TEST PAPER - 1

Instructions

- This test consists of the following two Sections:

Section –	A (i)	Bilingual Language Comprehension
	A (ii)	Mathematical Thinking and Reasoning
Section –	B (i)	Subject Knowledge – Science
	B (ii)	Subject Knowledge – Social Science

- Total weightage of the question paper is 140 marks; each sub-section is given 35 marks weightage.

- All questions in the question paper do not carry equal marks. The weightage for each question is given alongside.

- There is no negative marking.

SECTION A (i)
Bilingual Language Comprehension

I. दिए गए लेख को पढ़कर इस पर आधारित 1-4 प्रश्नों के उत्तर दीजिए-   2×4= 8

सरकार सबको समान शिक्षा और स्वास्थ्य सुविधाओं के सपने दिखाना चाह रही है। लेकिन निजीकरण के दौर में शिक्षा-दीक्षा और इलाज निरंतर महँगा होता जा रहा है। स्वच्छ पेयजल देश की राजधानी में आसानी से उपलब्ध नहीं है और बोतलबंद पानी बेचने वाली कंपनियां अवश्य बढ़ती जा रही हैं। सरकारी अस्पतालों में एक्स-रे और खून की जांच करने वाली मशीनें खराब या कम होती जा रही हैं और निजी केंद्रों में जांच परीक्षण के रेट बराबर बढ़ रहे हैं। सरकारी अस्पतालों में अच्छे व काबिल डॉक्टर मौजूद होने के बावजूद मरीजों को बहुत मुश्किल से उपलब्ध हैं जबकि निजी क्षेत्र में झोला छाप डॉक्टर भी मोटी फीसें ले कर अपनी मुट्ठी गरम कर रहे हैं। छोटा मकान बनाने के लिए ईंट, सीमेंट, सफेद पत्थर, लोहा तक निरंतर महँगा होता जा रहा है। महानगरों के इर्द-गिर्द खड़ी की जाने वाली इमारतों के फ्लैटों की कीमत लाखों में पहुँच रही है और दिन-रात मजदूरी करने वालों की झोंपड़ियां तक तोड़ी जा रही हैं। दिल्ली से लेकर छोटे शहरों तक के विकास प्रधिकरणों को मुनाफा कमाकर दिखाने का लक्ष्य दिया जा रहा है। ऐसी स्थिति में गरीबों की हालत की चिंता कहीं उनकी चिंता बनकर न रह जाए।

1. लेख के आधार पर इनमें से कौन-सा निष्कर्ष नहीं निकाला जा सकता है?

(a) सामाजिक सुविधाएं निरंतर महंगी होती जा रही हैं।

(b) किसी भी देश का निजीकरण उसके हित में साबित होता है।

(c) आय की असमनताओं को मद्देनजर रखते हुए सरकार की सभी कोशिशें विफल साबित हुई हैं।

(d) आय की असमनताएं निजीकरण का परिणाम हैं।

2. इस लेख में निम्नलिखित में से कौन-सा पहलू नहीं है?

(a) बढ़ती महंगाई   (b) सामाजिक पहलू

(c) आर्थिक पहलू   (d) वैज्ञानिक तथ्य

3. इस लेख में कौन से छिपे संदेश हैं?

A. समाज में आय की असमानताओं का बढ़ना

B. सरकार द्वारा गरीब वर्ग का उपयोग अपने वोट बैंक के लिए करना

C. निजीकरण के दुष्परिणाम

D. गरीबों की हालत सुधारने के प्रयल

(a) A & D   (b) B & C

(c) A & C   (d) B & D

4. जन-सुविधा मुहैया कराने की दृष्टि से सरकारें-

(a) सफल हैं   (b) असफल हैं

(c) सरकार जरूरी नहीं समझती

(d) निजी क्षेत्र को लाभ देना चाहती है

II. **खाली स्थानों के लिए उपयुक्त शब्द चुनें: – 1×3= 3**
सामाजिक सुविधाएं उपलब्ध कराने की दृष्टि से सरकार द्वारा की गई कोशिशें काफी हद तक ......5....... रही हैं। सरकारी अस्पतालों में भी ......6....... डॉक्टर मरीजों को सेवाएं प्रदान करने में उपलब्ध नहीं हैं।

5. (a) सफल (b) विफल
   (c) महंगी

6. (a) सभी (b) कई
   (c) गरीब

7. दिए गए संदर्भ के लिए कौन-सा मुहावरा सबसे उपयुक्त होगा? **2 marks**
   'जब मोहनलाल की काम करने की बारी आई तो वह बोला – 'इसके लिए पूरा सामान अभी उपलब्ध नहीं है' बाद में पता चला कि उसे तो वह काम करना ही नहीं आता था।

   (a) आम के आम गुठलियों के दाम
   (b) नाच न जाने आंगन टेढ़ा
   (c) अधजल गगरी छलकत जाए
   (d) थोथा चना बाजे घना

8. यदि निम्न वाक्य एक लेख से लिए गए हों तो इनमें कौन-सा पहले आना चाहिए और कौन-सा बाद में, इस आधार पर इन्हें सही क्रम में लगाएं। **2 marks**

   A. दुनिया के समाजों में मध्यवर्गीय उभार एक बेहतर संस्कृति लेकर आता रहा है।
   B. हमारे देश के नए-नवेले मध्यवर्ग का मध्यवर्गीय समाज से परिचय आर्थिक संपन्नता की बदौलत है।
   C. यूरोप आदि देशों में जन आधुनिकीकरण-औद्योगिकरण हुआ तो वहां हर देश में ख्याति प्राप्त चिंतक, दार्शनिक, कलाकार, अर्थशास्त्री, कवि पैदा हुए। ऐसा हमारे यहां नहीं हो सका और हो भी नहीं सकता था।
   D. ऐसा नहीं कह सकते कि मध्यवर्गीय संस्कृति बिल्कुल समृद्ध नहीं हुई। समृद्ध हुई, लेकिन आर्थिक संपन्नता के मुकाबले वह बहुत कम है।

   (a) ABCD (b) DCBA
   (c) ACDB (d) ADCB

Read the following passage carefully and answer to following questions: 5×2 = 10 Marks

'Poverty is the assumption that people can be counted on the spend their money wisely, not only in the proportion they spend on food, but on the sorts of food they buy. On the whole, most people do spend as much as they need on food. But I believe a much larger problem is that which arises from spending part of the money on the wrong sorts of food.

Partly, this is due to ignorance of food values. Not all the high protein foods, for example, are very expensive. Meat can be stewing beef, not necessarily steak: it is possible to buy excellent and inexpensive cheese; well prepared vegetables can be very palatable and contain much the same nutrients as fruit. But there is now-a-days a more important reason why people buy the wrong sorts of food. It derives from one of the nutritionally conflicting actions of the food manufactures.

9. According to the writer, most people :
   (a) consume too much food even if they cannot afford it.
   (b) shop for the improper kinds of food.
   (c) cannot afford to buy enough food.
   (d) spend too much on expensive food.

10. The tone of the passage is :
    (a) Critical
    (b) Instructive and moralistic
    (c) Investigatory (d) Pessimistic

11. The most appropriate title for the passage is:
    (a) Poverty and malnutrition
    (b) Health and ill health
    (c) Ignorance of food values
    (d) Wealth and health

12. 'Palatable food' means :
    (a) taste of healthy food.
    (b) highly seasoned and spicy food
    (c) tasty food
    (d) the roof of the mouth

13. Which of the following cannot be deduced from the passage?
    (a) People know how much proportion to spend on food
    (b) Most people choose to spend on wrong types of food.
    (c) Nutritious food is always expensive.
    (d) None of the above.

Directions: (14 to 17) Fill in the blanks with the appropriate words: 1½×4= 6 Marks

People can be ___14___ spending a good amount on food items. They make wrong ___15___ on what to buy inspite of spending a large share of their income on it. Out of many food ___16___ cheap food items are also___17___.

14. (a) assumed to be   (b) seen
    (c) known for   (d) afford

15. (a) assumptions   (b) choices
    (c) areas   (d) thoughts

16. (a) varieties   (b) sections
    (c) available   (d) areas

17. (a) affordable   (b) nutritious
    (c) tasty   (d) good to eat

18. **Arrange the following sentences in the order in which they should appear in a passage :**

2 Marks

I.   The stories explained the inexplicable : unexpected good or bad fortune was the work of fairies and in many cases these stories mirrored what people were thinking.

II. In the days before men could read or write, the exploits of great warriors or hunters were handed down verbally from one generation to another by story-tellers.

III. From the earliest times the teller of stories has held an important place in the community.

IV. Many of these tales were primitive 'wish - fulfilments' and nearly always, the wicked received their just deserts and the good people 'lived happily ever after.'
    (a) I, III, II, IV   (b) II, IV, III, I
    (c) III, II, I, IV   (d) IV, I, II, III

Read the following passage and choose the most appropriate answer for Q. 19 & 20

1×2 = 2 Marks

'Most of the world's great cities have grown haphazardly, little by little in response to the needs of the moment; very rarely is a city planned for the remote future. The evolution of a city is like the evolution of the brain; it develops from a small centre and slowly grows and changes, leaving many old parts still functioning.

19. Which of the following is true according to the passage?
    (a) old parts are replaced by the new in the evolution of brain and cities both
    (b) Evolution of cities is different from brain
    (c) The evolution of the brain takes place gradually, not suddenly
    (d) None of the above

20. The overall tone of the passage is
    (a) Critical
    (b) Scientific and logical
    (c) Narration of Events
    (d) None of these

**SECTION – A (ii)
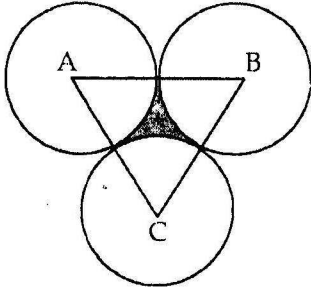Mathematical Thinking and Reasoning**

Attempt all questions :   **Marks: 35**

21. An employee is engaged on the condition that he will get Rs.3000 and a bicycle at the end of the year. On leaving the job after 8 months, he got the bicycle and Rs. 1700. The cost of the bicycle is :   **2 Marks**
    (a) Rs. 600   (b) Rs. 300
    (c) Rs.900   (d) Rs. 850

22. A can do a work in 10 days, B in 15 days. They can work together for 5 days. The rest of the work is done by C in 2 days. If they get Rs.150 in all, their individual shares are :
1 Mark
    (a) 75 : 25 : 50   (b) 75 : 50 : 25
    (c) 25 : 50 : 75   (d) 25 : 75 : 50

23. The radius of a circle is increased by 100%. The area of the circle increases by : **1 Mark**
    (a) 100%   (b) 200%
    (c) 300%   (d) 400%

24. If the fifth term of a geometric progression is five, the product of the third, fourth, sixth and seventh term is :   **1 Mark**

(a) 250   (b) 125

(c) 625   (d) None of these

25. Find the area of the shaded region given that ABC is an equilateral triangle with AB=BC=CA=4   **2 Marks**

(a) $5\sqrt{6} - 6\pi$ (b) $3\sqrt{2} - \dfrac{\pi}{2}$

(c) $4\sqrt{3} - 2\pi$ (d) $4 - 3\sqrt{\pi}$

26. A man gets a salary of 'x' and he saves 15% of his salary. In the next year he gets an increase of 20% and he saves 25% of his salary. The increase in saving is Rs.30. What is his current salary per annum?   **2 Marks**

(a) 160   (b) 240

(c) 320   (d) 400

27. In a pack are 20 cards numbered 1 through 20 and 4 additional blank cards. What is the probability of drawing a card with a number on it which is divisible by 3 or 5?

     2 Marks

(a) 11/24   (b) 9/24

(c) 10/24   (d) None of these

28. Two vessels contain a mixture of an acid in water in the ratio 3 : 2 and 4 : 3 respectively. Equal volumes of the mixture are taken from each vessel and mixed. What is the ratio of the acid to water in the new mixture? **1 Mark**

(a) 7 : 5   (b) 40 : 27

(c) 39 : 31   (d) 41 : 29

29. Kiran's salary first increased by 25% and then decreased by 25%. What is the net change in the salary?   **1 Mark**

(a) Increase by 10%

(b) Decrease by 10%

(c) Decrease by 6%

(d) Increase by 6%

30. What is the length of the edges of a cube whose volume is 1cm^3?   **1 Mark**

(a) 1/16 cm   (b) 16 cm

(c) 1/12 cm   (d) 12 cm

31. A circle of radius 'r', square of side 's' and an equilateral triangle of side 'a' have the same area, then :   **2 Marks**

(a) a<s<r   (b) s<a<r

(c) r<a<s   (d) r<s<a

32. The largest 4 digit square number is...**1 Mark**

(a) 9801   (b) 9409

(c) 9999   (d) 9991

33. There are infinite number of 1cm long matchsticks. Squares of different sizes are made from these. What is the maximum length of the side of a square such that the area of the square so formed is numerically less than the perimeter of the square?**1 Mark**

(a) 2   (b) 3

(c) 4   (d) 5

34. An electric pole of height 25m was struck by a lightening and broke into two. The top portion, which was not detached, fell down and came to rest at a point on the ground 10m from the foot of the pole. At what height did the pole give way?   **2 Mark**

(a) 10 m   (b) 11 m

(c) 10.5 m   (d) 9.5m

35. Which of the following is not true? **1 Mark**

I. A rhombus is also a parallelogram.

II. A square is also a rhombus.

III. A rhombus is also a square.

IV. A rhombus is also a trapezium.

(a) I & IV   (b) III & IV

(c) II & III   (d) II & IV

36 The angles of a triangle are in the ratio 3 : 5 : 7. The triangle is :   **1 Mark**

(a) acute angled   (b) right angled

(c) obtuse angled   (d) isosceles

37 If the vertical angle of a triangle is 130°, then the angle between the bisectors of the base angles of the triangle is :   **1 Mark**

(a) 65°   (b) 100°

(c) 130°   (d) 155°

38. Which of the following is not a criterion for congruence of triangles? **1 Mark**
   (a) SSA   (b) SAS
   (c) ASA   (d) SSS

39. If $\triangle ABC \cong \triangle FDE$ in which $AB = 5cm$, $\angle B = 40°$, $\angle A = 80°$ and $FD = 5cm$, then which of the following is true? **2 Marks**
   (a) $\angle D = 60°$ (b) $\angle E = 60°$
   (c) $\angle F = 60°$ (d) $\angle D = 80°$

40. If the altitudes from two verticals of a triangle to the opposite sides are equal, then the triangle is : **1 Mark**
   (a) equilateral   (b) isosceles
   (c) scalene   (d) right-angled

41. Which of the following is not true for a parallelogram? **1 Mark**
   (a) opposite sides are equal
   (b) opposite angles are equal
   (c) opposite angles are bisected by the diagonals
   (d) diagonals bisect each other

42 The median of a triangle divides it into two : **1 Mark**
   (a) triangles of equal area
   (b) congruent triangles
   (c) isosceles triangles
   (d) right triangles

43. The figure formed by joining the mid-points of the adjacent sides of a rectangle of sides 8cm and 6 cm is a : **1 Mark**
   (a) rectangle of area $24cm^2$
   (b) square of area $24cm^2$
   (c) trapezium of area $24cm^2$
   (d) rhombus of area $24cm^2$

44. Which of the following is a false statement? **2 Marks**
   (a) If the diagonals of a rhombus are 18 cm and 14 cm, then its area is $126cm^2$
   (b) Area of parallelogram $= \frac{1}{2} \times base \times$ corresponding height
   (c) A parallelogram and a rectangle on the same base and between the same parallels are equals in area.
   (d) If the area of a parallelogram with one

side 24cm and corresponding height h cm is $192cm^2$ then h = 8cm

45. I forgot the last 3 digits of a 7 digit telephone number. If I randomly dial the final 3 digit after correctly dialing the first four, what is the chance of me dialing the correct number? **2 Marks**
   (a) 1/1001   (b) 1/ 990
   (c) 1/999   (d) 1/1000

46. The value of $\dfrac{\log_2 25}{\log_2 5}$ is equal to : **1 Mark**
   (a) 0   (b) 1
   (c) 2   (d) 5

Section - B (i)
Subject Knowledge - Science

Attempt all questions :   **Marks: 35**

47. The variation in the colour of a star reflects its :
   (a) distance from the onlooker
   (b) surface temperature
   (c) age
   (d) density

48. Which of the following reasons best explains why food is cooked quickly in a pressure cooker?
   (a) Boiling point of water is increased
   (b) Boiling point of water is decreased
   (c) Heat is retained for long duration
   (d) Heat is absorbed quickly

49. When viewed from space, the sky would appear :
   (a) White   (b) Blue
   (c) Red   (d) Black

50. A man weighs 65kg. In which of the following places would his weight be greatest?
   (a) at equator   (b) at the centre
   (c) at the poles   (d) in space

51. Which of the following is a mixture?
   (a) Silver   (b) Oxygen
   (c) Water   (d) Air

52. Which of the following is always a whole number?
    (a) Atomic weight (b) Molecular weight
    (c) Atomic radius (c) Atomic number

53. A liquid is cooled to convert it into its solid form. In this case, its density _____
    (a) will increase   (b) will decrease
    (c) remains unaffected
    (d) depends on pressure

54. Which of the following planets does not have moon?
    (a) Mars   (b) Saturn
    (c) Earth   (d) Pluto

55. Barometer used to measure height is called :
    (a) Fortin's Barometer
    (b) Altimeter
    (c) Manometer
    (d) Aneroid Barometer

56. Gypsum is added to cement in order to :
    (a) control the rate of setting
    (b) improve the time of setting
    (c) control the properties
    (d) delay the initial setting

57. An ideal fuse wire should have which of the following properties?
    (a) Low melting point and high resistance
    (b) Low conductance and high resistance
    (c) High melting point and low resistance
    (d) Low melting point and low conductance

58. The magnetic field of earth is due to :
    (a) Induction effect of the sun
    (b) Motion and distribution of some kind of material in and outside the earth.
    (c) An imaginary magnet placed at the centre of the earth
    (d) cosmic rays

59. Which of the following metals is the best conductor of electricity and heat?
    (a) Copper   (b) Nickel
    (c) Silver   (d) Aluminium

60. Which of the following carries the genetic information and controls the function of cell
    (a) Lipid   (b) DNA
    (c) Nucleoside   (d) Nucleotide

61. Which of the following is not a digestiv gland that is associated with the alimentar canal?
    (a) Salivary gland (b) Liver
    (c) Pancreas   (d) None of these

62. Cancer cells are characterized by :
    (a) Uncontrolled growth
    (b) Invasion of local tissue
    (c) Spreading to other body parts
    (d) All of the above

63. Food chain consists of :
    (a) Producers and primary consumer
    (b) Producers and herbivores
    (c) Producers, consumers and decomposers
    (d) Producers, carnivores and decomposers

64. When peacock eats snakes which eat insects thriving on green plants, the peacock is :
    (a) A primary consumer
    (b) A primary decomposer
    (c) Final decomposer
    (d) The apex of the food pyramid

65. Galvanized iron is coated with a thin layer of :
    (a) Cu   (b) Zn
    (c) Al   (d) Pb

66. A thermostat, a bimetallic strip, used in refrigerator is used to :
    (a) aid instant cooling
    (b) control the pressure
    (c) prevent influence of outside temperature
    (d) control temperature

67. As crops grow and then harvested, the agricultural land suffers loss of certain elements called 'primary nutrients'. Which of the following is not a primary nutrient?
    (a) Calcium   (b) Nitrogen
    (c) Phosphorus   (d) Potassium

68. Bronze is an alloy of copper and____
    (a) Zinc   (b) Tin
    (c) Iron   (d) Aluminium

69. Gas flaring is a common sight at or near oil drilling sites because
    (a) gas is used to generate energy for drilling
    (b) a layer of gas lies above the oil
    (c) it is used to light up the area
    (d) gas is poisonous

70. Decreasing the focal length of an astronomical telescope will_____
    (a) decrease its magnifying power
    (b) increase its magnifying power
    (c) will have no effect
    (d) None of the above

71. When you travel in certain parts of India, you will notice red soil. What is the main reason for this colour?
    (a) Abundance of magnesium
    (b) Accumulated humus
    (c) Presence of ferric oxides
    (d) Abundance of phosphates

72. Which of the following is true pertaining to the blood level in a person residing at high altitudes?
    (a) Blood level is same as one living in lower altitudes
    (b) Blood quantity is greater
    (c) Blood quantity is lower
    (d) Varies in accordance with person not altitude

73. A particle moves with uniform velocity. Which of the following statements about the motion of the particle is true?
    (a) Its speed is zero
    (b) Its acceleration is zero
    (c) Its acceleration is opposite to the velocity
    (d) Its speed may be variable

74. A Quantity has a value of-4.0m/s. It may be the :
    (a) Speed of a particle.
    (b) Velocity of a particle.
    (c) Acceleration of a particle.
    (d) None of the above.

75. Common salt is obtained from sea water by the process of :

    (a) Sublimation   (b) Evaporation
    (c) Crystallization (d) Filtration

76. Consider the following statement.
    Rutherford's alpha particle scattering experiment proved that nucleus :
    1. contains massive particles.
    2. is a positively charged centre.
    3. is quite stable.
    Which of these statements are correct?
    (a) 1, 2 and 3   (b) 1 and 2
    (c) 2 and 3   (d) 1 and 3

77. Which of these is the best source for vitamin B?
    (a) Cod liver oil   (b) Egg
    (c) Whole wheat bread
    (d) Curd

78. If a sample of flood shown clumping with antiserum-A but not with antiserum-B, then it is group :
    (a) A   (b) B
    (c) AB   (d) O+ve

79. A person who is deaf in one ear will not be able to :
    (a) Listen to whispering sounds.
    (b) Distinguish between two kinds of sounds arriving in opposite direction.
    (c) Determine the source of sound
    (d) None of the above

80. Which of the following mixtures constitute cooking gas?
    (a) Butane and Propane
    (b) Butane and Methane
    (c) Butane and Ethane
    (d) Butane and Ethyl

81. Which metal weighs half of steel but is just as strong as steel?
    (a) Zinc   (b) Platinum
    (c) Tungsten   (d) Aluminium

Attempt all questions :   **Marks: 35**

Note : That all questions in this section do not carry equal marks. The weightage for each question is given alongside.

82. Population density means :   **1 Mark**
    (a) Number of persons living per sq km
    (b) Number of persons living per kilometer
    (c) Number of persons living in a village
    (d) None of these

83. Which of the following indices represent the standard of living of a country?   **1 Mark**
    (a) Infant Mortality rate
    (b) National Income
    (c) Per capita Income
    (d) All of above

84. Match the following   **2 Marks**
    Acts
    1. Contract Labour Act, 1970
    2. Equal Remuneration, 1976
    3. Bonded Labour system, 1976
    4. Regulation of wages, 1948

    Purpose
    A. Regulate employment of contract labour
    B. Equal payment for men and women for same work
    C. Empowers government to fix wages
    D. Release of all bonded labour
    (a) 1-A, 2-B, 3-D, 4-C
    (b) 1-D, 2-C, 3-A, 4-B
    (c) 1-A, 2-D, 3-C, 4-B
    (d) 1-B, 2-D, 3-C, 4-D

85. Which of the following tasks is not performed by Reserve Bank of India? **2 Marks**
    (a) Acts as Banker to Central Government
    (b) Formulates and administers Monetary Policy
    (c) Provides loan disbursements to the corporate sector.
    (d) Maintains 'Liquid' money on behalf of commercial banks.

86. The Rowlatt Act was aimed at___   **1 Mark**
    (a) The suppression of Khilafat movement
    (b) Imprisonment without trial and summary procedures for trial
    (c) Economic support to war efforts
    (d) None of the above

87. The greatest artistic creation of Harappan Culture is/are :   **1 Mark**
    (a) Gold Jewellery
    (b) Seals
    (c) Bronze jewellery
    (d) All of these

88. Who gave the slogans 'Dilli Chalo' and 'Jai Hind'?   **1 Mark**
    (a) Mahatma Gandhi
    (b) Subhash Chandra Bose
    (c) Jawahar Lal Nehru
    (d) Rashbehari Bose

89. Igneous rocks are characterised by :**1 Mark**
    (a) Stratification
    (b) full of fossils and fauna
    (c) without fossils
    (d) None of these

90. Lithosphere is the_____   **1 Mark**
    (a) upper most part of the earth
    (b) middle part of the earth
    (c) top most layer of the earth
    (d) inner part of the earth

91. The tides are primarily caused by : **1 Mark**
    (a) gravitational force of the moon
    (b) gravitational force of the sun
    (c) gravitational force of the earth
    (d) None of the above

92. Which of the following statement about Northern rivers in wrong?   **2 Marks**
    (a) They flow through narrow gorge-like valleys with steep slopes
    (b) They rise in the Tibetan plateau
    (c) They are perennial
    (d) All are fit for navigation

93. Which of the following Union Territories of India is located both on the eastern as well as the western coast?   **1 Mark**

(a) Lakshdweep   (b) Puducherry
(c) Andaman & Nicobar   (d) Daman & Diu

94. Which of the following is Not true in relation to the term 'Feudalism'?   **2 Marks**
    (a) It is a social, economic and political system which was prevalent in Europe during the middle age.
    (b) It says that state is a necessary evil and that it should perform minimum possible functions.
    (c) Under this system the society was divided into hierarchial classes of feudal lords, tenants and serfs.
    (d) The term is often used for a system which suffers from the evils of inequality, exploitation and traditionalism.

Direction for Q.95 to 97:
Read the following passage carefully and answer the questions below:

Historically, the term 'citizen' was linked with the rise of democracy. The demand for democratic government came up first in a few western societies like England, France and the United States of America. Democracy means that everybody should have political rights. A democratic state particularly depends on the quality of its citizens. If citizens do not take interest in politics, a democratic state might also gradually become undemocratic. Conversely, democracy can be strengthened if the citizens have a clear view of their own rights and the rights of others; if they demand what they can claim from government, and if they know what the government can claim from them. Many social evils cannot be fought only by the government passing laws against them. There is a need to create an intense social opinion against them. A society is after all made by humans and not by laws.

One essential condition for a democratic state is that citizens must participate in the governing process.
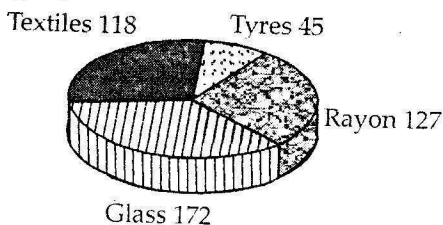
The quality of democracy improves if citizens from all walks of life participate in its activities and if they take interest in the basic processes of making important decisions for their society.

95. Which of the following is not true regarding the term 'democracy'?   **1 Mark**
    (a) Democracy implies a structure of government which is run by people and run for people.
    (b) Democracy advocates the ownership and control of the means of production so that the structure runs smoothly.
    (c) 'Ctizens' is an important constituent of a democratic system.
    (d) Democracy implies equality of rights.

96. Quality of a democratic state may decline if :   **1 Mark**
    (a) Citizens demand what they can claim from the government and vice-versa
    (b) Very few citizens are aware and take part in the governing process
    (c) the decisions affecting the whole society are taken as far as possible by the whole society.
    (d) Laws are enforced in the system.

97. Arrange the following sentences in a sequence as they appear in the passage: **2 Marks**
    A. A democratic set up is run by people because it believes that society is run by people instead of laws.
    B. Active participation of people gives strength to the democratic set up.
    C. Democratic set up first came in West.
    D. The very essence of democracy is to give right to everyone.
    (a) A, B, C, D   (b) D, C, B, A
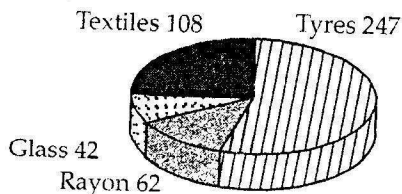   (c) A. B, D, C   (d) B, A, D, C

Directions for questions 98 to 102 refer to the pie-charts below:

The following pie-charts give the Productwise sales (in Rs. crore) of two companies A and B.

Company A

Textiles 118   Tyres 45

Rayon 127

Glass 172

Company B

Textiles 108   Tyres 247

Glass 42

Rayon 62

98. Which of the following statement (s) is (are) false? **2 Marks**
   I.   Rayon is the main product of Company A.
   II. Company B is a dominant player in the tyre industry.
   III. Both companies have a significant market share in the glass market.
   (a) only I   (b) I & III
   (c) II & III   (d) Can't say

99. What is the share of rayon in company A's sales? **1 Mark**
   (a) 20%   (b) 15%
   (c) 28%   (d) Can't say

100. Company B's rayon sales are what percentage of company A's rayon sales? **2 Marks**
   (a) 35%   (b) 40%
   (c) 50%   (d) 67%

101. If the total tyre market is Rs.962 crore, company B's share is : **1 Mark**
   (a) 26%   (b) 18%
   (c) 38%   (d) Can't say

102. Total glass sales of company A and B together are around (in Rs. cr.) **1 Mark**
   (a) 196   (b) 200
   (c) 214   (d) Can't say

103. GDP is defined as the total value of _____produced during a particular year. **1 Mark**
   (a) All final goods and services
   (b) All goods and services
   (c) All intermediate goods and services
   (d) All goods and services whether intermediate or final

104. During Indian freedom struggle, the Indian Statutory Commission was popularly known as_____ **1 Mark**
   (a) Cabinet Commission
   (b) Simon Commission
   (c) Hunter Commission
   (d) None of the above

105. Which of the following correctly defines 'Boycott'? **1 Mark**
   (a) A large public meeting
   (b) Refusal to deal with the job assigned
   (c) Blocking the entrance to a shop or an office
   (d) Mass demonstration

Read the following passage carefully to answer Question no.106 and 107:   **2 X 2 =4 Marks**

In a city A, there were 25 live birds in a year out of which two children died before completing one year. In another city B, there were 250 live birds out of which 10 children died before completing one year.

106. Which of the following interpretations is correct with respect to Infant Mortality Rate?
   (a) City A has worse situation
   (b) City B has worse situation
   (c) Both cities are equally worse
   (d) Insufficient data

107. What is the Infant Mortality Rate of city A and city B?
   (a) 40 and 80   (b) 80 and 40
   (c) 25 and 250   (d) 20 and 100

Answers

1. (b)	2. (d)	3. (c)	4. (b)	5. (b)
6. (b)	7. (b)	8. (c)	9. (b)	10. (a)

11. (c)   12. (a)   13. (c)   14. (b)   15. (b)
16. (a)   17. (b)   18. (c)   19. (c)   20. (c)
21. (c)   22. (b)   23. (c)   24. (c)   25. (c)
26. (b)   27. (b)   28. (d)   29. (c)   30. (d)
31. (d)   32. (a)   33. (b)   34. (c)   35. (b)
36. (a)   37. (d)   38. (a)   39. (b)   40. (b)
41. (c)   42. (a)   43. (d)   44. (b)   45. (d)
46. (c)   47. (b)   48. (a)   49. (d)   50. (c)
51. (d)   52. (c)   53. (a)   54. (d)   55. (b)
56. (d)   57. (a)   58. (b)   59. (c)   60. (b)
61. (d)   62. (d)   63. (c)   64. (d)   65. (b)
66. (d)   67. (a)   68. (b)   69. (b)   70. (b)
71. (c)   72. (c)   73. (b)   74. (b)   75. (b)
76. (a)   77. (c)   78. (a)   79. (b)   80. (a)
81. (d)   82. (a)   83. (c)   84. (a)   85. (c)
86. (b)   87. (b)   88. (b)   89. (c)   90. (a)
91. (a)   92. (d)   93. (c)   94. (b)   95. (b)
96. (b)   97. (c)   98. (d)   99. (c)   100. (c)
101. (a)   102. (c)   103. (a)   104. (b)   105. (b)
106. (a)   107. (b)

Explanatory Answers

21.(c) Let the cost of bicycle be Rs. x
Then remuneration for 12 months = Rs. (3000+ x)

$\Rightarrow$ remuneration for 1 month = $\left(\dfrac{3000+x}{12}\right)$

8 month = $8\left(\dfrac{3000+x}{12}\right)$

But given that he gets Rs (1700 + x) for 8 months

i.e. $8\left(\dfrac{3000+x}{12}\right) = 1700 + x$

$8x + 24000 = 20400 + 12x$
$4x = 3600$
$\Rightarrow x = 900$
Hence the cost of cycle is Rs. 900

22.(b) A and B does a work in 10 days

A's one day work = $\dfrac{1}{10} \times 5 = \dfrac{1}{2}$

B's one day work = $\dfrac{1}{15} \times 5 = \dfrac{1}{3}$

Rest of work = $(1 - \dfrac{1}{2} + \dfrac{1}{3})$

$= (1 - \dfrac{3+2}{6}) = \dfrac{1}{6}$

A's share = $\dfrac{1}{2} \times 150 = 75$

B's share = $\dfrac{1}{3} \times 150 = 50$

C's share = $\dfrac{1}{6} \times 150 = 25$

= 75 : 50 : 25

23.(c) Area = πr^2
when radius is increased by 100%
r becomes 2 r
New area = $\pi (2r)^2 = \pi 4r^2$
Hence Increase in area

$= \dfrac{4\pi r^2 - \pi r^2}{\pi r^2} \times 100 = 300\%$

24.(c) fifth term = 5 sixth term = 5a

fourth term = $\dfrac{5}{a}$ seventh term = $5a^2$

Third term = $\dfrac{5}{a^2}$

Required product = $\dfrac{5}{a^2} \cdot \dfrac{5}{a} 5a - 5a^2$

$= 625$

25.(c) Area of shaded sector = area of triangle – area of equilateral section

$= \dfrac{\sqrt{3}}{4} \times 4^2 - 3\left(\dfrac{\pi \times 2^2}{6}\right)$

$= 4\sqrt{3} - 2\pi$

26. (b) Current saving = 0.15 x

New saving = 25% of 1.2 x
$$= 0.25 \times 1.2\, x = 0.3\, x$$
$$0.3\, x - 0.15\, x = 30$$
$$0.15\, x = 30$$
$$x = \frac{30 \times 100}{15} = 200$$

Current salary = 1.2 x = 1.2 × 200 = 240

27.(b) Numbers divisible by 3 = 3, 6, 9, 12, 15, 18
Number divisible by 5 = 5, 10, 15, 20

$$\therefore\ P\ (\text{no. divisible by 3}) = \frac{6}{24}$$

$$P\ (\text{No. divisible by 5}) = \frac{4}{24}$$

$\therefore$ probability or drawing a card divisible

by 3 or 5 $= \frac{6}{24} + \frac{4}{24} = \frac{10}{24}$

Hence required probability is $\frac{9}{24}$

28.(d) When the two mixture are added in equal volume,

Amount of acid	= 3 × 7 + 4 × 5	
	= 21 + 20 = 41	
Amount of water	= 2 × 7 + 3 × 5	
	= 14 + 15 = 29	
∴ The new ratio	= 41 : 29	

29.(c) New Salary $= 1.25 \times 0.75\, x = \frac{15}{16}\, x$

% decrease in salary $= \dfrac{x - \dfrac{15}{16}x}{x} \times 100$

$$= \frac{100 x}{16} \cong 6\%$$

30 (d). Length of edge = 1 cm (as its volume is 1cm³)
$\therefore$ Length of 12 edges = 12 cm

31.(d) $\pi r^2 = s^2 = \dfrac{\sqrt{3}}{4}\, a^2$

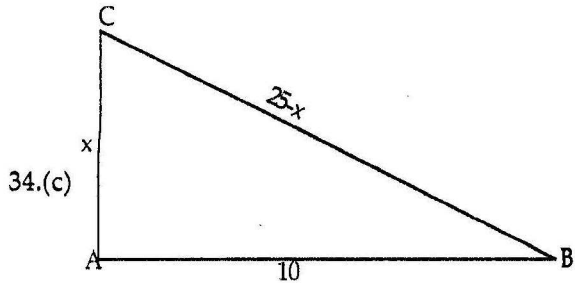3.14 $r^2 = s^2 = 0.433 a^2$ [Note that a^2 is being multiplied by a no. less than 1]
$\therefore s^2 > r^2$ and $a^2 > s^2$ and $a^2 > r^2$

$\therefore a > s > r$ or $r < s < a$

32.(a) Largest 4 digit square = 99² = 9801

33. (b) $x^2 < 4x$
$\therefore$ Maximum value x may take is 3

34.(c)

$$(10)^2 + x^2 = (25 - x)^2$$
$$100 = (25 - x)^2 - (x)^2 = (25 - x + x)(25 - x - x)$$
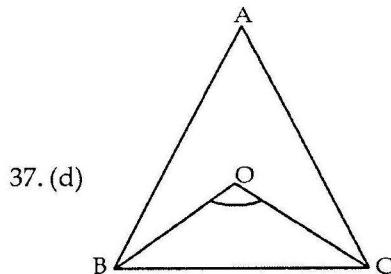$$100 = 25(25 - 2x)$$
$$\Rightarrow x = 10.5$$

35.(b) The statement given in III & IV are not true.

36.(a) Let the angles be (3x), (5x), (7x)
$$3x + 5x + 7x = 180$$
$$\Rightarrow x = 12°$$
$\therefore$ These angles are 36°, 60°, 84°
$\Rightarrow$ the triangle is acute angled.

37. (d)

$\angle A + \angle B + \angle C = 180°$
$\Rightarrow 130° + \angle B + \angle C = 180°$
$\Rightarrow \angle B + \angle C = 50°$
$\Rightarrow \frac{1}{2}\angle B + \frac{1}{2}\angle C = 25°$

Now , in $\triangle$ OBC

$\frac{1}{2}\angle B + \frac{1}{2}\angle C + \angle BOC = 180°$
$\Rightarrow 25° + \angle BOC = 180° \Rightarrow \angle BOC = 155°$

38.(a) Ans. SSA is not a criterian for congruence

of triangles.

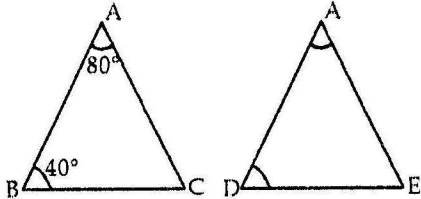39. (b) Given $\triangle ABC \cong \triangle FDE$
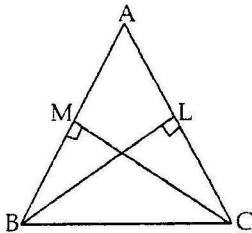
AB = FD = 5cm, $\angle B = 40°$ and $\angle A = 80°$

$\therefore \angle c = 180° - (80° + 40°) = 60$

So, must have $\angle E = \angle C = 60$

Hence $\angle E = 60$

40. (b)

$\triangle ABC$ is given in which

$\angle B \perp AC$ and $CM \perp AB$

such that $\angle B = CM$

Then , consider

$\triangle BLA \ \& \ \triangle ACM$

$\angle B = CM$ (given)

$\angle BAL = \angle CAM$ (common)
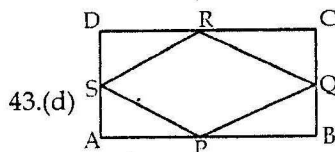
$\angle A = \angle B = \angle AMC$ (each 90°)

$\therefore \triangle ABL \cong \triangle ACM$ and Hence $AB = AC$

$\Rightarrow \triangle ABC$ is isosceles.

41.(c) Clearly, (c) is not true

42. (a) The median of a triangle divides it into two triangles of equal area

43.(d)

Clearly, PQRS is a rhomubus whose

Area is $= \frac{1}{2} \times PR \times SQ$

$= \frac{1}{2} \times 6 \times 8 = 24 cm^2$

44.(b) Clearly, (b) is false, because area of the parallelogram = base × corresponding height.

45.(d) There are 999 combination of 3 digit number from 001 to 999. Additionally, 000 is another combination. Therefore the probability is $\frac{1}{1000}$

46.(c) $\dfrac{\log_2{}^{25}}{\log_2{}^5} = \dfrac{\log{}^{5^2}}{\log_2} = \dfrac{2\log_2{}^{5^2}}{\log_2{}^5} = 2$

98. I. Value - wise glass is the main product.

II. We do not have information on market - shares.

III. same as II

Since we do not know about statement II & III due to insufficient data, we can't say whether these statements are true or false. Therefore the answer is (d).

99. (c) $\dfrac{127}{462} = 28\%$

100.(c) $\dfrac{62}{127} \approx 50\%$

101.(a) $\dfrac{247}{962} \approx 26\%$

102. (c) 172 + 42= 214