

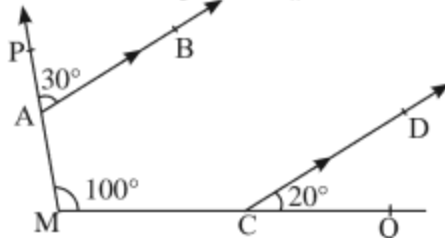
Sainik School Entrance Exam Solved Paper-2025 (Class-IX)

Note :-

- This Question Paper Booklet contains five Sections. Section "A" Mathematics contains 50 questions of 4 marks each. Section "B" Intelligence Section "C" English, Section "D" General Science AND Section "E" Social Studies contain 25 questions each of 2 mark per question. In all, the paper consists of 150 questions for a total of 400 marks. Answer all questions.
- The test is of 3 hours (180 minutes) duration.

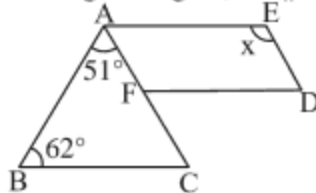
SECTION-A: MATHEMATICS

- In the above figure, $AB \parallel CD$. The value of x is:



- (a) 10 (b) 40
(c) 30 (d) 20

- In the given figure, $FD \parallel BC \parallel AE$ and $AC \parallel ED$



The value of x is:

- (a) 62° (b) 113°
(c) 129° (d) 67°

- Rahul walks 12 m towards North from his house and turns West to walk 35 m to reach the market. While returning, he walks diagonally from market to reach back to his house. The distance he travelled while returning is:
(a) 47 m (b) 43 m
(c) 39 m (d) 37 m
- The sum of ₹300 is divided between A and B such that twice of A's share is less than 3 times B's share by ₹300. B's share is :
(a) ₹120 (b) ₹150
(c) ₹160 (d) ₹180
- The perimeter of a rectangle is 240 cm. If its length is increased by 10% and its breadth is decreased by 20%, the perimeter remains the same. The length and breadth of the original rectangle respectively are :
(a) 90 cm, 30 cm (b) 100 cm, 20 cm
(c) 75 cm, 45 cm (d) 80 cm, 40 cm
- A man bought a refrigerator for ₹1500 and spent ₹300 as labour charges and ₹500 on its transportation. At what price should he sell it to make a gain of 15%?
(a) ₹18400 (b) ₹18640
(c) ₹18355 (d) ₹16560
- In a city, 40% of the adults are uneducated while 85% of the children are educated. If the ratio of the number of

adults to that of the children is 2 : 3, then what percent of the population is educated?

- (a) 65% (b) 80%
(c) 60% (d) 75%

- Read the following statements carefully and choose the correct option:

Statement I : For all rational numbers x and y , $x - y = y - x$.

Statement II : For all rational numbers x , y and z , $x + (y \times z) = (x + y) \times (x + z)$

- (a) Both statements I and II are true
(b) Both statements I and II are false
(c) Statement I is true and Statement II is false
(d) Statement I is false and statement II is true

- A can dig a trench in 12 days, B can dig it in 16 days and C can dig it in 18 days. If they dig the trench, working together and get a sum of ₹5800 for it, then share of A in the sum is:

- (a) ₹2400 (b) ₹2800
(c) ₹2000 (d) ₹1600

- A wire of length 88 cm was bent into the shape of a circle and then into a square. which figure encloses more area and by how much? (Use $\pi = \frac{22}{7}$)

- (a) Circle by 132 cm^2 (b) Circle by 264 cm^2
(c) Square by 640 cm^2 (d) Square by 320 cm^2

- There is a circular garden and path runs outside it along its boundary. A man walks around it only once keeping close to the edge. His each step is 66 cm long and he takes exactly 400 steps to go around the garden. The diameter of the garden is : (Use $\pi = \frac{22}{7}$)

- (a) 420 cm (b) 84 m
(c) 840 cm (d) 42 m

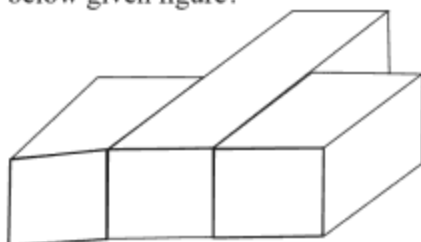
- A train runs between two stations A and B. While running from A to B, its average speed is 60 km/hr and when running from B to A, its average speed is 90 km/hr. The average speed of the train during the two-way journey is:

- (a) 78 km/hr (b) 60 km/hr
(c) 72 km/hr (d) 75 km/hr

- The weights (in kg) of 8 children are 13.4, 10.6, 12.7, 17.2, 14.3, 15, 16.5, 9.8. Their median weight (in kg) is:

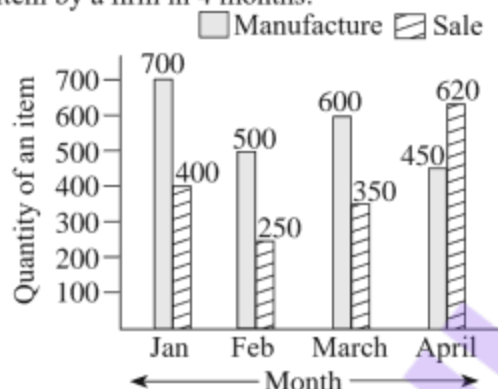
- (a) 13.85 (b) 15.5
(c) 13.5 (d) 15.75

14. If surface area and volume of a cube are numerically equal, then the side of the cube is:
 (a) 6 unit (b) 8 unit
 (c) 4 unit (d) 5 unit
15. Which one of the following options is a top view of the below given figure?



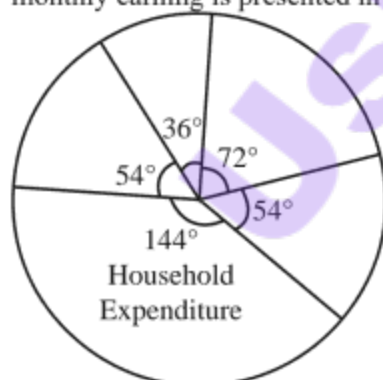
- (A) (B)
 (C) (D)
 (a) (C) (b) (D)
 (c) (A) (d) (B)

16. Following Bar-graph represents the manufacture and sale of an item by a firm in 4 months:



Total sale during the given months is what percent of the total manufacture during the month :

- (a) 74% (b) 75%
 (c) 70% (d) 72%
17. Suresh earns ₹72000 per month. Distribution of his monthly earning is presented in the following pie-chart:



How much money he spends on household expenditures every month?

- (a) ₹ 28800 (b) ₹ 28500
 (c) ₹ 32000 (d) ₹ 30800
18. Find the area of a closed figure ABCO, where A(0, 3), B(4, 3), C(4, 0) and O is the origin?
- (a) 6 unit² (b) 24 unit²
 (c) 18 unit² (d) 12 unit²

19. Four times the area of the curved surface of a cylinder is equal to 6 times the sum of the area of its bases. If its height is 2 cm then its curved surface area correct to two decimal places is:

$$\left(\text{use } \pi = \frac{22}{7} \right)$$

- (a) 452.57 cm² (b) 905.14 cm²
 (c) 301.71 cm² (d) 603.43 cm²
20. The cost of tiling 24 m wide rectangular plot is ₹39000. If the rate of tiling is ₹25 per sq. m, then the length of the plot is :
- (a) 60 m (b) 65 m
 (c) 49 m (d) 63 m
21. A square of side 60 m and rectangle of length 80 m have the same perimeter. The difference in their areas is:
- (a) 400 m² (b) 500 m²
 (c) 200 m² (d) 600 m²
22. By what number should $(-8)^{-3}$ be multiplied so that the product is equal to $(-6)^{-3}$?

- (a) $\frac{3^3}{4^3}$ (b) $\frac{4^3}{3^3}$
 (c) $\frac{3^2}{2^4}$ (d) $\frac{2^4}{3^2}$

23. In the following three-digit numbers, values of A and B are:

$$\begin{array}{r} B \ A \ A \\ + B \ A \ A \\ \hline 3 \ A \ 8 \end{array}$$

- (a) A = 4, B = 1 (b) A = 9, B = 1
 (c) A = 9, B = 2 (d) A = 3, B = 2
24. A three-digit number 2a3 is added to the number 326 to give a three-digit number 5b9 which is divisible by 9. The value of (b - a) is:
- (a) 1 (b) 3
 (c) 4 (d) 2

25. Beena bought 160 kg apples at ₹50 per kg. She sold 70% of the apples at ₹ 70 per kg and the remaining at ₹ 35 per kg. Beena's gain percent on the whole is:

- (a) 30% (b) 169%
 (c) 21% (d) 19%

26. If $a : b : c = \frac{1}{3} : \frac{1}{6} : \frac{1}{9}$, then the value of $\frac{a^2 + b^2}{b^2 - c^2}$, is:

- (a) 3 (b) 9
 (c) 12 (d) 6

27. The marked price of an article is ₹1500. A shopkeeper gives a discount of 5% and still makes a profit of 25%. The cost price of the article is:

- (a) ₹ 1140 (b) ₹ 1240
 (c) ₹ 1180 (d) ₹ 1260

28. In a camp with 200 persons, there is enough food for 42 days. How long the food will last if 40 more persons join the camp on the first day?

- (a) 32 days (b) 36 days
 (c) 40 days (d) 35 days

29. Study the following tables carefully and choose the correct option

Table A					
x	3	6	15	20	30
y	12	24	45	60	120

Table B					
x	4	7	10	16	6
y	24	42	60	96	36

- (a) In both tables A and B, x and y are in direct proportion
 (b) In both tables A and B, x and y are not in direct proportion
 (c) In table A, x and y are in direct proportion and in table B, x and y are not in direct proportion
 (d) In table A, x and y are not in direct proportion and in table B, x and y are in direct proportion
30. Which of the following vary inversely?
 (a) Distance covered and taxi fare
 (b) Distance travelled and time taken
 (c) Speed and distance covered
 (d) Speed and time taken
31. Five bells begin to toll together and toll again at intervals of 6, 5, 7, 10 and 12 seconds respectively. How many times will they toll together in one hour excluding the one at the start?
 (a) 11 times (b) 9 times
 (c) 8 times (d) 7 times
32. Read the following statements carefully and choose the correct option :
Statement I : Number of the form $3N + 2$ will leave remainder 2 when divided by 3.
Statement II: If N upon dividing by 5 leaves remainder 3 and N upon dividing by 2 leaves remainder 0, then N upon dividing by 10 leaves remainder 4.
 (a) Both statements I and II are true
 (b) Both statements I and II are false
 (c) Statement I is false and statement II is true
 (d) Statement I is true and statement II is false
33. Read the following statements carefully and choose the correct option :
Statement I: Triangle is a polygon whose sum of exterior angles is double the sum of its interior angles.
Statement II: If the sum of interior angles of a polygon is double the sum of its exterior angles, then it is a hexagon.
Statement III: If the interior angles of a triangle are in the ratio 1 : 2 : 3, then the ratio of its exterior angles is 3 : 2 : 1.
 (a) All statements I, II and III are true
 (b) All statements I, II and III are false
 (c) Only statement III is true
 (d) Only statement III is false
34. 7 men can do a piece of work in 16 days. The number of men required to do double the work in 8 days is:
 (a) 28 (b) 32
 (c) 14 (d) 24

35. A jar contains 6 red, 5 green, 4 blue and 5 yellow marbles of the same size. What is the probability that a red colour marble is chosen at random?

- (a) $\frac{2}{5}$ (b) $\frac{7}{10}$
 (c) $\frac{3}{5}$ (d) $\frac{3}{10}$

36. A bag contains 16 cards bearing number from 1 to 16. One card is chosen at random. The probability that the chosen card bears a prime number is:

- (a) $\frac{5}{16}$ (b) $\frac{3}{8}$
 (c) $\frac{5}{8}$ (d) $\frac{7}{16}$

37. The average height of 30 boys was calculated to be 150 cm. It was found later that for one boy 165 cm was wrongly copied at 135 cm during computation of the average. The correct average is :

- (a) 153 cm (b) 152 cm
 (c) 149 cm (d) 151 cm

38. A polyhedron has 40 faces and 60 edges. The number of vertices of the polyhedron is :

- (a) 22 (b) 24
 (c) 18 (d) 20

39. The population of a city was 66,150 in 2005. If the population increased at the rate of 5% per annum, then the population in 2003 was:

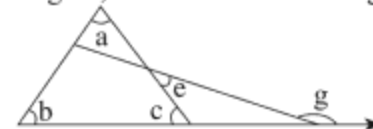
- (a) 62,150 (b) 63,400
 (c) 61,250 (d) 60,000

40. A sum of money invested at $8\frac{1}{3}\%$ per annum simple

interest, amounted to ₹2475 in 1 year 9 months. What will it amount to in 2 years at 5% per annum?

- (a) ₹ 2376 (b) ₹ 2476
 (c) ₹ 2260 (d) ₹ 2160

41. For the given figure, which of the following is true?



- (a) $c = e + (180^\circ - g)$ (b) $c = 180^\circ - e + g$
 (c) $c = 180^\circ - e - g$ (d) $c = e + g$

42. $\sqrt[3]{343} + 3 \times \sqrt{289} - \sqrt[3]{729} =$

- (a) 7 (b) 9
 (c) 8 (d) 3

43. The least square number which is exactly divisible by 3, 4, 5, 6 and 8 is :

- (a) 1600 (b) 3600
 (c) 5184 (d) 1444

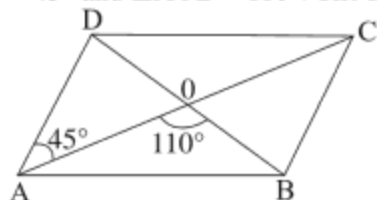
44. The difference of two numbers is 988. If the cube root of the smaller of the two numbers is 7, then the cube root of the larger number is :

- (a) 11 (b) 25
 (c) 12 (d) 13

45. The lateral surface area of a cube is 256 m^2 . The volume of the cube (in m^3) is :

(a) 216 (b) 512
(c) 64 (d) 256

46. In the figure, diagonals AC and BD of a parallelogram ABCD intersect each other at point O, such that $\angle DAC = 45^\circ$ and $\angle AOB = 110^\circ$. The measure of $\angle DBC$ is:



(a) 50° (b) 65°
(c) 45° (d) 55°

47. If the length of a rectangle is $\left(\frac{2}{3}a^2 + \frac{2}{9}\right) \text{ m}$ and its breadth is $\left(a^2 + \frac{1}{6}\right) \text{ m}$, then the area of the rectangle (in m^2) is:

(a) $\frac{2}{3}a^4 + \frac{1}{3}a^2 + \frac{1}{27}$ (b) $\frac{2}{3}a^4 + \frac{2}{9}a^2 + \frac{1}{27}$
(c) $\frac{2}{3}a^4 + \frac{1}{3}a^2 + \frac{2}{27}$ (d) $\frac{2}{3}a^4 + \frac{1}{18}a^2 + \frac{1}{27}$

48. A wall of length $(5x + 2)$ unit and height $6x$ unit has a square window of side $2x$ unit and a door of width $2x$ unit and height $3x$ unit. Which of the following algebraic expressions gives the area of the wall to be painted?

(a) $20x^2 + 3$ (b) $4x(5x + 3)$
(c) $4x(5x + 2)$ (d) $5x(2x + 3)$

49. If the height of a triangle is $(4x^2 + 6)$ unit and the base of that triangle is $(3x^2 - 4)$ unit, then the area of the triangle in sq. unit is :

(a) $12x^4 - 2x^2 - 6$
(b) $6x^2 + x - 12$
(c) $2(6x^4 + x^2 - 6)$
(d) $6x^4 + x^2 - 12$

50. What should be added to $4c(-a - 2b + c)$ to obtain $3c(a - b + c) - 2c(a + b - c)$?

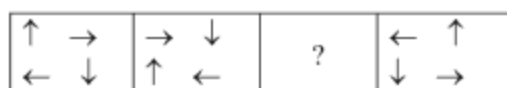
(a) $-3ac - 13bc + 9c^2$ (b) $-3ac - 3bc - c^2$
(c) $5ac - 3bc + 9c^2$ (d) $5ac + 3bc + c^2$

SECTION-B: INTELLIGENCE

51. Choose the number-group which is different from others:

(a) [64, 14, 54] (b) [99, 25, 74]
(c) [26, 4, 22] (d) [45, 9, 36]

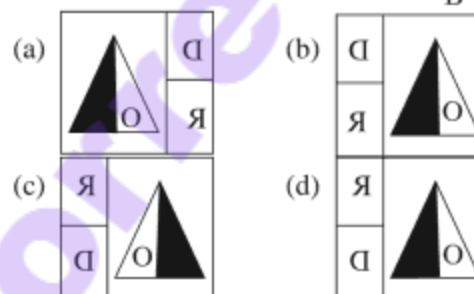
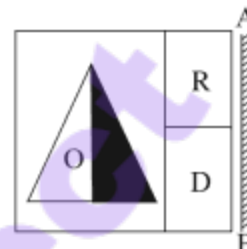
52. Replace the question mark (?) in the following figural series :



Choose the correct answer from the options given below:



53. Select the correct mirror image of the following figure, where the mirror is placed on the line AB as shown below:



54. Find the missing number (?) in the given series:

1, 2, 3, 5, 8, 13, 21, ?

(a) 33 (b) 34
(c) 28 (d) 32

55. Find the missing term (?) in the following letter-number series:

3F, 6G, 11I, 18L, ?

(a) 25 P (b) 27 N
(c) 25 N (d) 27 P

56. There is a certain relationship between two given words on the left side of (: :). Choose correct alternative for the missing term (?) having the similar relationship with the third term.

Thermometer : Temperature :: Odometer : ?

(a) Speed (b) Humidity
(c) Pressure (d) Current

57. Study the following information carefully and identify the appropriate 4 digit number :

- Its tens place digit is 5 less than the digit as ones place
- Its ones place digit is the largest 1-digit even number.
- Its hundreds place digit is the ones place digit of (758-354).
- Its thousands place digit is the sum of the digits at its tens place and hundreds place.

(a) 7438 (b) 7348
(c) 9548 (d) 8358

58. Find the odd one out among the following words:

(a) Pond (b) Lake
(c) Rain (d) River

59. Complete the following analogy :

DE : 9 :: FG : ?

(a) 15 (b) 14
(c) 11 (d) 13

- <https://usuallycorrect.com>

77. Choose the word similar in meaning to the given word:
'Bleak'

- (a) Gloomy (b) Bemoan
(c) Balmy (d) Ugly

78. Fill in the blank with appropriate adverb:

_____ we escaped unhurt.

- (a) Accidentally (b) Wisely
(c) Fortunately (d) Certainly

79. Change the given sentence to passive voice:

Your behaviour annoyed me.

- (a) I was annoyed at your behaviour.
(b) I was annoyed on your behaviour.
(c) I were annoyed on your behaviour.
(d) Your behaviour was annoying me.

80. Fill in the correct adverb from the following options to make a meaningful sentence:

We cannot play music _____ in this park.

- (a) audibly (b) loudly
(c) aloud (d) loudly

81. Change the given sentence Indirect Narration :

Pawan said, "How beautiful the scene is!"

- (a) Pawan exclaimed that the scene was very beautiful
(b) Pawan exclaimed that the scene is indeed beautiful
(c) Pawan exclaimed that how the scene was beautiful
(d) Pawan exclaimed how beautiful is the scene.

DIRECTIONS: Read the passage given below and answer the question that follow:

Mountain climbers are unanimous in agreeing that the unpredictable weather is what they fear the most. There may be sunshine one moment and a snowstorm the other. A higher altitudes snow is a regular feature and being decisive about setting up camps or proceeding further is crucial. The icy sheets after ice storms make walking treacherous, while the powdery snow makes a mountaineer sink deep into the snow. Up there, where the intention is to embrace Nature's wonder, one realises that it cannot be done without facing its formidable glory. A true mountaineer may challenge the mountain, yet is always respectful to the powerful forces of nature.

Summing mountains carries its own health risks such as oxygen and altitude sickness problems, frost bites, swelling of hands and feet, fluid collection in brain or lungs and exhaustion. Yet the gratification mountaineers feel from mastering something that is so frightening, urges them to undertake these endeavours. We may think that the mountaineers are fearless, experts say, "Not at all It's fear that keeps them so intrigued with such arduous journeys." Impulse and brazenness can be deadly foes. In the words of the Indian mountaineer, Bachendri Pal, "The biggest risk _____ is to not take the risk at all. Remember that."

82. The reason given for calling the weather 'unpredictable' on the mountains, as given in the passage is :

- (a) Forces of Nature
(b) High altitude resulting in less oxygen
(c) Sunshine as well as snowstorm in short intervals
(d) Icy sheets after ice storms

83. The reason a true mountaineer is respectful to the forces of nature up in the mountains is:

- (a) Experience (b) Survival
(c) Directive (d) Challenge

84. Choose the inappropriate reason for the feeling of exhilaration on reaching a summit, that the mountain-climbers experience.

- (a) Application of the inculcated survival instinct
(b) Opportunity to use sophisticated mountaineering equipment
(c) Achievement of a seemingly impossible feat
(d) Spectacular panoramic view

85. The word from the passage that can be used to fill in the blank :

His _____ opponent beat him in no time in the boxing ring.

- (a) treacherous (b) formidable
(c) unanimous (d) unpredictable

86. The word from the passage that means same as :

Involving a lot of effort and energy, especially over a period of time.

- (a) Endeavour (b) Arduous
(c) Treacherous (d) Exhaustion

87. Organize the parts to form a meaningful sentence:

- A. Than I expected
B. Our players
C. Was rather worse
D. The performance of

- (a) ABDC (b) DBCA
(c) BCAD (d) CBDA

88. Choose the word opposite in meaning to the given word :
Abandon

- (a) Solicit (b) Chastise
(c) Adopt (d) Continue

89. Spot the error in the following sentence:

She asked / me that / what / had happened

- (A) (B) (C) (D)
(a) (B) (b) (D)
(c) (A) (d) (C)

90. Change the given sentence to Direct narration by choosing the correct option :

He said that Mangal would be working hard.

- (a) He said, "Mangal would be working hard."
(b) He said, "Mangal will be working hard."
(c) He said, "Mangal would work harder."
(d) He said, "Mangal will work hard."

91. Comparative degree of the adjective 'Most' is :

- (a) Many (b) Foremost
(c) More (d) Much

92. Fill in the blanks with appropriate choice :

I wrote a line on the sand with a _____ that she could not _____ before the waves washed it away.

- (a) read, reed (b) reed, read
(c) read, read (d) reed, reed

93. Choose the correct idiom for the blank :

Mediocre artists like Sheena are found _____.

- (a) a dime a dozen (b) in rain or shine
(c) all and sundry (d) at every shop

94. Choose the appropriate question tag :
We are going to the movie tonight, _____
(a) isn't it? (b) is it?
(c) are we? (d) aren't we?
95. Find the correctly spelt word :
(a) Irrepereble (b) Meagere
(c) Renaissance (d) Reccomendation
96. Change the gender in the sentence :
He is a father and a teacher.
(a) She is a father and a teacheress.
(b) She is a father and teacher.
(c) She is a father and a teacheress.
(d) She is a mother and a teacher.
97. Change the sentence from passive voice to active voice :
By whom was this beautiful glass broken?
(a) Who broke this beautiful glass?
(b) This beautiful glass has been broken by whom?
(c) Who has broken this beautiful glass?
(d) Who had broken this beautiful glass?
98. Choose the appropriate word for the blank to complete the sentence :
Today is the _____ day of my life, nothing seems to go as planned.
(a) worse (b) worst
(c) best (d) bad
99. Choose the word opposite in meaning of 'permit':
(a) Present (b) Prevent
(c) Allow (d) License
100. Choose the correct conjunction from the options given below to complete the sentence :
Though she worked hard, _____ she failed.
(a) although (b) nevertheless
(c) but (d) yet
104. The force exerted by a magnet is an example of:
(a) Electrostatic force (b) Force of gravity
(c) Contact force (d) Non-contact force
105. Which of the following is NOT a Kharif crop?
(a) Mustard (b) Cotton
(c) Paddy (d) Soyabean
106. Which of the following may NOT be a cause of passing HIV virus from an infected person to a normal person?
(a) Shaking hands with an infected person
(b) Through the milk of an infected mother to her infant
(c) Sharing the syringes used for injecting drugs
(d) Sexual contact with an infected person
107. The major component of compressed natural gas (CNG) is
(a) Methane (b) Oxygen
(c) Carbon monoxide (d) Nitrogen dioxide
108. Combustion is the chemical process in which substance reacts with _____ and produces heat.
(a) Carbon dioxide (b) Carbon monoxide
(c) Oxygen (d) Nitrogen
109. Which of the following is NOT a part of the animal cell?
(a) Cytoplasm (b) Nucleus
(c) Cell membrane (d) Cell wall
110. The animals which give birth to the young ones are called :
(a) Ovoviviparous (b) Parthenogenic
(c) Oviparous (d) Viviparous
111. Special shapes are given to the objects moving in fluid to :
(a) Restore fluid friction
(b) Keep fluid friction unchanged
(c) Minimise fluid friction
(d) Maximise fluid friction
112. Identify the measures used to limit noise pollution:
(A) Minimise the use of automobile horns
(B) Planting trees along the roads
(C) Installing silencing devices in aircraft engines
(D) Cutting trees around the residential buildings
Choose the correct option from the following:
(a) (B) and (D) only
(b) (A) and (C) only
(c) (B), (C) and (D) only
(d) (A), (B) and (C) only

SECTION-D: GENERAL SCIENCE

101. Tremors are caused by the disturbance in the _____ of earth.
(a) crust (b) inner core
(c) mantle (d) outer core
102. The amount of heat energy produced on complete combustion of 1 kg. of a fuel is called _____ value.
(a) energy (b) calorific
(c) fuel (d) ideal fuel
103. Match the substances given in Column A with their uses given in Column B :
- | A | B |
|------------|--------------------|
| A. Gold | I. Thermometer |
| B. Iron | II. Electric wires |
| C. Mercury | III. Machinery |
| D. Copper | IV. Jewellery |
- Choose the correct answer from the options given below:
(a) A-IV, B-II, C-III, D-I
(b) A-IV, B-III, C-II, D-I
(c) A-IV, B-I, C-II, D-III
(d) A-IV, B-III, C-I, D-II
113. Image formed by a plane mirror is:
(a) Real, at the surface of the mirror and enlarged
(b) Real, behind the mirror and the same size as the object
(c) Virtual, behind the mirror and enlarged
(d) Virtual, behind the mirror and the same size as the object
114. Which of the following is the most reactive with water?
(a) Sodium
(b) Cobalt
(c) Phosphorus
(d) Zinc

115. Select the correct statements from the following:
When the electric current passes through a conducting solution:
(A) Bubbles of the gas may be formed on the electrodes
(B) Deposits of metal may be seen on the electrode
(C) There is no change in colour of the solution
(D) Change in colour of the solution may occur
Choose the correct option from the following:
(a) (A), (B) and (D) only
(b) (B) and (C) only
(c) (A), (B) and (D) only
(d) (A) and (C) only
116. Which of the following hormones helps the body to adjust to stress when one is very angry, embarrassed or worried?
(a) Insulin (b) Estrogen
(c) Adrenalin (d) Thyroxine
117. The method of preparing compost with the help of redworms is called:
(a) Vermicomposting (b) Decomposing
(c) Composting (d) Worming
118. The variety of organisms existing on the earth, their interrelationships and their relationship with the environment is called:
(a) Biosphere Reserve (b) Biology
(c) Biosphere (d) Biodiversity
119. Which of the following is the first Reserve forest of India?
(a) Jim Corbett National Park
(b) Tawa Reservoir
(c) Satpura National Park
(d) Kaziranga
120. Many young people get acne and pimples on the face during adolescence due to:
(a) Increased activity of salivary glands
(b) Increased activity of sweat glands and sebaceous glands
(c) Increased activity of sebaceous glands
(d) Increased activity of sweat glands
121. Match the following:
- | Member of Solar System | Example |
|------------------------|---------------|
| A. Satellite | I. Cassiopeia |
| B. Constellation | II. Sirius |
| C. Comet | III. Moon |
| D. Star | IV. Halley |
- Choose the correct option from the answers given below:
(a) A-III, B-I, C-IV, D-II
(b) A-I, B-III, C-IV, D-II
(c) A-III, B-IV, C-I, D-II
(d) A-IV, B-I, C-III, D-II
122. The percentage of different gases in air is :
(a) 60% nitrogen and 40% oxygen
(b) 10% nitrogen, 50% oxygen and other gases
(c) 78% nitrogen, 21% oxygen and other gases
(d) 20% nitrogen, 20% oxygen and other gases

123. Which is NOT a naturally occurring greenhouse gas?
(a) Nitrous oxide (b) Ethane
(c) Methane (d) Carbon dioxide
124. Match the organisms in Column A with their action in Column B:
- | A | B |
|--------------|--------------------|
| A. Bacteria | I. Fixing Nitrogen |
| B. Rhizobium | II. Malaria |
| C. Protozoa | III. AIDS |
| D. Virus | IV. Tuberculosis |
- Choose the correct option from the answers given below:
(a) A-I, B-II, C-III, D-IV
(b) A-II, B-I, C-IV, D-III
(c) A-IV, B-I, C-II, D-III
(d) A-III, B-II, C-I, D-IV
125. Microorganisms are classified into four major groups as:
(a) Virus, Paramecium, Antibodies, Antibiotics
(b) Fungi, Bacteria, Pathogens, Rhizobium
(c) Bacteria, Aspergillus, Amoeba, Spirogyra
(d) Bacteria, Fungi, Protozoa, Algae

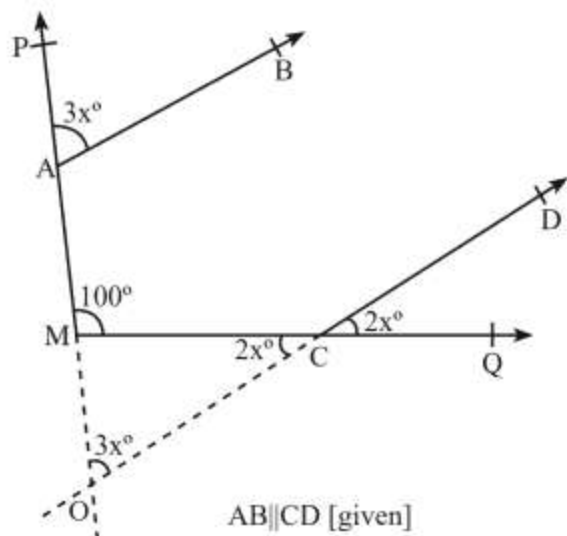
SECTION-E: SOCIAL SCIENCE

126. Which one of the following is an example of Marine based industry?
(a) Iron ore
(b) Pharmaceuticals
(c) Cotton textile
(d) Sea food processing
127. Which Article of the Constitution of India states that the practice of untouchability has been abolished?
(a) Article 19 (b) Article 21
(c) Article 14 (d) Article 17
128. Which country is the largest producer of "Bauxite" in the world?
(a) Australia (b) Russia
(c) South Africa (d) Brazil
129. Match List-I with List-II:
- | List-I | List-II |
|------------|-------------------------|
| A. Diwan | I. Financial Officer |
| B. Bakhshi | II. Military Paymaster |
| C. Faujdar | III. Military Commander |
| D. Kotwal | IV. Police Commander |
- Choose the correct answer from the options given below:
(a) A-IV, B-I, C-II, D-III
(b) A-III, B-I, C-II, D-IV
(c) A-I, B-II, C-III, D-IV
(d) A-II, B-III, C-I, D-IV
130. The full form of "CITIES" is:
(a) The Convention on Indiscriminate Trade in Endangered Species.
(b) The Contract on Indiscriminate Trade in Endangered Species.
(c) The Contract on International Trade in Endangered Species.
(d) The Convention on International Trade in Endangered Species.

131. The power of the judiciary to strike down particular laws passed by the Parliament if it believes them to be in violation of the basic structure of the Constitution is called _____.
 (a) Amendment (b) Judicial review
 (c) Judicial activism (d) Separation of powers
132. Which one among the following statements is NOT correct about the Gram Sabha?
 (a) The work of the Gram Panchayat has to be approved by the Gram Sabha.
 (b) The Gram Sabha prevents the Panchayat from misusing money.
 (c) The ward Panchs and the Sarpanch form the Gram Sabha.
 (d) Anyone who is 18 years old or more and lives in the area covered by a Panchayat is a member of the Gram Sabha.
133. Which of the following statements are correct?
 (A) Public facilities relate to people's basic needs.
 (B) Public facilities are only for those who can afford them.
 (C) The responsibility to provide public facilities lie with the government.
 (D) The responsibility to provide public facilities lie with private companies.
 Choose the correct answer from the options given below:
 (a) (A) and (C) only (b) (A) and (D) only
 (c) (A) and (B) only (d) (B) and (C) only
134. Ibn Battuta, a fourteenth century traveller, was from which of the following countries?
 (a) Iran (b) Morocco
 (c) Afghanistan (d) China
135. According to the Constitution of India, there are _____ organs of the government.
 (a) Four (b) Five
 (c) Two (d) Three
136. Which of the following is a method for conservation of land resource?
 (a) Land degradation (b) Afforestation
 (c) Overgrazing (d) Use of chemical pesticide
137. Which of the following is NOT a feature of a shopping complex?
 (a) Multiple products under a roof
 (b) Entertainment facilities
 (c) Branded stores
 (d) Buying and selling takes place between traders
138. The Magnitude of the Earthquake is measured on:
 (a) Nichter scale (b) Richter scale
 (c) Digital scale (d) Victor scale
139. Which of these is NOT a function of the Municipal Corporation?
 (a) Providing defense services
 (b) Garbage collection
 (c) Prevents outbreak of diseases in the city
 (d) Running schools
140. Sahara, the world's largest desert, is located in which of the following continents?
 (a) South America (b) Antarctica
 (c) Africa (d) North America
141. Which one of the following is NOT a factor of soil formation?
 (a) Precipitation (b) Climate
 (c) Time (d) Parent Rock
142. Which crop is also known as "Golden Fibre"?
 (a) Wheat (b) Millets
 (c) Cotton (d) Jute
143. Gandhiji carried out the Dandi March to oppose which of the following?
 (a) Simon Commission
 (b) Partition of Bengal
 (c) Rowlatt Act
 (d) Salt law
144. The last Mughal emperor was:
 (a) Bakht Khan
 (b) Ahmadullah Shah
 (c) Bahadur Shah Zafar
 (d) Nawab Wajid Ali Shah
145. The Employment of Manual Seavengers and Construction of Dry Latrines (Prohibition) Act, was passed by the Government of India in which year?
 (a) 1992 (b) 193
 (c) 1989 (d) 1990
146. The difference between the birth rate and the death rate of a country is called the _____.
 (a) Population distribution
 (b) Life expectancy
 (c) Natural growth rate
 (d) Average density of population
147. Which one of the following is a Renewable Resource?
 (a) Solar energy (b) Petroleum
 (c) Natural gas (d) Coal
148. The book titled "Amar Jiban" was written by:
 (a) Tarabai Shinde
 (b) Rashsundari Devi
 (c) Rokeya Sakhawat Hossain
 (d) Pandita Ramabai
149. What is the full form of "PIL"?
 (a) Public Interest Litigation
 (b) Public Information Litigation
 (c) Public Interrogation Litigation
 (d) Private India Limited
150. The Azad Hind Fauj was raised by:
 (a) Jawaharlal Nehru
 (b) Subhas Chandara Bose
 (c) Mahatma Gandhi
 (d) Bhagat Singh

Hints & Explanations

1. (d)



In figure, line PM and DC is extended to intersect at O.

$\angle PAB = \angle MOC = 3x^\circ$ [corresponding angles]

$\angle DCQ = \angle MCO = 2x^\circ$ [Vertical opposite angles]

The exterior angle of a triangle is equal to the sum of the two opposite interior angles,

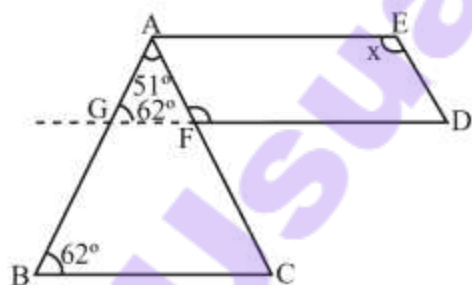
$\angle AMC = \angle MOC + \angle MCO$

$$100^\circ = 3x^\circ + 2x^\circ$$

$$100^\circ = 5x^\circ$$

$$x = \boxed{20^\circ}$$

2. (b)



In this figure line DF is extended to point G at AB.

$\angle ABC = \angle AGF = 62^\circ$ [Corresponding angles]

The exterior angle of a triangle is equal to the sum of the two opposite interior angles,

$$\angle AGF + \angle FAG = \angle AFD$$

$$62^\circ + 51^\circ = \angle AFD$$

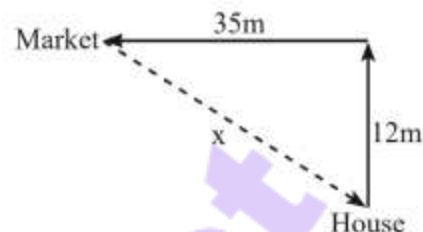
$$113^\circ = \angle AFD$$

In parallelogram AFDE,

$\angle AFD = \angle AED$ [opposite angles are equal]

$$\boxed{113^\circ} = x$$

3. (d)



$$\begin{aligned} x &= \sqrt{(35)^2 + (12)^2} \\ &= \sqrt{1225 + 144} \\ &= \sqrt{1369} = \boxed{37m} \end{aligned}$$

4. (d) $B + A = 300$... (1)

$3B - 2A = 300$... (2)

Multiply equation (1) by 3 then,

$$3B + A = 900$$

$$3B - A = 300$$

$$\begin{array}{r} (-) \quad (+) \quad (-) \\ \hline \end{array}$$

$$5A = 600$$

$$A = 120$$

Put the value of A in equation (1) we get,

$$B + 120 = 300$$

$$B = \boxed{180}$$

5. (d) Let the length and breadth of the rectangle be ℓ and b perimeter of a rectangle = $2(\ell + b) = 240$

$$\ell + b = 120 \quad \dots(1)$$

Now, its length is increased by 10% and breadth is decreased by 20% then, Perimeter remains the same.

$$2\left(\ell \times \frac{110}{100} + b \times \frac{80}{100}\right) = 240$$

$$1.1\ell + 0.8b = 120 \quad \dots(2)$$

By solving equation (1) and (2) we get,

$$[\ell + b = 120] \times 1.1.$$

$$1.1\ell + 0.8b = 120$$

So,

$$1.1\ell + 1.1b = 132$$

$$1.1\ell + 0.8b = 120$$

$$\begin{array}{r} (-) \quad (-) \quad (-) \\ \hline \end{array}$$

$$0.3b = 12$$

$$b = \boxed{40 \text{ cm}}$$

Put the value of b in equation (1)

$$\ell + 40 = 120$$

$$\ell = \boxed{80 \text{ cm}}$$

6. (a) Cost of refrigerator to man = ₹15200
labour charges = ₹300
transportation charges = ₹500
Total cost → ₹16000
To make a gain of 15%, selling price should be
$$= 16000 \times \frac{(100+15)}{100}$$
$$= \boxed{\text{₹18400}}$$

7. (d) Let the number of adults and children in the city be $200x$ and $300x$.

A.T.Q.

$$\text{Adults educated} = 200x \times \frac{(100-40)}{100}$$
$$= 120x$$

$$\text{Children educated} = 300x \times \frac{(85)}{100}$$
$$= 255x$$

$$\text{Percent of the population is educated} = \frac{120x + 255x}{500x} \times 100$$
$$= \frac{375x}{500x} \times 100$$
$$= \boxed{75\%}$$

8. (b) Statement I : Let $x = 5, y = 2$
then $x - y = y - x$
 $5 - 2 = 2 - 5$
 $3 \neq -3$

So, statement I is false.

Statement II : Let $x = 1, y = 2, z = 3$
then, $x + (y \cdot z) = (x + y)(x + z)$
 $1 + (2 \times 3) = (1 + 2)(1 + 3)$
 $1 + 6 = 3 \times 4$
 $7 \neq 12$

So, statement II is also false.

Hence, Both statement I and II are false.

9. (a)
- | | | |
|-------------|---------------------------------|------------------------|
| A - 12 days | $\frac{\text{eff.}}{\times 12}$ | LCM = 144 (Total work) |
| B - 16 days | $\times 9$ | |
| C - 18 days | $\times 8$ | |

$$\text{A, B and C together can complete the work in} = \frac{144}{12+9+8}$$
$$= \frac{144}{29}$$

$$\text{A can complete the work in} = \frac{\frac{144}{29}}{\frac{144}{12}} = \frac{12}{29}$$

$$\text{A's share} = 5800 \times \frac{12}{29}$$
$$= \boxed{\text{₹2400}}$$

10. (a) Circumference of circle = $2\pi r = 88 \text{ cm}$

$$r = \frac{88 \times 7}{2 \times 22} = 14 \text{ cm}$$

$$\text{Area of circle} = \pi r^2$$
$$= \frac{22}{7} \times 14 \times 14 = 616 \text{ cm}^2$$

$$\text{Perimeter of square} = 4a = 88 \text{ cm}$$
$$a = 22 \text{ cm}$$

$$\text{Area of square} = a^2 = 22 \times 22 = 484$$

$$\text{Difference between the area of circle and area of square} = 616 - 484 = 132 \text{ cm}^2$$

Hence, Circle has more area by 132 cm^2 .

11. (b) Circumference of circular garden = $2\pi r = 66 \times 400$

$$r = \frac{66 \times 400 \times 7}{2 \times 22}$$

$$r = 4100 \text{ cm}$$

$$\text{Diameter} = 2r = 2 \times 4100$$

$$= 8400 \text{ cm}$$

$$[\because 1 \text{ m} = 100 \text{ cm}]$$

$$= \boxed{84 \text{ m}}$$

12. (c) Let the distance between station A to station B be x
ATQ

$$\text{Average speed} = \frac{\text{Total distance}}{\text{Total time}}$$
$$= \frac{x + x}{\frac{x}{60} + \frac{x}{90}} = \frac{2x}{\frac{3x + 2x}{180}}$$
$$= \frac{2x}{5x} \times 180 = \boxed{72 \text{ km/hr}}$$

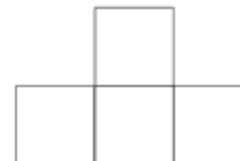
13. (a) Data of weight of 8 children: 13.4, 10.6, 12.7, 17.2, 14.3, 15, 16.5, 9.8

Arrange in ascending order: 9.8, 10.6, 12.7, 13.4, 14.3, 15, 16.5, 17.2

$$\text{Median: } \frac{\left(\frac{n}{2}\right)^{\text{th}} + \left(\frac{n}{2} + 1\right)^{\text{th}} \text{ term}}{2}$$
$$= \frac{\left(\frac{8}{2}\right)^{\text{th}} + \left(\frac{8}{2} + 1\right)^{\text{th}} \text{ term}}{2} = \frac{(4^{\text{th}} + 5^{\text{th}}) \text{ term}}{2}$$
$$= \frac{13.4 + 14.3}{2} = \frac{27.7}{2} = \boxed{13.85}$$

14. (a) Let the side of cube be a
surface area of cube = Volume of cube
 $6a^2 = a^3$
 $\boxed{6} = a$

15. (b)



$\therefore$ figure (D) is the correct answer.

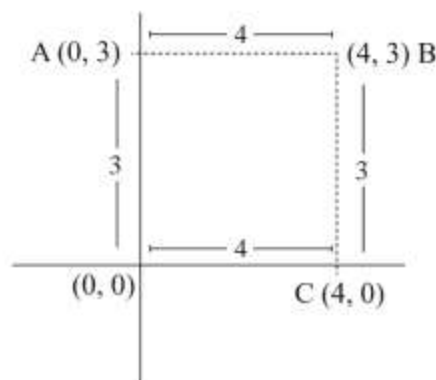
$$16. (d) \text{ Required percentage} = \frac{1620}{2250} \times 100$$

$$= \boxed{72\%}$$

17. (a) Money he spends on household expenditures every month:

$$= \frac{72000}{360} \times 144 = \boxed{\text{₹ } 28800}$$

18. (d)



So, the figure is a rectangle

length = 3 units

Breadth = 4 units

Area of rectangle = $\ell \times b$

$$= 3 \times 4 = \boxed{12 \text{ units}}$$

19. (d) 4 (curved surface area of cylinder) = 6 (the sum of the areas of its bases)

$$4(2\pi rh) = 6(2\pi r^2)$$

$$4(2\pi r(12)) = 6(2\pi r^2)$$

$$r = 8 \text{ cm}$$

Curved surface area of cylinder = $2\pi rh$

$$= 2 \times \frac{22}{7} \times 8 \times 12$$

$$= 603.4285 \sim \boxed{603.43 \text{ cm}^2}$$

20. (b)



$$\text{Area of rectangle} = \ell \times b = \frac{\text{₹ } 39000}{\text{₹ } 25 / \text{m}^2}$$

$$\Rightarrow 24 \ell = 1560 \text{ m}^2$$

$$\Rightarrow \ell = \frac{1560}{24} = \boxed{65 \text{ m}}$$

21. (a) Perimeter of square = 4 (side)

$$= 4 \times 60 = 240 \text{ m}$$

Perimeter of rectangle = $2(\ell + b)$

$$= 2(80 + b)$$

$$= 160 + 2b$$

Both square's and rectangle's perimeter are same

$$240 = 160 + 2b$$

$$2b = 80$$

$$b = 40 \text{ m}$$

Area of square = $(\text{side})^2 = (60)^2$

$$= 3600 \text{ m}^2$$

Area of rectangle = $\ell \times b = 80 \times 40$

$$= 3200 \text{ m}^2$$

Difference in their areas = $3600 - 3200$

$$= \boxed{400 \text{ m}^2}$$

22. (b) Let the number should be multiply be x

A.T.Q.

$$\Rightarrow x \times (-8)^{-3} = (-6)^{-3}$$

$$\Rightarrow \frac{x}{(-8)^3} = \frac{1}{(-6)^3}$$

$$\Rightarrow x = \frac{(-8)^3}{(-6)^3}$$

$$= \frac{(2^3)^3}{3^3} \quad [\because a^m \times b^m = (ab)^m]$$

$$= \frac{2^3 \times 2^3 \times 2^3}{2^3 \times 3^3} = \frac{2^6}{3^3} = \frac{(2^2)^3}{3^3} = \boxed{\frac{4^3}{3^3}}$$

23. (b)

B A A

+ B A A

3 A 8

A = 9, B = 1 satisfies the above mentioned condition from the given options.

24. (d) $2a3 + 326 = \frac{5b9}{9}$

Divisibility rule of 9 : Sum of digits will be divisible by 9.

$$\Rightarrow \frac{5 + b + 9}{9} = \frac{14 + b}{9}, \boxed{b = 4}$$

$$= \frac{14 + 4}{9} = \frac{18}{9}$$

And, **2 a 3**

$$\begin{array}{r} + 326 \\ \hline 549 \end{array}$$

$$\Rightarrow a + 2 = 4$$

$$\boxed{a = 2}$$

$$\text{So, } b - a = 4 - 2 = \boxed{2}$$

25. (d) cost price = $160 \times 50 = \text{₹ } 8000$

$$\text{Selling price} = \left(160 \times \frac{70}{100}\right) \times 70 = \text{₹ } 7840$$

$$\text{Selling price 2} = \left(160 \times \frac{30}{100}\right) \times 35 = ₹ 1680$$

$$\begin{aligned}\text{Beena's gain \%} &= \frac{(7840 + 1680) - 8000}{8000} \times 100 \\ &= \frac{1520}{8000} \times 100 = \boxed{19\%}\end{aligned}$$

26. (b) LCM of 3, 6, 9 = 18

$$a : b : c = \frac{1}{3} \times 18 : \frac{1}{6} \times 18 : \frac{1}{9} \times 18 = 6 : 3 : 2$$

$$\begin{aligned}\text{Now, } \frac{a^2 + b^2}{b^2 - c^2} &= \frac{(6)^2 + (3)^2}{(3)^2 - (2)^2} \\ &= \frac{36 + 9}{9 - 4} \\ &= \frac{45}{5} = \boxed{9}\end{aligned}$$

27. (a) Let the cost price of the article be x

A.T.Q.

$$\Rightarrow x \times \frac{125}{100} = 1500 \times \frac{(100 - 5)}{100}$$

$$\Rightarrow x \times \frac{5}{4} = 15 \times 95$$

$$\Rightarrow x = \boxed{₹1140}$$

28. (d) $\text{Men}_1 \times \text{Day}_1 = \text{Men}_2 \times \text{Day}_2$

$$200 \times 42 = (200 + 40) \times \text{Day}_2$$

$$\text{Day}_2 = \frac{200 \times 42}{240}$$

$$= \boxed{35 \text{ days}}$$

29. (d) Table A: $\frac{x}{y} = \frac{3}{12} = \frac{6}{24} = \frac{1}{4} \neq \frac{15}{45} = \frac{20}{60} = \frac{30}{120} = \frac{1}{3}$

$$\text{Table B: } \frac{x}{y} = \frac{4}{24} = \frac{7}{42} = \frac{10}{60} = \frac{16}{96} = \frac{6}{36} = \frac{1}{6}$$

Hence, in table A, x and y are not in direct proportion and in table B, x and y are in direct proportion.

30. (d) Distance $\propto$ Speed

$$\text{Distance} \propto \text{Time taken}$$

$$\text{Speed} \propto \frac{1}{\text{time taken}}$$

$$\text{Time taken} \propto \frac{1}{\text{Speed}}$$

31. (c) LCM of 6, 5, 7, 10 and 12 = 420

$$1 \text{ hour} = 60 \times 60 = 3600 \text{ seconds}$$

they toll together energy 420 seconds

$$= \frac{3600}{420} = 8.57 \sim \boxed{8 \text{ times}}$$

32. (d) Statement I : If N = 0, then $3N + 2 = 2$, and $2 \div 3$ leaves remainders 2

If N = 1, then $3N + 2 = 5$, and $5 \div 3$ leaves remainders 2

If N = 2, then $3N + 2 = 8$, and $8 \div 3$ leaves remainders 2
So, statement I is true.

Statement II : N will satisfy for $\frac{N}{5} = 3$ and $\frac{N}{2} = 0$

but will not satisfy for $\frac{N}{10} = 4$.

So, statement II is false

Hence, statement I is true and statement II is false.

33. (d) Statement I : for any polygon the sum of exterior angles is always 360° .

For a triangle, the sum of interior angles is 180°

So, Exterior angle = $2 \times$ interior angles

$$360 = 2 \times 180^\circ$$

$\therefore$ Statement I is true.

Statement II : Sum of exterior angles of any polygon = 360°

Let's suppose interior angle sum = $2 \times 360^\circ = 720^\circ$

So, Sum of interior angles = $(n - 2) \times 180^\circ$

$$720 = (n - 2) \times 180^\circ$$

$$n - 2 = 4$$

$$n = 6$$

So, the polygon is a hexagon

$\therefore$ Statement II is true.

Statement III : Let the interior angles are :-

$$x, 2x, 3x$$

$$x + 2x + 3x = 6x = 180^\circ$$

$$x = 30^\circ$$

So, the angle are :

$$30^\circ, 60^\circ, 90^\circ$$

Exterior angles = $180 -$ interior angle

So, $150^\circ, 120^\circ, 90^\circ$

Now, the ratio :

$$150 : 120 : 90 \rightarrow 5 : 4 : 3$$

$\therefore$ Statement III is false.

Hence, only statement III is false.

34. (a) $\frac{M_1 D_1}{W_1} = \frac{M_2 D_2}{W_2}$

Let the men required be x and initial work be a unit and double after i.e., 2 unit.

A.T.Q.

$$\Rightarrow \frac{7 \times 16}{1} = \frac{x \times 8}{2}$$

$$x = \boxed{28 \text{ Men}}$$

35. (d) Probability = $\frac{\text{Favourable outcomes}}{\text{Total outcomes}}$

$$= \frac{6}{20} = \boxed{\frac{3}{10}}$$

36. (b) Probability = $\frac{\text{Favourable outcomes}}{\text{Total outcomes}}$

Prime number between 1 to 16 = 2, 3, 5, 7, 11, 13

$$= \frac{6}{16} = \boxed{\frac{3}{8}}$$

- <https://usuallycorrect.com>

$$\begin{aligned}
 &= 30x^2 + 12x - [4x^2 + 6x^2] \\
 &= 30x^2 + 12x - 10x^2 \\
 &= 20x^2 + 12x \\
 &= \boxed{4x(5x+3)}
 \end{aligned}$$

49. (d) Area of triangle = $\frac{1}{2} \times \text{Base} \times \text{Height}$

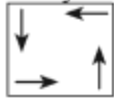
$$\begin{aligned}
 &= \frac{1}{2} \times (4x^2 + 6) \times (3x^2 - 4) \\
 &= \frac{1}{2} [12x^4 - 16x^2 + 18x^2 - 24] \\
 &= \boxed{6x^4 + x^2 - 12}
 \end{aligned}$$

50. (d) Let the number added be x

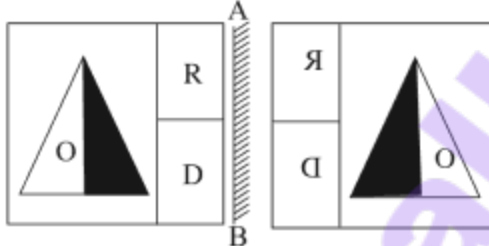
$$\begin{aligned}
 \Rightarrow 4c(-a-2b+c) + x &= 3c(a-b+c) - 2c(a+b-c) \\
 \Rightarrow x &= 3c(a-b+c) - 2c(a+b-c) - [4c(-a-2b+c)] \\
 \Rightarrow &= 3ac - 3bc + 3c^2 - 2ac - 2bc + 2c^2 + 4ac + 8bc - 4c^2 \\
 &= \boxed{5ac + 3bc + c^2}
 \end{aligned}$$

51. (a) $\rightarrow 64 - 14 = 50 \neq 54$
 $\rightarrow 99 - 25 = 74 = 74$
 $\rightarrow 26 - 4 = 22 = 22$
 $\rightarrow 45 - 9 = 36 = 36$

52. (b) Every arrow is rotating 90° clockwise



53. (d)

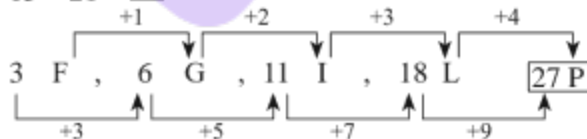


54. (b) 1, 2, 3, 5, 8, 13, 21, ?

This is the fibonacci sequence, where each term is the sum of the two preceding terms:

$$\begin{aligned}
 1 + 2 &= 3 \\
 2 + 3 &= 5 \\
 3 + 5 &= 8 \\
 5 + 8 &= 13 \\
 8 + 13 &= 21 \\
 13 + 21 &= \boxed{34}
 \end{aligned}$$

55. (d)



56. (*) A thermometer is an instrument used to measure temperature.

An odometer is an instrument used to measure distance.

57. (a) 7438 is the right answer

$\rightarrow$ Largest 1-digit even number = 8

$\rightarrow$ Its tens place digit is 5 less than the digit at one place
 $: 8 - 5 = 3$

$\rightarrow$ Its hundred place digit is the ones digit of (758 - 354)

$$= 758 - 354 = 404$$

So, 4 is hundred place digit

$\rightarrow$ Its thousand place digit is the sum of the digits at tens and hundreds place.

Tens = 3, hundreds = 4.

Thousands digit = $3 + 4 = 7$

58. (c) Except Rain, all are water bodies.

59. (d) D E $\rightarrow 4 + 5 \rightarrow 9$

F G $\rightarrow 6 + 7 \rightarrow \boxed{13}$

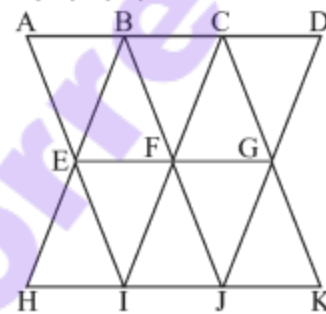
Note:- Alphabetical position value.

60. (a) Logical and meaningful order

Illness, Doctor, consultation, Treatment, Recovery

C, A, D, E, B.

61. (b)



ABE, EBF, BFC, CFG, GCD, EHI, IEF, FIJ, JFG, GJK, ACI, CIK, HBJ, JBD

$\therefore$ There are 14 triangles in the given figure.

62. (a) cba, cbaa, cbbaa, $\boxed{ccbbaa}$, ccbbaaa, cbbbaaaa

The frequency of letter, is increasing by one in each step from right.

63. (b) A particular day is repeat itself after 7 days so, in given question Thursday is on 11th of the given month.

So, $11 + 7 = 18^{\text{th}} = \text{Thursday}$

$18 + 7 = 25^{\text{th}} = \boxed{\text{Thursday}}$

64. (a) $9 - 2 = 7 + 4 = 11$

$15 - 7 = 8 + 5 = \boxed{13}$

$21 - 2 = 19 + 6 = 25$

65. (d) In every next step vertical and horizontal line is increasing by one alternatively.

66. (b) P E D E S T R I A N = number of alphabets $\times 3$

$= 10 \times 3 = 30$

ACCIDENT = $8 \times 3 = 24$

DRIVER = $6 \times 3 = 18$

similarly, TRAFFIC = $7 \times 3 = \boxed{21}$

67. (d) 3 pencils + 1 sharpner = ₹25 ... (i)

2 sharpner + 2 Erasers = ₹14 ... (ii)

3 Erasers = ₹ 9

1 Eraser = $\frac{9}{3} = ₹ 3$.

Put the value of 1 eraser in equation (ii)

$$2 \text{ sharpner} + 2(3) = ₹ 14$$

$$1 \text{ sharpner} = \frac{14 - 6}{2} = 4$$

Put the value of sharpner in equation (i)

$$3 \text{ pencils} + 4 = 25$$

$$1 \text{ pencil} = \frac{25 - 4}{3} = ₹ 7$$

68. (d) There are 3 from  and  2 ways from this figure, so, $3 \times 2 = 6$ ways.

Hence, Mr. X reach home by 6 ways.

69. (a) Anita > Babita > Chetna > Divya > Erric
 $\therefore$ 'Chetna' is in the middle with respect to their ages.

70. (a) B, E, C, A, D

71. (a) Pattern is of prime number :

(2, 3), (3, 5), (5, 7), (7, 11), (11, 13), (13, 17)

72. (b) $P \xrightarrow{-3} M \xrightarrow{-3} J$

$R \xrightarrow{-3} O \xrightarrow{-2} M$

$I \xrightarrow{-3} F \xrightarrow{-3} C$

$N \xrightarrow{-3} K \xrightarrow{-3} H$

73. (b) $3 : (3)^3 + 3 = 30$

$$6 : (6)^3 + 3 = \boxed{219}$$

$$7 : (7)^3 + 3 = 346$$

74. (c)

R	I	G	H	T
+1↓	+1↓	+1↓	+1↓	+1↓
S	J	H	I	U

Similarly,

F	I	N	D	S
+1↓	+1↓	+1↓	+1↓	+1↓
G	J	O	E	T

75. (a) 'N G K', there are two 'G' which are followed by 'K' and preceded by N.

76. (a) The correct answer is **option a) "a, an."** Option (a) *a, an* — "Foolish" starts with a consonant sound, so "a" is correct; "impossible" starts with a vowel sound, so "an" is appropriate. Options (b) and (c) incorrectly use "the" for general nouns and also wrongly uses "an" before "foolish." Option (d) uses "a" before "impossible," which is incorrect due to the vowel sound.

77. (a) The similar word to 'Bleak' is **option (a) "Gloomy."** Both mean something is depressing and lacking in cheer.

78. (c) The correct response is **option (c) "Fortunately."** It expresses a lucky or positive outcome fitting the sentence. The other options don't suit the context. Option (a) 'Accidentally' means by 'mistake.' Option (b) 'Wisely' implies 'good judgment' and Option (d) 'Certainly' means definitely, none of them match the idea of escaping unhurt by chance.

79. (a) The most suitable response is **option (a) "I was annoyed at your behaviour."** It is the proper passive form. Options (b) and (c) use the wrong preposition "on" and incorrect verb form "were," respectively. Option (d) changes the tense and meaning by using the continuous form "was annoying me," which doesn't correctly reflect the original sentence.

80. (d) The correct answer is **option (d) "loudly."** It suitably describes the context of playing music at a high volume.

81. (a) The most appropriate response is **option (a) "Pawan exclaimed that the scene was very beautiful."** It correctly uses past tense and proper word order in indirect speech. Option (b) wrongly keeps the present tense "is." Option (c) has an awkward and an incorrect phrase, "that how." Option (d) has an incorrect word order and misses the conjunction "that," thus making the sentence grammatically incorrect.

82. (c) The correct response is **option (c) "Sunshine as well as snowstorm in short intervals."**

83. (b) **Option (b) "Survival"** is the correct answer. It's not just about **experience** or following a **directive**, but about understanding that respecting nature is essential to stay alive. While climbers may **challenge** the mountain, respect is necessary because the powerful forces can be life-threatening. Hence options (a), (c) and (d) are not appropriate.

84. (b) The **inappropriate reason** for the feeling of exhilaration on reaching a summit is **Option (b) "Opportunity to use sophisticated mountaineering equipment."** While reaching the summit does bring immense joy, it is typically due to emotional and experiential factors like overcoming physical and mental challenges, witnessing breathtaking views, and achieving a goal that once seemed impossible. The use of sophisticated equipment is simply a **means to an end**, not something that climbers celebrate or feel exhilarated about. In contrast, **the options (a, c and d)** 'surviving harsh conditions', 'achieving a great feat' and 'enjoying the panoramic view' are all genuine sources of elation and satisfaction after such a demanding climb.

85. (b) **Option (b) "Formidable"** is the most suitable answer. It means someone or something that is powerful, impressive or difficult to defeat — which fits perfectly when describing a strong opponent in a boxing match. **The other options (a, c and d)** don't work in context: **Treacherous** means dangerously deceptive, **Unanimous** refers to agreement among people and **Unpredictable** means uncertain or hard to foresee which don't describe the opponent's strength as clearly as **formidable** does.

86. (b) **Option (b), "arduous,"** means involving a lot of effort and energy, especially over a period of time. The other options (a, c and d) don't relate to putting in effort at a stretch to do something.

87. (b) The correct sequence is, **option (b) "DBCA."** It makes the sentence logically arranged. **"The performance of our players was rather worse than I expected."** The other options (a, c and d) don't make the sentences logically correct.
88. (c) **"Adopt" is the antonym of 'abandon.'** It means to leave behind or give up, and its most direct opposite is adopt, which means to take in or accept something, such as a child, idea or responsibility. **Option (a) Solicit** means to request something and has no connection to abandonment. **Option (b) Chastise** refers to scolding or punishing, which is unrelated in meaning. **Option (d) Continue** may seem like an opposite in the context of stopping an action, but it doesn't fully capture the reversal of emotionally or physically giving something up the way adopt does. Hence, adopt is the most accurate antonym.
89. (a) **Option (a) Part "B"** contains an error. The error is in **"me that"**—we don't use "that" to introduce indirect questions after "asked"; we use a question word like "what" instead.
90. (b) The right answer is **option, (b)** because in reported speech "will" changes to "would." So, **"would be working"** in indirect speech comes from **"will be working"** in direct speech. We need to change it back to "will be working" when making it direct. **Option (a)** wrongly keeps "would be working" in direct speech, which is not correct. **Options (c) and (d)** change the meaning by using different tenses. That's why **option (b)** is the correct response.
91. (c) **"More"** is the comparative degree of **'most.'** Hence, **option (c)** is the correct answer. The other options (a, b and d) are incorrect. Options like **'many'** and **'much'** are base forms, while **'foremost'** is an adjective meaning **'first in rank'** and not related to degrees of comparison.
92. (b) The appropriate words are **"reed and read."** 'Reed' is (a type of plant stalk often used like a pen in old times). 'Read' is the past tense 'Read' Hence it is the correct answer. The other options (a, c and d) are not used in a correct order and don't fit the context appropriately.
93. (a) The correct idiom is (a) **"a dime a dozen"**, which means something very common or easy to find—so "Mediocre artists like Sheena are found a dime a dozen" means there are many mediocre artists. The other options (b, c and d) are not used appropriately according to the context.
94. (d) The correct question tag is **"aren't we?"** As the main sentence is positive ("We are going..."), so the question tag should be negative and agree with the subject "we." The other options (a, b and c) are incorrect because they either have the wrong polarity or wrong pronoun.
95. (c) **Option (c)** is the right answer. The correctly spelt word is **"Renaissance."** It means a revival of or renewed interest in something. The other options (a, b and d) are spelt incorrectly.
96. (d) **Option (d)** is the most suitable answer. The correct gender change is **"She is a mother and a teacher."** 'Father' changes to 'mother,' and 'teacher' remains the same as it is a common gender noun (applies to both men and women). **Options (a) and (c)** wrongly use **'teacheress,'** which is not a standard word. **Option (b)** keeps "father," which doesn't match the female subject "she."
97. (a) The correct active voice is **option (a) "Who broke this beautiful glass?"** It correctly changes the passive voice into an active one. The other options (b, c and d) are still in passive voice or use incorrect tense.
98. (b) The correct answer is **option (b), "worst."** The sentence suggests a very bad day, so "worst" (superlative degree of adjective) fits best. **Option (a) 'worse'** is comparative, **Option(c) 'best'** is positive, and **Option (d) 'bad'** doesn't fit the structure.
99. (b) The opposite of "permit" is **Option (b) "Prevent."** It is the correct answer. 'Permit' means to allow, so "prevent" (to stop or forbid) is the opposite and the correct answer. **Options (c) and (d)** 'allow' and 'license' are synonyms, and **Option (a)** 'present' is unrelated.
100. (d) The correct conjunction is **"yet."** It is the most appropriate answer. **"Though she worked hard, yet she failed"** expresses contrast properly. **Option (a)** "Although" cannot follow "though" in the same sentence. **Option (b)** "nevertheless" is too formal and **Option (c)** "but" would make it awkward, for this simple sentence.
101. (a) **Crust** the correct answer is **Crust** of the earth. Tremors are caused by the disturbance deep down inside the crust of the earth. Tremors that have occurred in Earth's crust are known as earthquakes.
102. (b) The amount of heat evolved when 1 kg of a fuel is burnt completely is called its **calorific value**. The efficiency of fuel or food mainly depends on the calorific value. If the value is high, its efficiency will also be high. If the value is low, its efficiency would also decrease. Calorific value is directly proportional to its efficiency.
103. (d)
- Gold – Gold is used to make jewellery.
 - Iron – Iron is used to make utensils and machinery
 - Mercury – Mercury is used in thermometers.
 - Copper – Copper is used to make wires to carry electric current.
104. (d) **Non-contact force** the correct answer is the force exerted by a magnet is an example of non-contact force since magnets exert force on another magnet without being in contact. A contact force like muscular and frictional force, is applied by one body on another when they come in physical contact with each other.

105. (a) Mustard is a rabi crop, while paddy, soybean and cotton are examples of kharif crops. The kharif season is from June to October, while the rabi season spans from November to April.
106. (a) Human immunodeficiency virus (HIV) is a virus that attacks the body's immune system. It is transmitted through body fluids such as blood, semen, vaginal fluids and breast milk. HIV does not spread through casual contact like shaking hands.
107. (a) Natural gas is a mixture of hydrocarbons. CNG is primarily composed of methane (CH_4), which is the simplest hydrocarbon. While it can also contain smaller amounts of ethane, propane, and heavier hydrocarbons.
108. (c) Combustion is a chemical process where a substance reacts rapidly with oxygen, releasing heat and light energy. It is a type of oxidation reaction where a fuel is burned in the presence of an oxidizer, usually oxygen.
109. (d) Both plant and animal cells have a cell membrane, nucleus, and cytoplasm. However, cell wall is not present in animal cell. The cell wall is the part of the plant cell that lies outside the plasma membrane and is mainly composed of cellulose, which is a complex substance and provides structural strength to plant.
110. (d) Viviparous animals such as humans, cows, elephants, and whales, give birth to live young. Oviparous animals like chickens, frogs, and the platypus, lay eggs. Ovoviviparous animals such as sharks produce eggs that develop and hatch inside the mother's body, resulting in the birth of live young.
111. (c) Special streamlined shapes are given to objects moving in fluids (like air or water) to **reduce resistance** and **minimise fluid friction**, allowing smoother movement.
112. (d) Minimising the use of automobile horns, planting trees along roads, and installing silencing devices in aircraft engines can help limit noise pollution. Removing trees around residential buildings will not reduce noise pollution.
113. (d) Behind the mirror and of the same size as the object. Plane mirrors always produce virtual images, meaning the light rays do not actually originate from the image location. The image appears to be behind the mirror's surface. Additionally, the image is neither enlarged nor diminished; it's the same size as the object.
114. (a) Alkali metal sodium is considered the most reactive metal with water due to its low ionization energy and high reactivity, leading to a vigorous reaction that produces sodium hydroxide and hydrogen gas. This reaction is highly exothermic, meaning it releases a significant amount of energy.
115. (a) When electric current passes through a conducting solution, bubbles of gas may form, metal may deposit on electrodes, and the solution's color may change. So, statements A, B and D are correct; three statements are correct. Statement C is incorrect because the color of the solution can change due to chemical reactions during the passage of electric current through a conducting solution.
116. (c) Adrenaline also known as epinephrine, is a hormone released by the adrenal glands that helps the body respond to stress when a person is very angry, embarrassed, or worried. It is often referred to as the 'fight or flight' hormone.
117. (a) Vermicomposting is the method of preparing compost with the help of red worms, which decompose organic waste to create nutrient-rich compost known as vermicompost.
118. (d) Biodiversity refers to the variety of organisms existing on earth, their interrelationships and their relationship with the environment. Biology is study of life and living organisms. Biosphere Reserve is a protected area designated to conserve biodiversity.
119. (c) The first Reserve forest in India is Satpura National Park. It is located in the Hoshangabad district of Madhya Pradesh. It is also known as the Satpura Tiger Reserve.
120. (c) During adolescence, increased activity of the sebaceous glands contributes to the development of acne and pimples.
121. (a) The Moon is Earth's natural satellite—it orbits our planet. Cassiopeia is a group of stars forming a recognizable pattern. Halley's Comet is a famous comet that appears about every 76 years. Sirius is the brightest star visible from Earth at night.
122. (c) The Earth's atmosphere, or air, is primarily composed of nitrogen (78%), oxygen (21%), and argon (about 1%). Trace amounts of other gases, like carbon dioxide and water vapor, make up the remaining fraction.
123. (b) Ethane is a greenhouse gas, it is not considered a naturally occurring gas. Ethane is primarily produced through human activities. Naturally occurring greenhouse gases include water vapour, carbon dioxide, methane, nitrous oxide, and ozone. Greenhouse gases that are not naturally occurring include hydro-fluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF_6), which are generated in a variety of industrial processes.
124. (c) *Mycobacterium tuberculosis* is the bacterium responsible for tuberculosis. *Rhizobium* helps in nitrogen fixation. Plasmodium, a protozoan parasite transmitted by *Anopheles* mosquitoes causes malaria and virus causes Acquired immunodeficiency syndrome (AIDS).
125. (d) Microorganisms are classified into four main groups: bacteria, fungi, protozoa, and algae. Bacteria are prokaryotic organisms, while protozoa are unicellular eukaryotes. Fungi are eukaryotic and can be either unicellular (like yeasts) or multicellular

(like mushrooms). Algae are also eukaryotic and they can be unicellular or multicellular and most algae are photosynthetic.

126. (d) Marine-based industries utilize resources from the sea and oceans as their raw materials. They are distinct from other industries like agro-based (using agricultural products), forest-based (using forest products), and mineral-based (using minerals) industries. Examples of marine-based industries include: fishing, aquaculture, seafood processing, fish oil production, marine tourism, and offshore oil and gas extraction.

127. (d) Under Article 17 of the Indian Constitution, eradication of Untouchability has been mentioned. Untouchability is abolished now and its practice in any form is forbidden and an offence in accordance with the law.

128. (a) *Australia with the bauxite production of 11,000 million tons, stands as the largest bauxite producer in the world*

129. (c) **A-I :** In Mughal administration, the "diwan" was a high-ranking official responsible for overseeing revenue collection and financial matters, acting as the chief minister or finance minister.

B-II: The Mir Bakshi was the paymaster-general and the administrator of the army.

C-III: In the Mughal Empire, a faujdar was a military commander, also serving as a local administrative head and responsible for maintaining law and order in his jurisdiction.

D-IV: In the Mughal Empire, a kotwal was a chief police officer or town magistrate, responsible for maintaining law and order, trying criminal cases, and regulating prices.

130. (d) The full form of CITES is Convention on International Trade in Endangered Species of Wild Fauna and Flora. It's an international agreement that regulates trade in wild animals and plants to prevent extinction. CITES was adopted in 1973 and came into force in 1975.

131. (b) Judicial review is the exercise of power by superior courts to test the legality of any governmental/ State action. It is the exertion of the Court's inherent power to determine whether an action is lawful or not and to grant appropriate relief.

132. (c) The Panchayat Raj system established in various states of India has three tiers: at the district level is Jila Parishad; at the block level is Nagar Palika; and Gram panchayat, at the village level. It acts as a cabinet centre of the village.

About Gram Panchayat

- In Indian villages, Gram Panchayat (English: Village council) is a basic village governing institute. In India, the democratic structure is at the grass-roots level. It is a political institute.

About Gram Sabha

- The primary body of the system of Panchayati Raj and by far the largest is Gram Sabha. It is considered as a permanent body. The Panchayat implements supervision, monitoring and development programs under the overarching mandate of the Gram Sabha.
- The difference between Gram Panchayat and Gram Sabha

Area of Difference	Gram Panchayat	Gram Sabha
Defination	Gram Panchayat functions at the village level and is the lower element of the Panchayati Raj.	The legislative body that actually operates at the village level and audit reports and considers the annual budget of the Gram Panchayat is Gram Sabha.
Part of the body	As the Gram panchayat members are elected for a term of five years, it is a temporary body.	Gram Sabha is a permanent body.
Constituents of the body	The Gram Panchayat consists of Sarpanch and ward members.	Every person in the village whose name is registered in the voter list consists of the perspective village's Gram Sabha.
Election of Members	The members of the Gram Sabha directly elects the members of the Gram Panchayat.	The members are not elected in Gram Sabha.

- The Gram Panchayat consists of ward members and Sarpanch. The Gram Sabha consists of every person whose name is registered in the voter list of the perspective village. Hence option (c) is correct.

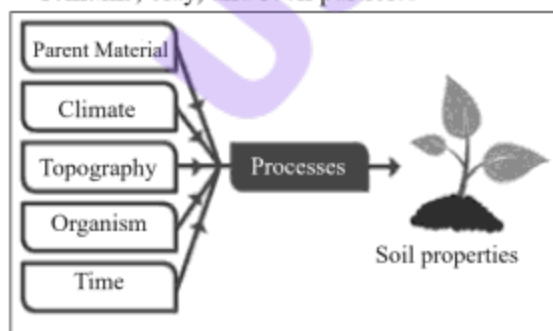
133. (a) Public facilities include water supply, transportation, infrastructure, health, and educational institutions, electricity connections, etc. Many such basic needs, like water supply, clean air, access to education, etc., are declared as the fundamental rights of the people. It is the duty and responsibility of the government to fulfil all these needs and to ensure affordable and accessible public facilities.

134. (b) Muhammad Ibn Battuta (1304-1377 CE) was a Moroccan traveller and writer, who like Hiuen Tsang (602 - 664 CE) and Marco Polo (1254-1324 CE) braved danger and uncertainty to travel and write extensively about new lands.

135. (d) The organs of the government refer to the different branches or institutions that make up the structure of a government and are responsible for carrying out its functions.

According to the **Indian Constitution**, the government of India is divided into **three organs**:

- **Legislature:** Responsible for making laws. (e.g., Parliament).
 - **Executive:** Responsible for implementing and enforcing laws (e.g., President, Prime Minister, Council of Ministers).
 - **Judiciary:** Responsible for interpreting the laws and ensuring justice (e.g., Supreme Court, High Courts).
136. (b) Afforestation is the process of establishing a forest in an area where there was no forest before, or not for a long time, usually longer than fifty years ago. It involves planting trees in an area that was previously devoid of forest cover.
137. (d) Shopping complexes, also known as malls, are multi-storied, air-conditioned buildings that house a variety of shops, restaurants, and entertainment venues in urban areas. They offer convenience, a wide selection of goods, and a social atmosphere, often attracting customers with amenities like parking, food courts, and entertainment options.
138. (b) The Richter scale is a scale of numbers used to tell the power (or magnitude) of earthquakes. Charles Richter developed the Richter Scale in 1935.
139. (a) Municipal corporations in India primarily focus on local governance, infrastructure development, and public services within their designated areas. Their key functions include planning, development, and regulation of urban areas; providing essential services like water supply, sanitation, and solid waste management; and ensuring public safety and health. They do not provide defense services.
140. (c) The Sahara Desert is the world's largest hot desert and the third largest desert behind Antarctica and the Arctic. Located in North Africa, it covers large sections of the continent - covering 9,200,000 square kilometers which is comparable to the area of China or the US.
141. (a) Soil is one of the important components of the sustainability of an ecosystem because it is the vitally important natural medium for the growth of vegetation. It can be defined as, the upper layer of earth in which plants grow, a black or dark brown material typically consisting of a mixture of organic remains, clay, and rock particles



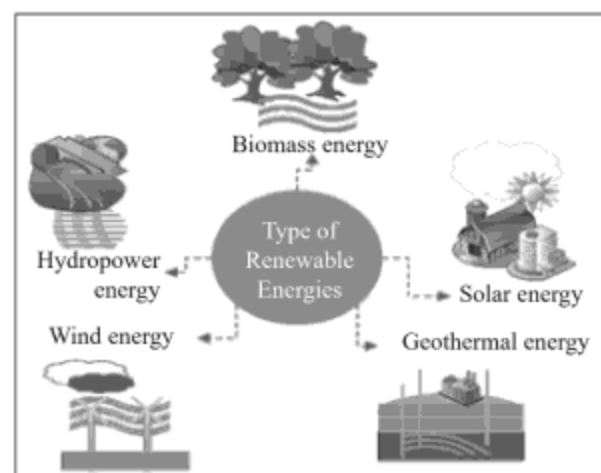
Hence Option (a) is correct.

142. (d) Jute is known as the "Golden fibre" because of its golden color and its importance as a cash crop for many countries. Jute is primarily grown in India, Bangladesh, and China, and is used for making products such as bags, carpets, and ropes.

143. (d) The Dandi March, also known as the Salt March, was a significant act of nonviolent civil disobedience in colonial India led by Mohandas Karamchand Gandhi. It was a part of the wider Civil Disobedience Movement against the British salt tax. Initially, Gandhi planned the march to Dandi with a select group of male followers.
144. (c) The last Mughal Emperor was Bahadur Shah II (also known as Bahadur Shah Zafar). He was the 19th Mughal Emperor, ruling from 1837 to 1857. He is also known for being the figurehead of the 1857 Indian Rebellion (also known as the Sepoy Mutiny).
145. (b) The Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993, prohibits both the employment of manual scavengers and the construction or maintenance of dry latrines. This act seeks to abolish manual scavenging and promote sanitation through the use of water-seal latrines.
146. (c) The difference between the birth rate and the death rate is known as the natural growth rate. It reflects how much a population is increasing or decreasing due to births and deaths alone, without considering migration.

147. (a) **Renewable Resources**

Renewable resources are those that are available in an unlimited quantity and can be used over and over again. Examples of renewable resources include soil, sunlight, forests, wind, and water. These resources are sustainable because they are constantly replenished by natural processes.



148. (b) Aamar Jiban, published in 1876, is the name of Rashsundari Devi's autobiography and is the first autobiography written by an Indian woman and also the first written by any Bengali female.
149. (a) The full form of PIL is Public Interest Litigation. It's a legal mechanism used to protect or enforce public interest, often used to address issues where individuals may not have the means or resources to seek legal remedies themselves.
150. (b) The Indian National Army (INA), also known as the Azad Hind Fauj, was formed in 1942 by Captain Mohan Singh in Southeast Asia during World War II. It was later raised and led by Subhas Chandra Bose in 1943.