment in leaves traps sunlight for photosynthesis?
   a) Xanthophyll b) Carotene
   c) Chlorophyll d) Anthocyanin
5. The tiny pores on the surface of leaves for gas exchange are called:
   a) Veins b) Guard cells
   c) Stomata d) Epidermis
6. The organism that absorbs food from dead and decaying matter is called:
   a) Parasite b) Saprotroph
   c) Symbiont d) Autotroph
7. The association between Rhizobium bacteria and leguminous plants is an example of:
   a) Parasitism b) Saprophytism
   c) Symbiosis d) Predation
8. The process of taking food into the body is called:
   a) Digestion b) Assimilation
   c) Ingestion d) Absorption
9. The enzyme amylase present in saliva helps in the digestion of:
   a) Proteins b) Fats
   c) Starch d) Vitamins
10. Which part of the digestive system is responsible for the absorption of nutrients?
    a) Stomach b) Small intestine
    c) Large intestine d) Liver
11. The mode of nutrition in which organisms make food themselves from simple substances is called
    (1) Autotrophic nutrition
    (2) Heterotrophic nutrition
    (3) Saprotrophic nutrition
    (4) All of the above
12. Some organisms live together and share shelter and nutrients. This is called
    (1) Predation
    (2) Symbiotic relationship
    (3) Autotrophs
    (4) Heterotrophs
13. The bacterium which provides nitrogen to the leguminous plants is
    (1) Rhizobium (2) Yeast
    (3) Fungi (4) Lichens
14. What are the raw materials required for photosynthesis?
    (1) Water, carbon dioxide, and sunlight
    (2) Oxygen and water
    (3) Oxygen and glucose
    (4) Nitrogen and carbon dioxide
15. What is the ultimate source of energy for all living organisms?
    (1) Water energy (2) Wind energy
    (3) Solar energy (4) Chemical energy
16. What is the function of the teeth in animals?
    (1) Digest food
    (2) Chew and grind food
    (3) Absorb nutrients
    (4) Produce saliva

Rough Work

17. Which organ in humans absorbs most nutrients from the food?
    (1) Stomach
    (2) Small intestine
    (3) Large intestine
    (4) Liver
18. The largest gland in the human body is
    (1) Oesophagus (2) Salivary gland
    (3) Liver (4) Villi
19. The process of digestion taking place in grass-eating animals is called
    (1) Egestion (2) Rumination
    (3) Assimilation (4) Absorption
20. The movement of food in food pipe is called
    (1) Linear movement
    (2) Rectilinear movement
    (3) Smooth movement
    (4) Peristaltic movement
21. Which of the following is a natural indicator?
    (1) Phenolphthalein (2) Methyl orange
    (3) Litmus (4) None of these
22. Acids turn blue litmus paper into:
    (1) Red (2) Green
    (3) Colourless (4) No change
23. Which of the following substances is basic in nature?
    (1) Lemon juice
    (2) Vinegar
    (3) Baking soda solution
    (4) Orange juice
24. Chemical name of common salt is:
    (1) Sodium hydroxide
    (2) Sodium chloride
    (3) Sodium carbonate
    (4) Potassium chloride
25. Which of the following is used to reduce acidity in soil?
    (1) Vinegar
    (2) Quick lime
    (3) Orange juice
    (4) Hydrochloric adid
26. Which statement is true about neutralization?
    (1) Base + Salt ? Acid + Water
    (2) Acid + Water ? Base + Salt
    (3) Acid + Base ? Salt + Water
    (4) Acid + Base ? Gas + Salt
27. Turmeric is a natural indicator. Its colour changes to red when:
    (1) Added to acidic solution
    (2) Added to basic solution
    (3) Mixed with salt solution
    (4) Mixed with water
28. When an ant bites, it injects formic acid. To relieve pain, we apply:
    (1) Vinegar
    (2) Baking soda solution
    (3) Orange juice
    (4) Hydrochloric acid
29. Which of the following statements is correct?
    (i) Acids have sour taste.
    (ii) Bases have soapy touch.
    (iii) Salts are always acidic in nature.
    (1) Only i and ii are correct
    (2) Only ii and iii are correct
    (3) Only i and iii are correct
    (4) All i, ii and iii are correct
30. Which acid is present in curd
    (1) formic acid (2) lactic acid
    (3) Acetic acid (4) Nitric acid

Rough Work

31. Heat is a form of:
(1) Force (2) Energy
(3) Matter (4) Pressure

32. The SI unit of temperature is:
(1) Celsius (2) Fahrenheit
(3) Kelvin (4) Joule

33. Which device is used to measure temperature?
(1) Thermometer (2) Barometer
(3) Hygrometer (4) Ammeter

34. The normal human body temperature is:
(1) 100 °C (2) 37 °C
(3) 27 °C (4) 0 °C

35. Heat always flows from:
(1) Cold object to hot object
(3) Both directions equally
(2) Hot object to cold object
(4) None of these

36. The clinical thermometer is usually graduated from:
(1) 0 °C to 100 °C (2) 35 °C to 42 °C
(3) -10 °C to 50 °C (4) 100 °C to 200 °C

37. Heat transfer in solids takes place mainly by:
(1) Convection (2) Conduction
(3) Radiation (4) Evaporation

38. Which of the following materials is a good conductor of heat?
(1) Wood (2) Plastic
(3) Copper (4) Rubber

39. Land breeze usually occurs during:
(1) Day (2) Night
(3) Summer (4) Monsoon

40. Light-coloured clothes are preferred in summer because they:
(1) Absorb more heat
(2) Reflect most of the heat
(3) Produce coolness
(4) Are fashionable

MATHS

41. Which of the following rational numbers is equivalent to $\frac{2}{3}$?
(1) 3/2 (2) 4/9
(3) 4/6 (4) 9/4

42. Rational numbers which have both numerator and denominator as negative integers is called a
(1) positive rational number
(2) negative rational number
(3) numerator
(4) denominator

43. If $\frac{x}{6}=\frac{7}{-3}$, then the value of x is :
(1)-14 (2)21
(3) 14 (4)-21

44. Represent $\frac{-102}{119}$ in the standard form :
(1) $\frac{-4}{7}$ (2) $\frac{-6}{7}$
(3) $\frac{-6}{17}$ (4) None of these

45. The ascending order of (- 2/3) , (5/4) , (- 3/7) is
(1) (- 2/3) < (5/4) < (- 3/7)
(2) (- 3/7) < (5/4) < (- 2/3)
(3) (- 2/3) < (- 3/7) < (5/4)
(4) (5/4) < (- 3/7) < (- 2/3)

Rough Work

46. The additive inverse of –5/6 is
(1) –6/5 (2) 5/6
(3) 6/5 (4) –5/6

47. If 2/3, y/6 and x/15 are equivalent, then the value of x and y are
(1) 10 and 4 (2) –10 and 4
(3) 12 and 6 (4) 4 and 10

48. Evaluate : $\frac{9|3-5|-5|4|\div 10}{-3(5)-2\times 4\div 2}$
(1) $\frac{9}{10}$ (2) $-\frac{8}{17}$
(3) $-\frac{16}{19}$ (4) $\frac{4}{7}$

49. Compare and fill the box.
$\frac{-9}{6}-\frac{4}{3}-\frac{17}{2}[\ ]\frac{-3}{5}-\frac{7}{19}-\frac{5}{6}$
(1) = (2)<
(3)> (4) Can't be determined

50. Area of a circle with diameter 'm' radius 'n' and circumference 'p' is
(1)$2\pi r$ (2) πm^2
(3) πp^2 (4) πn^2

51. Select correct statements:
(1) All natural numbers are whole numbers but all whole numbers are not natural number.
(2) Zero is an integer which is neither a positive number nor a negative number.
(3) When zero is added to any other number it gives the same number.
(4) All of these

52. How many prime numbers are there in 10×82×13?
(1) 10 (2) 8
(3) 3 (4)9

53. When the integers -3, 2, -1, 4, 5 are arranged in ascending order, which number lies in the middle?
(1)-3 (2) 2
(3)-1 (4) 4

54. The value of 5 / (- 1) does not lie between
(1) 0 and-10 (2) 0 and 10
(3)-4and-15 (4)-6 and 6

55. Multiplicative inverse of -1 is
(1) 1 (2)-1
(3) 0 (4) Does not exist

56. Which of the following is an improper fraction?
(1) 7/10 (2) 7/9
(3) 9/7 (4) None of these

57. Which of the following is a reducible fraction?
(1) 105/102 (2) 104/121
(3) 77/72 (4) 46/63

58. Which of the following is correct?
(1) $\frac{2}{3}>\frac{2}{5}>\frac{2}{7}>\frac{2}{9}$ (2) $\frac{2}{3}<\frac{2}{5}<\frac{2}{7}<\frac{2}{9}$
(3) $\frac{1}{3}<\frac{1}{5}<\frac{1}{7}<\frac{1}{9}$ (4) $-\frac{1}{3}>-\frac{1}{5}>-\frac{1}{7}>-\frac{1}{9}$

59. Each side of a square is $5\frac{2}{3}$ m long. Find its area.
(1) $34\frac{1}{9}$ m^2 (2) $32\frac{1}{9}$ m^2
(3) $\frac{289}{9}$ m^2 (4) None of these

60. A car runs 16 km using 1 litre of petrol. How much distance will it cover in $2\frac{3}{4}$ litres of petrol?
(1) 24 km (2) 36 km
(3) 44 km (4) $32\frac{3}{4}$ km

Rough Work

61. What should be subtracted from 0.1 to get 0.03?
(1) 0.7 (2) 0.07
(3) 0.007 (4) None of these

62. The equivalent fraction of $\frac{2}{3}$ having the denominator 18 is :
(1) $\frac{2}{18}$ (2) $\frac{18}{3}$
(3) $\frac{12}{18}$ (4) $\frac{18}{27}$

63. If 2805 ÷ 2.55 = 1100, then 280.5 ÷ 25.5 = _____
(1) 1.1 (2) 1.01
(3) 0.11 (4) 11

64. The range of the data 14, 15, 18, 25, 11, 40, 36, 30 is:
(1) 29 (2) 27
(3) 24 (4) 26

65. If the mean of 5, 7, x, 10, 5 and 7 is 7, then find the value of x.
(1) 6 (2) 7
(3) 8 (4) 9

66. The mean weight of 21 students is 21 kg. If a student weighing 21 kg is removed from the group, the what is the mean weight of the remaining students?
(1) 20 kg (2) 21 kg
(3) 19 kg (4) None of these

67. Find the mode from the following data:

Weight (in kg)	28	30	32	34	37	38
No. of Student	8	3	6	10	12	5

(1) 32 (2) 37
(3) 30 (4) 34

68. In the frequency distribution of discrete data given below, the frequency p against value 3 is missing.

Variable (x)	0	1	2	3	4	5
Frequency (f)	4	20	40	p	20	4

If the mean is 2.5, then the missing frequency p will be
(1) 0 (3) 30
(2) 10 (4) 40

69. If the mean of 4, x and y is 6, then find the mean of x, y and 10.
(1) 10 (2) 12
(3) 3 (4) 8

70. Solve for x: 15(x – 9) – 2(x – 12) + 5(x + 6) = 0
(1) –3 (2) $\frac{1}{2}$
(3) $\frac{9}{2}$ (4) 4

71. The sum of one half, one third and one fourth of a number exceed the number itself by 12. The number is:
(1) 72 (2) 144
(3) 180 (4) 244

72. If twice a certain number is diminished by five, the result is equal to twelve added to the number. Find the number
(1) 18 (2) 16
(3) 15 (4) 17

73. Solve for x : $\frac{x+b}{a-b} = \frac{x-b}{a+b}$.
(1) a (2) 2a
(3) –a (4) –2a

Rough Work

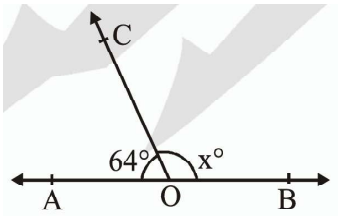
74. The sum of seven consecutive natural numbers is 1617. How many of these numbers are not prime:
(1) 4 (2) 2
(3) 5 (4) 7

75. If two supplementary angles differ by 44 deg then one of the two angles is
(1) 102° (2) 65°
(3) 112° (4) 72°

76. The sum of all the angles at a point is always:
(1) 180° (2) 360°
(3) 90° (4) 270°

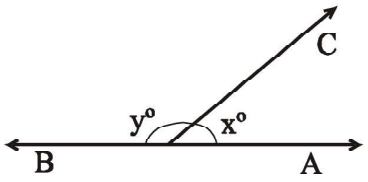
77. If x and (x + 30°) are complements of each other, find the value of x.
(1) 60° (2) 30°
(3) 90° (4) 45°

78. In the given figure, AOB is a straight line and the ray OC stands on it. If $\angle AOC=64°$ and $\angle BOC=x°$, then find the value of ?.



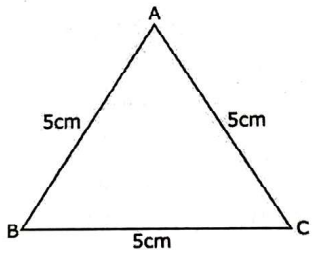
(1) 100° (2) 120°
(3) 116° (4) 123°

79. In the given figure, $\angle x$ is greater than one fifth of a right angle then:



(1) $y \geq 162°$ (2) $y \geq 162°$
(3) $y \leq 162°$ (4) $y < 162°$

80. If a triangle ABC has each side of 5 cm, then the possible lines of symmetry will be



(1) 1 (2) 2
(3) 3 (4) 40

Reasoning

81. Dog : Bark :: Cow : ?
A. Roar B. Moo
C. Bray D. Neigh

82. Find the odd one out.
A. Circle B. Triangle
C. Square D. Rectangle

83. Apple : Fruit :: Spinach : ?
A. Leaf B. Vegetable
C. Food D. Tree

84. 81 : 9 :: 64 : ?
A. 16 B. 8
C. 4 D. 32

85. A is the father of B. B is the sister of C. How is A related to C?
A. Uncle B. Father
C. Brother D. Cousin

86. P is the mother of Q. R is the brother of P. How is R related to Q?
A. Uncle B. Father
C. Brother D. Grandfather

Rough Work

87. A is the son of B. C is the wife of B. How is C related to A?
A. Aunt B. Mother
C. Sister D. Grandmother

88. X is the brother of Y. Y is the sister of Z. How is X related to Z?
A. Brother B. Cousin
C. Father D. Uncle

89. M is the daughter of N. N is the wife of O. How is O related to M?
A. Father B. Brother
C. Grandfather D. Uncle

90. Four friends are sitting in a row. A is to the left of B, C is to the right of B, and D is at the extreme right. Who is sitting at left most.
A. A B. B
C. C D. D

91. Six friends - P, Q, R, S, T, U - are sitting around a circular table. P is to the immediate right of Q. If R is opposite Q, S is right of R, then who is opposite to P?
A. R B. S
C. T D. U

92. Five persons ABCDE are sitting in a line. A is left to B, C is right to B, D is right to C, and E is leftmost. Who is in the center?
A. A B. B
C. C D. D

93. In a row of 7 students, A is third from the left and B is fourth from the right. If they interchange their positions, A becomes fourth from the right. How many students are there in the row?
A. 7 B. 8
C. 9 D. 10

94. Five people PQRST are sitting in a circle. S is between P and Q. R is to the left of P. Who is between R and Q?
A. P B. S
C. T D. None

95. 321, 301, ?, 261, 241
(1) 281 (2) 161
(3) 241 (4) 261

96. 15, 17, 20, 22, 27, 29, ?, ?
(1) 31, 38 (2) 36, 38
(3) 36, 43 (4) 38, 45

97. ZTW, YSV, XRU, ?
(1) WTQ (2) QTW
(3) WQT (4) WQS

98. AGM, BHN, CIO, ?
(1) COU (2) FQK
(3) DJP (4) QXD

99. DFI, KMP, ?, YAD
(1) QSV (2) RTW
(3) SUX (4) RTV

100. If the english alphabet is written in reverse order and every other letter starting with Y is dropped then which letter will be exactly in the middle of the rest of the alphabet?
(1) M (2) N
(3) 0 (4) M or O

Rough Work