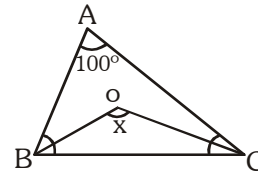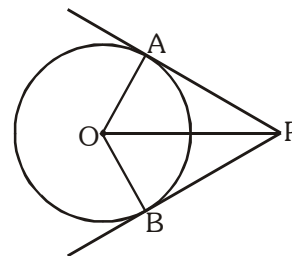1. The sum of squares of two successive natural numbers is 145. The numbers will be
   (1) 6, 7 (2) 7, 8
   (3) 8, 9 (4) 9, 10

2. $22\frac{1}{2}$ has how many $\frac{1}{4}$?

   (1) 22 (2) 44 (3) 45 (4) 90

3. Two coins are tossed simultaneously. What is the probalility of having at least one head?

   (1) $\frac{1}{4}$ (2) $\frac{2}{4}$ (3) $\frac{3}{4}$ (4) $\frac{4}{4}$

4. What is the correct relation in the given data?
   2, 3, 0, –1, 1, 5, 6, 4, 5, 8, 11
   (1) Mean = Median
   (2) Mean = 5
   (3) Median = Mode
   (4) Median = Mean + Mode

5. What is the distance between the points (3, –6) and (–2, 6)
   (1) 12 unit (2) 13 unit
   (3) 14 unit (4) 15 unit

6. If the sum of a progression 17 + 15 + 13 + 11 + ... is 72. The number of terms in the progression will be
   (1) 6 (2) 7 (3) 8 (4) 9

7. If $\tan\theta + \cot\theta = 3$ then $\tan^2\theta + \cot^2\theta = ?$
   (1) 7 (2) 9 (3) 11 (4) 27

8. If $\sin\theta - 1 = 0$, then θ will be
   (1) 0° (2) 90° (3) 30° (4) 60°

9. A wheel rotates 100 times to cover a distance of 88 meters. What is the diameter?
   (1) 7 cm (2) 14 cm (3) 22 cm (4) 10 cm

10. Three cubes of edges of 3 cm, 4 cm and 5 cm respectively are melted to form a bigger cube. The edge of the bigger cube will be
    (1) 12 cm (2) 8 cm (3) 7cm (4) 6 cm

11. H.C.F. and L.C.M. of two polynomials are x and $(x^3 - 9x)$ respectively. If one polynomial is $(x^2 + 3x)$, then second will be
    (1) $(x^2 + 3x)$ (2) $(x^2 - 9x)$
    (3) $(x^2 + 9x)$ (4) $(x^2 - 3x)$

12. There are 20 students in a class. The mean value of their scores is 135. On rechecking, two mistakes were found. After correction, the marks of one student was increased by 35 and the marks of the other was decreased by 15. What is the mean value of the marks after correction?
    (1) 135.5 (2) 136 (3) 155 (4) 134.5

13. Some people complete a work in 20 days. If the number of people is doubled and work is halved, in how many days will they complete it?
    (1) 5 (2) 10 (3) 20 (4) 40

14. If $3\sqrt{3} \times 3^3 \div 3^{-3/2} = 3^{a+2}$, then a = ?
    (1) 2 (2) 1/2 (3) 4 (4) 0

15. In the given figure, the angle bisector of $\angle B$ and $\angle C$ are BO and CO respectively. What is the value of x.
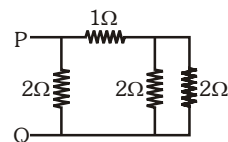

    (1) 120° (2) 130° (3) 140° (4) 150°

16. If 3A = 4B = 6C then A : B : C be

    (1) 3 : 4 : 6 (2) $\frac{1}{4} : \frac{1}{3} : \frac{1}{2}$

    (3) 6 : 4 : 3 (4) 4 : 3 : 2

17. Number of axis of symmetry in isosceles traingle is
    (1) 3 (2) 2 (3) 1 (4) 0

18. If a + b = 2 and $\frac{1}{a} + \frac{1}{b} = 2$, then $a^3 + b^3$ will be

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

19. In the given figure O is the center of circle and PA, PB are its tangents. If PA = 8 cm and PO = 10 cm then what is the value of OB?

    (1) 4 cm (2) 3 cm (3) 5 cm (4) 6 cm

ALLEN

20. $\dfrac{8}{40}$ is equivalent to

(1) 20 %   (2) 40 %   (3) 25 %   (4) 8 %

21. Angstrom is the unit used to express

(1) Length   (2) Mass

(3) Time   (4) None of these

22. A man walks 8 m toward East and then 6 m towards North. His magnitude of displacement will be

(1) 10 m   (2) 14 m   (3) 2 m   (4) Zero

23. A machine gun fires n bullets per second and the mass of each bullet is m. If the speed of bullets is v, then the force exerted on the machine gun will be

(1) mng   (2) mnv

(3) mnvg   (4) $\dfrac{mnv}{g}$

24. A body weight 60 kg on the earth surface. What would be its weight at centre of the earth

(1) 60 kg wt   (2) 6 kg wt

(3) 60 ×9.8 kg wt   (4) Zero

25. When the momentum of a body decreases by 10%, its Kinetic energy decreases

(1) 20%   (2) 40%

(3) 36%   (4) None of these

26. A fan produces a feeling of comfort during hot weather because

(1) Fun supplies cold air

(2) Our perspitation evaporates rapidly

(3) Our body radiates more heat in air

(4) Conductivity of air increases

27. If a ray of light incident on a plane mirror is such that it makes an angle of 30º with the mirror, then the angle of reflection will be

(1) 30º   (2) 45º   (3) 55º   (4) 60º

28. When we pluck the wire of a sitar, the waves produced in the wire are

(1) Longitudinal

(2) Transverse

(3) Sometimes longitudinal and sometimes transverse

(4) Electromagnetic

29. The unit of refractive index is

(1) Metre   (2) Degree

(3) Dioptre   (4) It has no unit

30. Which of the following colour of light undergoes the maximum deviation while passing through a glass prism?

(1) Red   (2) Blue

(3) Violet   (4) Green

31. The equivalent resistance between P and Q in figure will be

(1) 7 Ω   (2) 2 Ω   (3) $\dfrac{5}{3}$ Ω   (4) 1 Ω

32. The strength of a magnetic field of magnet increases when

(1) The number of magnetic lines of forces passing through a given area increases

(2) Strength of the pole increase

(3) Distance between the magnetic pole

(4) Both (1) and (2)

33. Biogas is a mixture of

(1) $CO + H_2 + CH_4$ (2) $CO_2 + CH_4 + H_2S$

(3) $CO + H_2$ (4) CH_4

34. On arranging water, sugar and oxygen in increasing order of attraction between their particles. Which of the following will be the correct arrangement?

(1) Water, Oxygen, Sugar

(2) Oxygen, Sugar, Water

(3) Sugar, Oxygen, Water

(4) Oxygen, Water, Sugar

35. Which of the following will show Tyndall effect ?

(1) Solution of common salt in water

(2) Starch solution

(3) Solution of sugar in water

(4) Vinegar

36. The atomic number of Mg is 12. The number of electrons in its M shell will be

(1) Eight   (2) Ten

(3) Two   (4) Zero

37. The atomic masses of two isotopes of chlorine are 35 and 37. The number of neutrons will be

(1) 18, 20   (2) 20, 18

(3) 17, 18   (4) 18, 17

38. $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$

    The above reaction is of which type

    (1) Combination   (2) Dissociation

    (3) Displacement   (4) Double displacement

39. The aqueous solution of Na_2SO_4 will have a pH value

    (1) 7   (2) less than 7

    (3) more than 7   (4) Zero

40. What is the mass of 12.044×10^{23} number of O_2 molecules?

    (1) 8g   (2) 16g   (3) 32g   (4) 64g

41. An element has electronic configuration 2, 8, 4. It belongs to which group and period of the modern periodic table?

    (1) Third group and fourth period

    (2) Fourth group and third period

    (3) Fourteenth group and third period

    (4) Fourteenth group and fourth period

42. Which of the following hydrocarbon have a triple bond?

    (1) C_2H_6 (2) C_3H_4

    (3) C_3H_6 (4) C_3H_5

43. Objective of roasting of ore is

    (1) To oxidize it

    (2) To reduce it

    (3) To remove volatile matter

    (4) (1) and (3) both

44. Which of the following has electron bond ?

    (1) O_2 (2) $CHCl_3$

    (3) NaCl   (4) CCl_4

45. The compound obtained by reaction C_2H_5OH with concentrated H_2SO_4 , 443 K is

    (1) C_2H_4 (2) CH_3CHO

    (3) CH_3COOH (4) CH_3COCH_3

46. Teflon is a polymer of which of the following monomer

    (1) Mono fluoro ethene   (2) Tetra fluoro ethene

    (3) Di fluoro ethene   (4) Tri fluoro ethene

47. Ecosystem comprises both abiotic and biotic component. Biotic component of an ecosystem consists of

    (1) Producers   (2) Consumers

    (3) Decomposers   (4) All the above

48. In human beings sugar level in blood is controlled by

    (1) Adrenaline   (2) Estrogen

    (3) Insulin   (4) Thyroxine

49. In whittaker's classification unicellular organisms are grouped under

    (1) Kingdom protista   (2) Kingdom Fungi

    (3) Kingdom Monera   (4) Kingdom Plantae

50. Which of the following are simple tissues?

    (1) Parenchyma, Xylem, Collenchyma

    (2) Parenchyma, Collenchyma, Sclerenchyma

    (3) Parenchyma, Xylem, Sclerenchyma

    (4) Parenchyma, Xylem, Phloem

51. The best way to get rid of non biodegradable waste is

    (1) Dumping   (2) Burying

    (3) Recycling   (4) Burning

52. Asha found a plant possess tap root and reticulate venation in leaves. This plant may be

    (1) Monocot   (2) Dicot

    (3) Both (1) and (2)   (4) None of above

53. Which of the following plays an important role in nitrogen cycle?

    (1) Yeast   (2) Nitrobacter

    (3) Mucor   (4) Spirogyra

54. Ginger is a stem and is not a root because

    (1) It stores food material

    (2) It has nodes and internodes

    (3) It lacks chlorophyll

    (4) It grows horizontally in the soil

55. Which organ of the body is most affected by excessive intake of alcohol?

    (1) Stomach   (2) Lungs

    (3) Liver   (4) Spleen

56. In which of the following plant generally root nodules are found?

    (1) Black piper   (2) Pea

    (3) Onion   (4) Radish

57. If a heterozygous tall plant is crossed with a homozygous dwarf plant, the proportion of dwarf progeny will be

    (1) 50%   (2) 75%   (3) 100%   (4) 25%

58. Which one of the following does not have valves?
(1) Auricle
(2) Ventricle
(3) Artery
(4) Vein

59. Which one of the following is not a viral disease?
(1) Polio
(2) Mumps
(3) AIDS
(4) Cholera

60. The main function of phloem in plants is the conduction of
(1) Food
(2) Minerals
(3) Water
(4) All the above

61. In which subject area was Panini a great scholar?
(1) Language and Grammar
(2) Ayurveda
(3) Astronomy
(4) Biology

62. Between whom was the third battle of Panipat fought?
(1) Hemu and Akbar
(2) Humanyun and Shershah
(3) Marathas and Ahamdshah Abdali
(4) British and Teepu Sultan

63. By which name was Iraq known in ancient time ?
(1) Babylon
(2) Abyssinia
(3) Syria
(4) Mesopotamia

64. Who was the first Hindu court poet who accepted Din-e-llahi?
(1) Todar Mal
(2) Man Singh
(3) Birbal
(4) Bhagwan Das

65. Who implemented the doctrine of lapse?
(1) Lord Dalhousie
(2) Lord Vesley
(3) Lord Canning
(4) Loard Wellesley

66. When was the battle of plassey fought ?
(1) 1556
(2) 1755
(3) 1757
(4) 1857

67. When was the United Nations Organisation established?
(1) 24 October 1945
(2) 02 October 1945
(3) 10 December 1945
(4) 15 August 1945

68. Gandhiji's famous "Dandi March" was related to which movement ?
(1) Quit India movement
(2) Khilafat Andolan
(3) Non Co-operation movement
(4) Savinay Avagya Andolan

69. Which ruler earned fame for road construction in the medieval period ?
(1) Akbar
(2) Shah Jahan
(3) Shershah Suri
(4) Razia Begum

70. Which one of the following groups of countries were known as "Axis Power"?
(1) Germany, Japan and Italy
(2) Britian, France and Soviet Union
(3) India, Britian and Italy
(4) U.S.A. Britian and France

71. Who was the facist dictator of Italy?
(1) Hitler
(2) Napolepn
(3) Mussolini
(4) Bismark

72. 'Open door Policy' was declared to establish trade relation with which country ?
(1) United State of America
(2) Japan
(3) Great Britian
(4) China

73. Which is the standard meridian of India ?
(1) $80°$ East Longitude
(2) $81°$ East Longitude
(3) $82\frac{1}{2}°$ East Longitude
(4) $81\frac{1}{2}°$ East Longitude

74. At the mouth of which river is the Sunderban delta formed?
(1) Godavari
(2) Krishana
(3) Kaveri
(4) Ganga

75. What is meant by the term "Loo' ?
(1) Cold and dry winds
(2) Strong hot and dry winds
(3) Retreating Mansoon
(4) The Trade winds

76. Which continent is divided into almost equal parts by the Tropic of capricorn ?
(1) Australia
(2) Africa
(3) Asia
(4) South America

77. Which of the following is not a tiger reserve in India?
(1) Sunderban National Park
(2) Kaziranga National Park
(3) Sariska Wild life Sanctuary
(4) Manas Wild life Sanctuary

78. Which of the following group is grown in Rabi Season?

(1) Rice, Jute, Maize

(2) Pulses, Melons, Vegetables

(3) Sugarcane, Tobacco, Tea

(4) Wheat, Peas, Mustard

79. What is the name of the Hill station which is not in Himalayas?

(1) Ooty   (2) Darjeeling

(3) Shimla   (4) Nainital

80. What is "Jet Stream"?

(1) House boat

(2) Fast blowing air current of the upper Atmosphere

(3) Warm ocean current

(4) Small river

81. Choose the name of the state which touches the boundary of Chhattisgarh?

(1) Andhra Pradesh   (2) Bihar

(3) Uttarakhand   (4) Telangana

82. Which one of the following cities has emerged as the " Electronic Capital" of India?

(1) Delhi   (2) Bengaluru

(3) Kolkata   (4) Hyderabad

83. In which country is the Mount Everest situated?

(1) India   (2) Bhutan

(3) Nepal   (4) China

84. Which soil is the best for production of Jute?

(1) Red Soil   (2) Black Soil

(3) Laterite Soil   (4) Alluvial Soil

85. The Indian constitution is a republican constitution because it has _____?

(1) an elected Prime Minister

(2) a federal form government

(3) a paliamentary democracy

(4) an elected President

86. What is the importances of public opinion in a democracy ?

(1) Political awareness among people

(2) Central dictatorship of the ruler

(3) Coordination between legislative and executive

(4) All the above

87. Who can call the joint session of the parliament and addresses it?

(1) The governor

(2) President

(3) Prime minister

(4) Speaker of Lok Sabha

88. Which effective tool of the parliament controls the council of ministers?

(1) Calling attention motion

(2) Adjournment motion

(3) No confidence motion

(4) Asking questions

89. Which of the following is included in the Concurrent list ?

(1) Trade   (2) Education

(3) Police   (4) Banking

90. In which system of elected bodies about the third seats are reserved form women ?

(1) Panchayat and urban bodies

(2) Lok Sabha

(3) Rajya Sabha

(4) State Assemblies

91. The voting age was lowered from 21 to 18 years according to which amendment of constitution?

(1) 52nd   (2) 61st   (3) 86th   (4) 92nd

92. Where is the headquater of United Nations educational Scientific and Cultured organization located?

(1) Rome   (2) Paris

(3) Mexico   (4) New York

93. When does the growth rate and death rate remain high ?

(1) Both the Birth rate and death rate remain high

(2) The death rate decreases but birth rate remains high

(3) There is reduction in both

(4) All of the above

94. What is meant by division of labour ?

(1) Specialisation of economic activity

(2) Production en large scale

(3) Speicalisation in quality and quantity of production

(4) Increases is production

95. What is increased due to the gap between the demand and supply?

(1) Unemployment   (2) Price of goods

(3) Mobility of Labour   (4) Poverty

96. Which type of tax is land revenue in India?

(1) Direct tax   (2) Indirect tax

(3) Income tax   (4) Custom duty

97. "Hallmark" is used as a logo for which of the following?

(1) Agricultural Products

(2) Jewellery

(3) Electrical goods

(4) Milk Products

98. When do we celebrate " Population day" every year?

(1) 11th July   (2) 11th August

(3) 11th January   (4) 10th December

99. Who was the first President of the India Planning Commission ?

(1) Lal Bahadur Shastri

(2) Jagjeevan Ram

(3) Pt. Jawahar Lal Nehru

(4) Indira Gandhi

100. Which one of the following is the most apporpriate meaning of under employment.

(1) Workers are not paid for their work

(2) Workers are working less than what they are capable of doing

(3) Workers are working in a lazy manner

(4) Workers do not wnat to work.