TEST PAPER - 3

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

"हमारी हिन्दी सजीव भाषा है, इसी कारण इसने अरबी, फारसी हिन्दी के सम्पर्क में आकर इनके शब्द ग्रहण किए ही हैं, अब अंग्रेजी के भी शब्द ग्रहण करती जा रही है। इसे दोष नहीं गुण ही समझना चाहिए, क्योंकि अपनी इस ग्रहण शक्ति से हिन्दी अपनी वृद्धि कर रही है। क्या भाषा की विशुद्धता का किसी भी पक्षपाती में यह शक्ति है कि वह विभिन्न जातियों के पारस्परिक सम्बंध को न होने दे अथवा भाषाओं की सम्मिश्रण क्रिया में रुकावट उत्पन्न कर दे? यह कभी संभव नहीं। हमें तो केवल इस बात का ध्यान रखना चाहिए कि इस सम्मिश्रण के कारण हमारी भाषा अपने स्वरूप को तो नष्ट नहीं कर रही-कहीं अन्य भाषाओं के बेमेल शब्दों के मिश्रण से अपना रूप तो विकृत नहीं कर रही।"

1. अवतरण का उपयुक्त शीर्षक होगा-
   (a) हिन्दी भाषा के गुण-दोष
   (b) हिन्दी भाषा
   (c) हिन्दी भाषा का ग्रहणशील स्वरूप
   (d) हिन्दी की सम्मिश्रण क्रिया
2. सजीव भाषा से तात्पर्य है-
   (a) विभिन्न भाषाओं के सम्मिश्रण से उद्भूत सम्मिश्रित भाषा
   (b) ग्रहण शक्ति से अपने शब्द भंडार को बढ़ाने वाली भाषा
   (c) विभिन्न भाषाओं के नए-नए शब्दों को ग्रहण करके बनी नई भाषा
   (d) किसी भाषा का अपने विशुद्ध स्वरूप में होना
3. हिन्दी में नए शब्दों को अपनाते समय किस बात को ध्यान में रखना चाहिए?
   (a) नए शब्द केवल अरबी, फारसी और अंग्रेजी भाषा से ही लिए जाएं
   (b) हिन्दी में बेमेल शब्द बिलकुल न आ पाएं
   (c) हिन्दी का असली स्वरूप अक्षुण्ण रहे
   (d) हिन्दी पढ़ने में हिन्दी ही लगे
4. हिन्दी में नए शब्दों का आगमन उचित है, क्योंकि-
   (a) इससे हिन्दी की केवल हानि ही नहीं लाभ भी है
   (b) भाषाओं की सम्मिश्रण क्रिया साहित्योन्नति के लिए आवश्यक है
   (c) भाषा की विशुद्धता का पक्षपाती भी इसे रोकने में सक्षम नहीं है
   (d) इससे हिन्दी की समृद्धि होती है

II. खाली स्थानों के लिए उपयुक्त शब्द चुनें:

हम ___5___ कई प्रकार से कर सकते हैं। हम धन के बल पर दूसरों का हित कर सकते हैं। भूखे को रोटी खिला सकते हैं। नंगे को तन ढकने के लिए वस्त्र दे सकते हैं। ___6___ के

लिए शिक्षा का प्रबंध कर सकते हैं। जलापूर्ति के लिए कुएँ खुदवा सकते हैं। धर्मशालाएँ बनवा सकते हैं। गरीबों के उपचार के लिए औषधालय खुलवा सकते हैं। 2×2= 4

5. (a) अदृश्य (b) परोपकार
   (c) कौशल (d) अनोखा
6. (a) जिज्ञासा (b) अनपढ़ों
   (c) बेहतरीन (d) नायक

7. दिए गए वाक्य के लिए कौन-सा मुहावरा सबसे उपयुक्त होगा? - रमेश बातें तो ऐसी करता है जैसे वह हर विषय में पारंगत हो, किंतु वास्तव में उसे किसी भी विषय का पूरा ज्ञान नहीं है। 2 marks
   (a) ऊँची दुकान फीका पकवान
   (b) नाच न जाने आंगन टेढ़ा
   (c) मन चंगा तो कटौती में गंगा
   (d) अधजल गगरी छलकत जाए

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. गीता और बबीता की सफलता में उनके पिता पहलवान महावीर सिंह फोगाट, जो इनके बीच हैं, का भी बड़ा हाथ हैं।
   B. महावीर सिंह और उनकी बेटियों का यह संघर्ष और फिर सफलता की कहानी जल्द ही बड़े पर्दे पर आने वाली है।
   C. महावीर सिंह और उनकी बेटियों के जीवन पर आधारित फिल्म 'दंगल' होगी, जिसमें उनकी बेटियों की उपलब्धियों और इस मुकाम तक पहुंचाने के लिए उन्हें जिन मुश्किलों का सामना करना पड़ा, उसे दर्शाया जाएगा।
   D. उन्होंने अपने समाज में लड़कियों के लिए तय मापदंडों को बदलते हुए अपनी बेटियों को खुद पहलवानी सिखाने की पहल की।
   (a) DBCA (b) ADBC
   (c) BACD (d) CDAB

Directions (9 – 13) : Read the passage carefully and choose the best answer to each questions out of the four alternatives. 2×6 = 12

The Prime Minister recommends the names of the persons for appointment as the members of the Council of Ministers by the President. He can recommend the name of any person for appointment as Minister. Of course, he has to see the interests of his Ministry so that it works in a homogeneous manner. Any Minister who does not see eye to eye with the Prime Minister has to quit the Council of Ministers.

The Prime Minister also advises the President on the allocation of portfolios to the members of his council of Ministers. The can give any department to any Minister and thus keep a control over them.

The Prime Minister can make any changes in the formation of his Ministry. He can shuffle his Ministry like a pack of cards as he likes. He can change the protfolios of his colleagues or reallocate the portfolios according to their performance. The Prime Minister presides over the meetings of the Cabinet. The President does not participate in these meetings. In the Cabinet all the important decisions are taken which are binding on all the ministers.

9. 'Homogeneous', in the passage means
   (a) consisting of the same substance
   (b) fragmented (c) united
   (d) working independently

10. The final control is in the hands of the
   (a) Individual Minister
   (b) Council of Ministers
   (c) President (d) Prime Minister

11. 'Colleagues', in the passage refers to
   (a) Ministers
   (b) All the people working in the Prime Minister's office
   (c) The Prime Minister's friends
   (d) Co-workers

12. 'recommends', in the passage means
   (a) put forward (b) fragmented
   (c) united
   (d) working independently portfolios

13. Who recommends the names of the persons for appointment as Ministers ?
   (a) Prime Minister (b) Speaker
   (c) President
   (d) Cabinet Secretary

14. What happens if the Prime Minister and the

Minister have a disagreement?
(a) The President dismisses the Government
(b) The Cabinet resigns
(c) The Prime Minister resigns
(d) The Minister quits

Directions: (15 to 18): Fill in the blanks with the appropriate words: **1×3= 3**

The growing access of the web in the late 20th century, has allowed women to empower ___15___ by using various tools on the Internet. With the _____16_____ of the World Wide Web, women have begun to use social networking sites like Facebook and Twitter to start online activism.Through online activism, women are ___17_____ to empower themselves by organizing campaigns and voicing their opinions for equality rights without feeling oppressed by members of society.

15. (a) their (b) themselves
(c) those (d) these

16. (a) deliberately (b) introduction
(c) sulky (d) hollow

17. (a) able (b) enable
(c) unable (d) disable

18. Arrange the following sentences in the order in which they should appear in a passage: **2 marks**

I. Food was in plenty for them. They ate everything and spoiled all the bags.
II. Plenty of mice lived in that grocery shop.
III. There was a grocery shop in a town.
IV. The grocer got really worried. So, he thought "I should buy a cat and let it stay at the grocery. Only then I can save my things."
V. They also wasted the bread, biscuits and fruits of the shop.

(a) V, II, I, III, IV (b) III, II, I, V, IV
(c) II, IV, I, V, III (d) II, III, I, V, IV

Directions.(19 -20) In the following questions, out of the four alternatives choose the one which can be substituted for the sentence. **2 marks**

19. To give one's authority to another
(a) Assign (b) Delegate
(c) Represent (d) Designate

20. One who intervenes between two or more parties to settle differences
(a) Neutral (b) Intermediary
(c) Judge (d) Connoisseur

SECTION – A (ii)
Mathematical Thinking and Reasoning

Attempt all questions : Marks: 35

21. A printer numbers the pages of a book starting with 1 and uses 3189 digits in all. How many pages does the book have? **1 mark**
(a) 1074 (b) 1075 (c) 1000
(d) None of these

22. If 3660 soldiers were asked to stand in rows to form a perfect square, it was found that 60 soldiers were left out. What was the number of soldiers in each row? **1 mark**
(a) 60 (b) 40 (c) 80 (d) 64

23. If $\sqrt{6} \times \sqrt{15} = x\sqrt{10}$, then the value of x is_____ **1 mark**
(a) 3 (b) ± 3
(c) $\sqrt{3}$ (d) $\sqrt{6}$

24. A sweet-seller has 420 kaju barfies and 130 badam barfies. She wants to stack them in such a way that each stack has the same number of barfies and they take up the least area of the tray. What is the number of barfies that can be placed in each stack for this purpose? **1 mark**
(a) 3 (b) 10 (c) 14 (d) 30

25. In what ratio the two kinds of tea must be mixed together one at Rs. 48 per kg and another at Rs. 32 per kg. So that the mixture may cost Rs. 36 per kg? **1 mark**
(a) 3:1 (b) 2:1 (c) 1:2 (d) 5:1

26. The price of rice goes down by 10%. By how much per cent must a housewife increase her consumption of rice so that the expenditure on rice remains the same? **1 mark**

(a) $10\frac{1}{9}\%$ (b) $13\frac{1}{9}\%\ \%$

(c) $11\frac{1}{9}\%\ \%$ (d) 15%

27. A sells a computer to B at a profit of 40% and B sells it to C at a loss of 20% find the resultant profit or loss. **1 mark**
(a) 16% (b) 10% (c) 12% (d) 15%

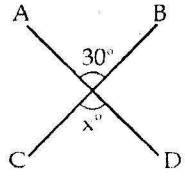
28. A kite is flying, attached to a thread which is 165m long. The thread makes an angles of 30° with the ground, the height of the kite from the ground, assuming that there is no slack in the thread is- **2 marks**
(a) 80 meter (b) 82.5 meter
(c) 50 meter (d) 33 meter

29. The angle of elevation of a ladder leaning against a wall is 60° and the foot of the ladder is 9.5 metres away from the wall. The length of the ladder is- **2 marks**
(a) 19 meter (b) 15 meter
(c) 35 meter (d) 33 meter

30. Which among the following is the measure of an angle which is five times its supplement? **1 mark**
(a) 100° (b) 110°
(c) 55° (d) 150°

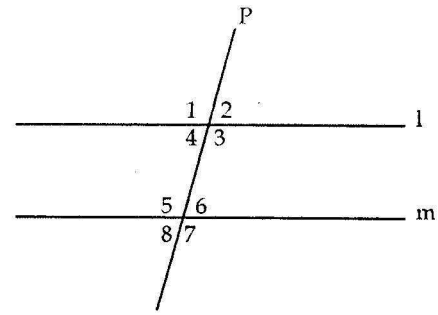
31. At least how many non-collinear points does a plane contain? **1 mark**
(a) 3 (b) 2
(c) 1 (d) None of these

32. In the given figure, what is the value of x?



1 mark
(a) 90° (b) 50°
(c) 150° *(d) 30°

33.



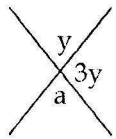
1 mark

In the above figure l and m are parallel lines and the line P intersects them. Then which of the following is not true?
(a) If $\angle 2=60°$, then $\angle 5=120°$
(b) If $\angle 2=60°$, then $\angle 8=60°$
(c) If $\angle 2=80°$, then $\angle 6=80°$
(d) If $\angle 2=75°$, then $\angle 7=75°$

34. If the bisector of an angle of a triangle bisects the opposite side, then the Triangle is **1 mark**
(a) a right-angled triangle
(b) an isosceles triangle
(c) scalene triangle
(d) equilateral triangle

35. If the three angles of one triangle are equal to the three angles of the other triangle, then the triangles are always- **1 mark**
(a) isosceles (b) equiangular
(c) congruent (d) equilateral

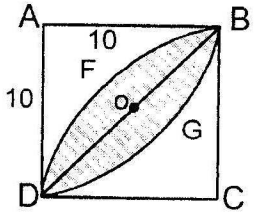
36. In figure, measure of $\angle a$ is... **1 mark**



(a) 30° (b) 45°
(c) 15° (d) 50°

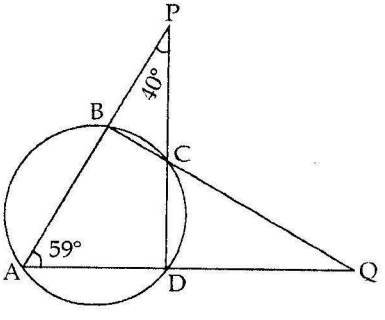
37. In the figure, ABCD is a square with side 10. BFD is an arc of a circle with centre C. BGD is

an arc of a circle with centre A. What is the area of the shaded region? **2 marks**



(a) $100 - 25\pi$ (b) $50\pi - 100$
(c) $25\pi - 100$ (d) $100 - 50\pi$

38.

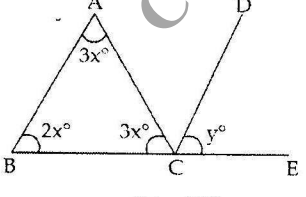


1 mark

In the figure given above, if $\angle PAQ = 59°$, $\angle APD = 40°$, then what is $\angle AQB$?

(a) 19° (b) 20°
(c) 22° (d) 27°

39. In figure CD || AB, find y. **1 mark**



(a) 49° (b) 42°
(c) 44° (d) 45°

40. The sum of three numbers in A.P. is -3 and their product is 8. Find the number in the middle? **1 mark**

(a) -1 (b) +1
(c) 0 (d) None of these

41. What is value of: **2 marks**

$$\log \frac{3}{5} + \log \frac{5}{36} + \log 12$$

(a) log 3 (b) 0
(c) log 7 (d) log 6

42. A boat goes 20 km downstream in one hour and the same distance upstream in two hours. The speed of the boat in still water is **2 marks**

(a) 15 km/hr (b) 10 km/hr
(c) 5 km/hr (d) 7.5 km/hr

43. If the radius of a sphere is increased by 2 cm, its surface area increases by 352 cm^2. The radius of the sphere before increase was

$\left[\text{Take } \pi = \frac{22}{7}\right]$ **2 marks**

(a) 3 cm (b) 4 cm
(c) 5 cm (d) 6 cm

44. A lent ₹ 5000 to B for 2 years and ₹ 3000 to C for 4 years on simple interest at the same rate of interest and received ₹ 2200 in all from both as interest. The rate of interest per annum is **1 mark**

(a) 7% (b) 5%
(c) $7\frac{1}{8}\%$ (d) 10%

45. Tea at ₹ 126 per kg and at ₹ 135 per kg are mixed with a third variety in the ratio 1 : 1 : 2. If the mixture is worth ₹ 153 per kg, the price of the third variety per kg is **2 marks**

(a) ₹ 169.50 (b) ₹ 175.50
(c) ₹ 175 (d) ₹ 185

46. Of the three numbers, the first is 3 times the second and the third is 5 times the first. If the average of the three numbers is 57, the difference between the largest and the smallest number is **1 mark**

(a) 9 (b) 18
(c) 126 (d) 135

SECTION - B (I)
Subject Knowledge - Science

Attempt all questions : **Marks: 35**

47. One horse power is equal to _____
(a) 746 W (b) 738 W
(c) 726 W (d) 764 W

48. The mirror used in vehicles as rear view mirror is _____
(a) convex mirror (b) concave mirror
(c) plane mirror
(d) plano concave mirror

49. The blood pressure is the pressure of blood in
(a) arteries (b) veins
(c) auricles (d) ventricles

50. The attraction between similar molecules is called _____
(a) inertia (b) adhesion
(c) cohesion (d) friction

51. The steam engine was invented by _____
(a) Newcommen (b) James Watt
(c) David Bushnell (d) Rudolph Diesel

52. Hottest part of the blast furnace is
(a) outlet of gases (b) hearth
(c) tuyers
(d) entrance for charge

53. Meson particles were predicted by
(a) Bohr (b) Mosley
(c) H. Yukawa (d) Perrin

54. Hormones are normally absent in
(a) rat (b) monkey
(c) bacteria (d) cat

55. Bamboo is a
(a) grass (b) herbs
(c) shrub (d) tree

56. Nitrogen fixation is done by
(a) red algae (b) green algae
(c) brown algae (d) blue-green algae

57. Decomposition of hydrogen peroxide is prevented by
(a) NaOH (b) MnO_2
(c) glycerol (d) oxalic acid

58. DPT is a vaccine for
(a) diarrhoea, polio and typhoid
(b) diphtheria, whooping cough and tetanus
(c) diarrhoea, polio and tetanus
(d) diphtheria, whooping cough and typhoid

59. The pieces fall from the sky on the Earth, these pieces are
(a) meteorites (b) satellites
(c) meteors (d) None of these

60. The only snake that builds its nest is
(a) Krait (b) King cobra
(c) Chain viper
(d) Saw scaled viper

61. Belladonna plant is the source of alkaloid
(a) auxin (b) atropine
(c) cocaine (d) nicotine

62. Which of the following cannot be controlled by vaccination?
(a) Smallpox (b) Diabetes
(c) Polio
(d) Whooping cough

63. The 'cell theory' for organisms was proposed by
(a) Purkinje and Von Mohi
(b) Schleiden and Schwann
(c) Carolus Linnaeus (d) Felix Dujardin

64. The Sun produces radiant energy through the process of
(a) nuclear fusion (b) nuclear fission
(c) chemical explosion
(d) photoelectric effect

65. When milk is churned, the cream is separated from it due to
(a) gravitational force
(b) centrifugal force (c) cohesive force
(d) adhesive force

66. Leukaemia or blood cancer is characterized by abnormal increase of the
(a) red blood cells
(b) white blood cells
(c) blood platelets (d) blood plasma

67. The largest flower in the world is that of
(a) Lotus (b) Rafflesia

(c) Giant cactus (d) None of these

68. Which of the following molecules has one lone pair of electrons on the central atom?
(a) PCl_5 (b) NH_3
(c) CH_4 (d) H_2O

69. Vitamin B-complex represents a group of how many vitamins?
(a) 5 (b) 6
(c) 9 (d) 11

70. Ordinary glass is
(a) sodium silicate (b) calcium silicate
(c) sodium and calcium silicate
(d) copper silicate

71. The process of conversion of solid into liquid is called
(a) freezing (b) melting
(c) boiling (d) sublimation

72. Producer gas is mixture of
(a) $CO + H_2$ (b) $CO + O_2$
(c) $CO + N_2$ (d) $CO_2 + O_2$

73. Cooking oil is converted into vegetable ghee by the process of _____
(a) crystallisation (b) condensation
(c) hydrogenation (d) oxidation

74. Which of the following has the largest radius?
(a) Mg (b) K
(c) Ca (d) Na

75. The first synthetic fibre made by man was
(a) rayon (b) nylon
(c) polyster (d) terycott

76. ELISA test is prescribed for
(a) cancer (b) typhoid
(c) polio (d) AIDS

77. Which of the following is biodegradable?
(a) Paper (b) DDT
(c) Polythene (d) Plastic

78. The longest bone in the human body is
(a) ulna (b) humerus
(c) femur (d) tibia

79. Iodoform is used as an
(a) antipyretic (b) analgesic
(c) antiseptic (d) anaesthetic

80. Which of the following is known as suicide bag?
(a) Lysosome (b) Ribosome
(c) Mitochondria (d) Protoplasm

81. The richest source of vitamin D is
(a) cod liver oil (b) spinach
(c) milk (d) cheese

SECTION - B (II)
Subject knowledge - Social Science

Attempt all questions : **Marks: 35**

82. Bank rate is the rate at which
(a) a bank lends to the public
(b) the Reserve Bank of India lends to the public
(c) the Government of India lends to other countries
(d) the Reserve Bank of India gives credit to Commercial Banks

83. Which one of the following regions of the world is called 'the bread basket of the world'?
(a) Temperate grassland
(b) Tropical monsoonal region
(c) Mediterranean region
(d) Savana grassland

84. Which of the following is the correct sequence of the regions of the Sun as one moves from its core to the surface?
(a) Photosphere (b) Chromosphere
(c) Convection zone (d) Corona

85. Which one of the following lakes in India has the highest water salinity?
(a) Dal (b) Chilka
(c) Wular (d) Sambhar

86. Pepper Research Institute is located at
(a) Thiruvananthapuram
(b) Kollam (Kerala)
(c) Kozhikode (Kerala)
(d) Panniyur (Kerala)

87. Who among the following is known as the

Father of the Indian Constitution?
(a) B.R. Ambedkar
(b) Mahatma Gandhi
(c) Jawaharlal Nehru
(d) Vallabhbhai Patel

88. Economic survey is published by
(a) Ministry of Finance
(b) Planning Commission
(c) Government of India
(d) Indian Statistical Institute

89. The Lakshadweep Islands are situated in
(a) Indian Ocean (b) Arabian Sea
(c) Bay of Bengal
(d) None of the these

90. Who is the leader of the Lok Sabha?
(a) The President
(b) The Prime Minister
(c) The Speaker
(d) None of the above

Directions: (91 to 93): Fill in the blanks with the appropriate words:

Tiger is one of the key wildlife species in the faunal web. In 1973, the authorities realized that the tiger population had dwindled to 1,827 from an estimated 55,000 at the turn of the century. The major threats to tiger population are numerous, such as poaching for trade, shrinking habitat, depletion of prey base species, growing human population, etc. The trade of tiger skins and the use of their bones in traditional medicines, especially in the Asian countries left the tiger population on the verge of extinction. Since India and Nepal provide habitat to about two-thirds of the surviving tiger population in the world, these two nations became prime targets for poaching and illegal trading.

"Project Tiger", one of the well-publicised wildlife campaigns in the world, was launched in 1973. Initially, it showed success as the tiger population went up to 4,002 in 1985 and 4,334 in 1989. But in 1993, the population of the tiger had dropped to 3,600. There are 27 tiger reserves in India covering an area of 37,761 sq km Tiger conservation has been viewed not only as an effort to save an endangered species, but with equal importance as a means of preserving biotypes of sizeable magnitude. Corbett National Park in Uttranchal Sunderbans National Park in West Bengal Bandhavgarh National Park in Madhya Pradesh Sariska Wildlife Sanctuary in Rajasthan, Manas Tiger Reserve in Assam and Periyar Tiger Reserve in Kerala are some of the tiger reserves of India.

91. Match the following:

Tiger Reserves	State
1. Corbett National Park	A. West Bengal
2. Sunderbans National Park	B. Assam
3. Sariska Wild Life Sanctuary	C. Rajasthan
4. Manas Tiger Reserve	D. Madhya Pradesh
	E. Uttranchal

(a) 1-A, 2-B, 3-C, 4-D
(b) 1-E, 2-A, 3-C, 4-B
(c) 1-E, 2-D, 3-C, 4-B
(d) 1-C, 2-B, 3-A, 4-E

92. Which of the following statement is not true?
(a) Project Tiger was launched before 1975
(b) Tiger bones is used for traditional medicine
(c) India and Nepal provide habitat to three-fourth of surviving Tiger
(d) In 1989, Tiger population went upto 4334

93. The word 'dwindled' used in the passage means:
(a) fall prey to disease
(b) gradually increase
(c) fairness
(d) gradually decrease

Directions: (94-95) Study the Lok Sabha stat and answer the questions below:

Lok Sabha	Election Year	Voter Turnout (%)
1st	1951-52	44.87
4th	1967	61.04
5th	1971	55.27
6th	1977	60.49
8th	1984	63.56
10th	1991	56.73
14th	2004	58.07

94. In how many Lok Sabha elections, voter

turnouts (%) was less than 60% but more than 50%?

(a) 3 (b) 2
(c) 4 (d) 1

95 Consider the following statements:

1. During 1967 voter turnout (%) was less than 1991
2. Voter turnout (%) was least during 1971
3. 8th Lok Sabha election was held after a gap of 6 years

(a) Only 3 (b) Only 2
(c) Both 1 and 2 (d) Only 1

Directions: (96-100) Read the passage below describing the working condition of two employees.

Kanta works in an office. She attends her office from 9.30 a.m. to 5.30 p.m. She gets her salary regularly at the end of every month. In addition to the salary, she also gets provident fund as per the rules laid down by the government. She also gets medical and other allowances. Kanta does not go to office on Sundays. This is a paid holiday. When she joined work, she was given an appointment letter stating all the terms and conditions of work.

Kanta works in the organised sector. Organised sector covers those enterprises or places of work where the terms of employment are regular and therefore, people have assured work. They are registered by the government and have to follow its rules and regulations which are given in various laws such as the Factories Act, Minimum Wages Act, Payment of Gratuity Act, Shops and Establishments Act etc. It is called organised because it has some formal processes and procedures. Some of these people may not be employed by anyone but may work on their own but they too have to register themselves with the government and follow the rules and regulations.

Workers in the organised sector enjoy security of employment. They are expected to work only a fixed number of hours. If they work more, they have to be paid overtime by the employer. They also get several other benefits from the employers. What are these benefits? They get paid leave, payment during holidays, provident fund, gratuity etc. They are supposed to get medical benefits and, under the laws, the factory manager has to ensure facilities like drinking water and a safe working environment. Low-paid and often not regular. There is no provision for overtime, paid leave, holidays, leave due to sickness etc. Employment is not secure. People can be asked to leave without any reason. When there is less work, such as during some seasons, some people may be asked to leave. A lot also depends on the whims of the employer. This sector includes a large number of people who are employed on their own doing small jobs such as selling on the street or doing repair work. Similarly, farmers work on their own and hire labourers as and when they require When they retire, these workers get pensions as well.

Kamal is Kanta's neighbour. He is a daily wage labourer in a nearby grocery shop. He goes to the shop at 7:30 in the morning and works till 8:00 p.m. in the evening. He gets no other allowances apart from his wages. He is not paid for the days he does not work. He has therefore no leave or paid holidays. Nor was he given any formal letter saying that he has been employed in the shop. He can be asked to leave anytime by his employer.

In contrast, Kamal works in the unorganised sector. The unorganised sector is characterised by small and scattered units which are largely outside the control of the government. There are rules and regulations but these are not followed.

(Courtesy: NCERT)

96. Which of the following are unorgansied sector activities?

1. A doctor in a nurisng home treating a patient
2. A daily wage labourer working under a contractor
3. A factory worker going to work in a big factory
4. A person working in an office

(a) 2 and 3 (b) 4 only
(c) 2 only (d) 1 only

97. In which of the following sectors does a

worker enjoy job security?
(a) Organised sector
(b) Unorganised sector
(c) Both (a) and (b)
(d) Neither (a) nor (b)

98. On which of the following issue(s) do workers in the unorganised sector need protection?
(a) wages (b) Health
(c) Safety (d) All of these

99. Kanta gets paid holiday because:
(a) she works well
(b) She does more work than Kamal
(c) She works in organised sector
(d) She is a female worker

100. The place, where Ramajuja used to teach, was
(a) Madurai (b) Mamallapuram
(c) Somnathpur (d) Shrirangam

Answers

1. (c)	2. (b)	3. (c)	4. (d)	5. (b)
6. (b)	7. (d)	8. (b)	9. (c)	10. (c)
11. (a)	12. (a)	13. (a)	14. (d)	15. (b)
16. (b)	17. (a)	18. (b)	19. (b)	20. (b)
21. (a)	22. (a)	23. (b)	24. (b)	25. (a)
26. (c)	27. (c)	28. (b)	29. (a)	30. (d)
31. (a)	32. (d)	33. (c)	34. (b)	35. (b)
36. (b)	37. (b)	38. (c)	39. (d)	40. (a)
41. (b)	42. (a)	43. (d)	44. (d)	45. (c)
46. (c)	47. (a)	48. (a)	49. (a)	50. (b)
51. (b)	52. (b)	53. (c)	54. (c)	55. (a)
56. (d)	57. (a)	58. (d)	59. (a)	60. (b)
61. (b)	62. (b)	63. (b)	64. (a)	65. (b)
66. (b)	67. (b)	68. (b)	69. (d)	70. (c)
71. (b)	72. (c)	73. (c)	74. (b)	75. (b)
76. (d)	77. (a)	78. (c)	79. (c)	80. (a)
81. (a)	82. (d)	83. (a)	84. (a)	85. (d)
86. (d)	87. (a)	88. (a)	89. (b)	90. (b)
91. (b)	92. (c)	93. (d)	94. (a)	95. (b)
96. (c)	97. (a)	98. (c)	99. (c)	100. (d)

Explanatory Answers

21. (a) 1 digit numbers have 9 digits (9 numbers)
2 digit numbers have 180 digits (90 numbers)
3 digit numbers have 2700 digits (900 numbers)
4 digit numbers have 300 digits (75 numbers)
Since, total number of digits is 3189.
Hence, number of digits for 4 digit numbers = (9 + 180 + 2700 + 300)
∴ Total number of pages = 9 + 90 + 900 + 75 = 1074.

22. (a) As per question,
$x^2 + 60 = 3660$
$x = 60$.

23. (b) $\sqrt{90} = x\sqrt{10}$
Squaring both sides, we get
$90 = x^2 (10)$
$\Rightarrow x^2 = 9 \quad \Rightarrow x = \pm 3$.

24. (b) Inorder to find no. of barfies that can be placed in each stack, you will have to work out H.C.F. of 420 and 130.

$$130\overline{)420}\ 3$$
$$\underline{390}$$
$$30\overline{)130}\ 4$$
$$\underline{120}$$
$$10\overline{)30}\ 3$$
$$\underline{30}$$
$$0$$

Hence, H.C.F. of 420 and 130 is 10. So, the number of barfies that can be placed in each stack is 10.

25. (a) Ratio of inferior quality to superior quality

$$= \frac{\text{Rate of superior} - \text{Rate of mix}}{\text{Rate of mix} - \text{Rate of inferior}}$$

$$= \frac{48-36}{36-32} = \frac{12}{4} = 3:1$$

26. (c) $\left(\frac{R}{100-R}\times 100\right)\%$ [R = 10%]

$$= \left(\frac{10}{100-10}\times 100\right)\%$$

$$= \left(\frac{10}{90}\times 100\right)\% = 11\frac{1}{9}\%.$$

27. (c) The resultant profit or loss,

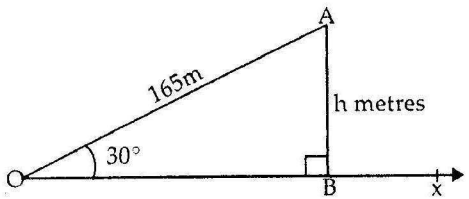
$$= 40 - 20 - \frac{40\times 20}{100}$$

$$= 20 - \frac{800}{100}$$

$$= 12\%$$

Profit = 12%

28. (b) Let OX be the horizontal ground.
Let A be the positions of the kite and O be the position of the observer and OA be the thread.
Construction: Draw AB ⊥ OX.
Then, ∠BOA = 30°, OA = 165 m and ∠OBA = 90°.
Height of the kite from the ground = AB.
Let BA = h meters.
From right ΔOBA, we have

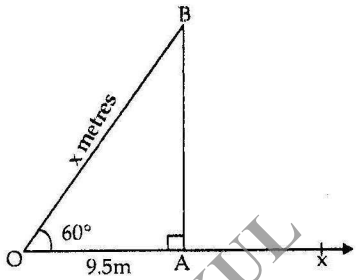


$$\frac{AB}{OA} = \sin 30° = \frac{1}{2}$$

$$\Rightarrow \frac{h}{165} = \frac{1}{2} \Rightarrow h = \frac{165}{2} = 1\frac{1}{2} = 82.5$$

Hence, the height of the kite from the ground = 82.5m.

29.(a) Let OX be the horizontal ground and let OB be the ladder leaning against the wall AB.
Then, ∠AOB = 60°, OA = 9.5 m
and ∠OAB = 90°.



Length of the ladder = OB
Let OB = x metres.
From right ΔOAB, we have

$$\frac{OB}{OA} = \sec 60° = 2$$

$$\Rightarrow \frac{x}{9.5} = 2 \Rightarrow x = (2\times 9.5) = 19.$$

Hence, the length of the ladder is 19 metres.

32. (d) ∵ ∠AOB=∠COD (Vertically opposite angles)
∠COD=x=30°

36.(b) As, 3y + y = 180°
4y = 180°
y = 45°
y = a (vertically opposite angles)
∴ ∠a = 45°

37. (b) Area of the portion DFBC

$$= \frac{1}{4}\times \pi \times (10)^2 = 25\pi$$

∴ Area of ΔBCD = $\frac{1}{2}\times 10\times 10 = 50$

∴ Area of the portion DFBOD
= Area of the portion DFBC – Area of ΔBCD
= 25π – 50
Area of the portion DFBGD

= 2 × Area of the portion DFBOD
= 2 (25π – 50) = 50π – 100.

38. (c) ∠ BCD = 180 – 59 = 121° (Opposite angles of cyclic quadrilateral)
∠ DCQ = 180 – 121 = 59° (linear pair)
∠ ADC = 180 – (40 + 59) = 81°
∠ CDQ = 180 – 81 = 99°
∠ CQD = 180– (∠ CDQ + ∠ DCQ)
= 180 – (59 + 99) = 22°

39.(d) $3x+3x+2x=180°$

$8x = 180°$ OR, $x = \frac{180}{8} = 22.5°$

As CD || AB,
$y = 2x = 2 \times 22.5 = 45°$

40. (a) Let a-d, a, a+d be the three numbers
a-d+a+a+d=-3
3a=-3
$a=\frac{-3}{3}$
a=-1

41. (b) $\log \frac{3}{5} + \log \frac{5}{36} + \log 12$

$\log \left(\frac{3}{5} \times \frac{5}{36} \times 12\right)$

= log 1
= 0

42. (a) Let the speed of boat in still water = x km/h and the rate of stream = y km/h
= (x + y) km/h and
Upstream rate = (x - y) km/h

Now, $\frac{20}{x+y} = 1 \Rightarrow x+y = 20$ ...(i)

and $\frac{20}{x-y} = 2 \Rightarrow x-y = 10$ ...(ii)

From eq (i) & (ii)
x = 15

43. (d) Let the original radius be r cm.
According to the question,

$4\pi(r+2)^2 - 4\pi r^2 = 352$

$\Rightarrow 4\pi(r^2+4r+4-r^2) = 352$

$\Rightarrow 4r+4 = \frac{352}{4\pi} = \frac{352 \times 7}{4 \times 22}$

$\Rightarrow 4r+4 = 28 \Rightarrow r = \frac{24}{4} = 6$ cm

44. (d) Let the rate of interest per annum ber r%
According to the question,

$\frac{5000 \times 2 \times r}{100} + \frac{3000 \times 4 \times r}{100} = 2200$

$\Rightarrow 100r + 120r = 2200$

$\Rightarrow 220r = 2200 \Rightarrow r = \frac{2200}{220} = 10\%$

45. (c) Let the price of the third variety be Rs. x per kg
$\therefore (126 \times 1 + 135 + 1 + 2 \times x) = 153 \times 4$
$\Rightarrow 261 + 2x = 612 \Rightarrow 2x = 612 - 261 = 351$

$\therefore x = \frac{351}{2} = 17550$

∴ The required price = Rs. 175.50 kg

46. (c) Let second number be x.
∴ The first number = 3x
ane the third number = 15x
Now, x + 3x + 15x = 3 × 57

$\Rightarrow 19x = 3 \times 57 \Rightarrow x = \frac{3 \times 57}{19} = 9$

∴ Required difference = 15x - x = 14x
= 14 × 9 = 126