

SSC HS Level Exam. (Prelims) Practice Set 2024

Answer with Explanation

- (b) **Prediction (Noun)** means a statement that says what you think will happen (in future).
Regret (Noun) means a feeling of sadness or disappointment for committing some wrong or sin/not doing something which has to be done.
- (c) Worm is the prey of Bird. Similarly, Mouse is the prey of Cat.
- (c) Bread is prepared by baking the dough. Similarly, curd is manufactured by the fermentation of milk.
- (a) Head is a part of human body. Similarly, arc is a part of a circle.
- (b) Second term is the unit of measurement of the first. Ampere is the unit of electric current. Similarly, Kilogram is the unit of weight.
- (c) A's son is the brother of C and D. Therefore, C is the daughter of A. Now, B is the uncle of C.
- (b) Father of Rajiv's father means Grandfather of Rajiv.
Grandfather of Rajiv is the father of Shyama. Therefore, Shyama is Rajiv's father's sister, i.e., Aunt.
- (a)

M	A	M	M	A	L
↓	↓	↓	↓	↓	↓
13	1	13	13	1	12

Position number of each Alphabet.
Therefore,

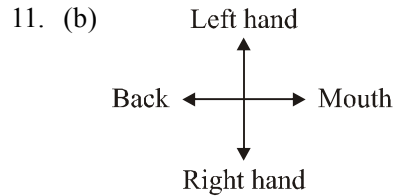
R	E	P	T	I	L	E
↓	↓	↓	↓	↓	↓	↓
18	5	16	20	9	12	5
- (d) $D \Rightarrow 4$, Position Number in English alphabet
 $SHE \Rightarrow 19 + 8 + 5 = 32$
Therefore,

D	I	N	E	S	H
↓	↓	↓	↓	↓	↓
4	9	14	5	19	8

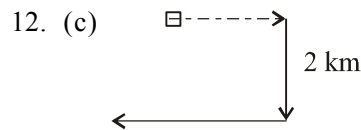
 $= \boxed{59}$
- (d)

+ \Rightarrow ×	× \Rightarrow ÷
- \Rightarrow +	÷ \Rightarrow -

Given expression
 $20 - 5 \div 18 \times (3 + 2) = ?$
After changing the signs
 $? = 20 + 5 - 18 \div (3 \times 2)$
or, $? = 20 + 5 - 18 \div 6$
or, $? = 20 + 5 - 3$
or, $? = 25 - 3 = 22$



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It is clear from the diagram that he was facing towards west.

- (a) 4th = Saturday
Other Saturdays $\Rightarrow 11, 28, 25$
Therefore, 27th \Rightarrow Monday.
- (b) The numbers 2, 4, 5 and 6 cannot be on the face opposite to 3.
The numbers 1, 3, 4 and 6 cannot be on the face opposite to 5.
Therefore, 2 lies opposite 5.
Clearly, 4 lies opposite 6.
- (b) There is no 'N' letter in the given word. Therefore, the word ARAMANA cannot be formed.
DHAR AMSALA \Rightarrow
MASALA
DH ARAM SALA \Rightarrow
RAMA
D HARA M SA LA \Rightarrow
SAHARA
- (d) There is only one 'R' in the given word. Therefore, the word PRIMER cannot be formed.
PR E DI C A MENT \Rightarrow
CEMENT
PR EDI C AMENT \Rightarrow
DEMENTIA
PREDIC A M E N T \Rightarrow
PREDICT
- (b) Suppose, daughter's age is x years.
Therefore, mother's age will be $x + 30$ years.
 $x + x + 30 = 60$
 $\Rightarrow 2x = 60 - 30$
 $\therefore x = \frac{30}{2} = 15$

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The age of mother = $x + 30$
 $= 15 + 30 = 45$ years

18. (c) Amit = 17 years
 Rakesh = $17 - 5 = 12$ years
 \therefore Anil = $12 + 3 = 15$ years

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19. (d) Age of Sami = 12 years
 Age of Vinay = $\frac{12}{3} = 4$ years

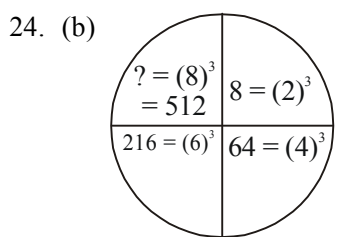
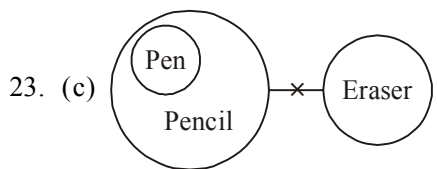
After 4 years
 Age of Sami = 16 years
 Age of Vinay = 8 years

20. (d) $(19)^2 = 361$
 $(17)^2 = 289$
 $(13)^2 = 169$
 $(11)^2 = 121$
 $(7)^2 = 49$
 $(5)^2 = 25$

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21. (d) The sum of two terms gives the next term.
 $1 + 1 = 2$
 $1 + 2 = 3$
 $2 + 3 = 5$
 $3 + 5 = 8$
 $5 + 8 = 13$
 $8 + 13 = 21$

22. (a) GO HOME → TA NA
 NICE LITTLE HOME →
 NA JA PA



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25. (a) The lowermost number in each column is the product of the other three numbers.
1st Column
 $5 \times 8 \times 10 = 400$
2nd Column
 $6 \times 9 \times 7 = 378$
3rd Column
 $5 \times 7 \times ? = 315$

or, $? = \frac{315}{35} = 9$

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26. (c) Kanishka worked for preaching of Buddhism. He spread Buddhism to China, Japan, Central Asia and Tibet; and convened the 4th Buddhist Council at Kundalvana in Kashmir. Due to his works he is often called 'Second Asoka'.
27. (c) Amjad Ali Khan is an Indian classical musician who plays the sarod. Khan was born into a musical family and has performed internationally since the 1960s. He was awarded India's second highest civilian honor, the Padma Vibhushan, in 2001.
28. (d) The Central Legislative Assembly was a legislature for India created by the Government of India Act 1919 from the former Imperial Legislative Council, implementing the Montagu-Chelmsford Reforms. It was formed in 1920.
29. (a) Epicenter is the point on the Earth's surface that is directly above the hypocenter or focus, the point where an earthquake or underground explosion originates. Epicentral distance is used in calculating seismic magnitudes developed by Richter and Gutenberg.
30. (a) HallaTomadottir has been elected as Iceland's seventh President and will take office on 1 August 2024, succeeding GuanaJohannesson.
31. (a) Gross value added at factor cost (formerly GDP at factor cost) is derived as the sum of the value added in the agriculture, industry and services sectors. If the value added of these sectors is calculated at purchaser values, gross value added at factor cost is derived by subtracting net product taxes from GDP. GDP at Factor Cost is called Real GDP. This is because it takes into account various other factors which give a clearer picture of the GDP.
32. (d) Khajuraho was the cultural capital of Chandel Rajputs, a Hindu dynasty that ruled this part of India from the 10-12th centuries. The political capital of the Chandelas was Kalinjar. The Khajuraho temples were built over a span of 200 years, from 950 to 1150. The Chandela capital was moved to Mahoba after this time, but Khajuraho continued to flourish for some time. Khajuraho has no forts because the Chandel Kings never lived in their cultural capital.
33. (c) Quo warranto (Medieval Latin for "by what warrant?") is a prerogative writ requiring the person to whom it is directed to show what

authority they have for exercising some right or power (or “franchise”) they claim to hold. It is a legal proceeding during which an individual’s right to hold an office or governmental privilege is challenged.

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34. (c) The troposphere is the lowest layer of the Earth’s atmosphere. The air is very well mixed and the temperature decreases with altitude.
35. (a) Vardhamana Mahavira was also known as ‘Jina’ which literally means the ‘conqueror’. Jina refers to the one who has conquered love and hate, pleasure and pain, attachment and aversion, and has thereby freed ‘his’ soul from the karmas obscuring knowledge, perception, truth, and ability. It was from this word that Jainism was derived.
36. (b) NASA and the European Space Agency (ESA) are collaborating to create a standardized lunar time system for the Artemis program, which aims to return humans to the moon. This initiative addresses the need for unified timekeeping to coordinate international and private lunar missions. With upcoming missions from China, India, and private companies, a common lunar time system is essential for successful operation and coordination.
37. (b) A fountain pen is a nib pen that, unlike its predecessor the dip pen, contains an internal reservoir of water-based liquid ink. The pen draws ink from the reservoir through a feed to the nib and deposits it on paper via a combination of gravity and capillary action. Capillary action, or capillarity, is the ability of a liquid to flow in narrow spaces without the assistance of, and in opposition to external forces like gravity. The effect can be seen in the drawing up of liquids between the hairs of a paint-brush, in a thin tube, in porous materials such as paper, in some non-porous materials such as liquefied carbon fiber, or in a cell.
38. (b) The concept of dual nationality means that a person is a citizen of two countries at the same time. Each country has its own citizenship laws based on its own. Such type of nationality is very common in federal states such as the USA.
39. (c) The Chalukya dynasty was an Indian royal dynasty that ruled large parts of southern and central India between the 6th and the 12th centuries. During this period, they ruled as three related yet individual dynasties: “Badami Chalukyas”, ruled from Vatapi (modern Badami)
40. (b) Shivasamudram holds the distinction of being the site of India’s first hydro-electric power station built in 1902. It was set up mainly to supply power to the Kolar goldmines 147 km away, making the 78 kv transmission line the longest in the world at the time. In fact, when the Mettur dam in Tamil Nadu was being constructed in the 1930’s, the power was supplied from Shivasamudram.
41. (b) An emulsion is a mixture of two or more liquids that are normally immiscible (nonmixable or unblendable). Emulsions are part of a more general class of two-phase systems of matter called colloids. Although the terms colloid and emulsion are sometimes used interchangeably, emulsion should be used when both the dispersed and the continuous phase are liquids. In an emulsion, one liquid (the dispersed phase) is dispersed in the other (the continuous phase). Examples of emulsions include vinaigrettes, milk, mayonnaise, and some cutting fluids for metal working. The photo-sensitive side of photographic film is also an example of a colloid. The word “emulsion” comes from the Latin word for “to milk”, as milk is (among other things) an emulsion of milk fat and water. Two liquids can form different types of emulsions. As an example, oil and water can form, firstly, an oil-in-water emulsion, where the oil is the dispersed phase, and water is the dispersion medium.
42. (a) All goods which are meant either (i) for consumption by consumers or (ii) for investment by firms are called final goods. They are finished goods, meant for final use. These are neither resold nor do they enter into further stages of production. Cars, television sets, cloth, food, machinery, equipments etc. are final goods.
43. (d) Claudia Shienbaum has been elected as Mexico’s first woman president, marking a historic milestone in its 200-year history. With a decisive lead confirmed by the election commission, she received congratulations from her mentor, President Andrés Manuel López Obrador. The elections on June 2, 2024, also included over 20,000 political positions. Shienbaum will be sworn in on October 1, 2024.

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44. (d) Fiber glass is a fiber reinforced polymer made of a plastic matrix reinforced by fine fibers of glass. It is also known as GFK. Fiber glass is a lightweight, extremely strong, and robust material. Although strength properties are somewhat lower than carbon fiber and it is less stiff, the material is typically far less brittle, and the raw materials are much less expensive. Its bulk strength and weight properties are also very favorable when compared to metals, and it can be easily formed using molding processes. Common uses of fiberglass include high performance aircrafts (gliders), boats, automobiles, baths, hot tubs, water tanks, roofing, pipes, cladding, casts, Surfboards, and external door skins. অ্যাচিভার্স
45. (a) The Indian Universities Act was passed in 1904 under the viceroyalty of Lord Curzon. Curzon had appointed the Thomas Raleigh Commission in 1902 to enquire into the condition and prospects of universities in India and to recommend proposals for improving their constitution and working. অ্যাচিভার্স
46. (b) Bihu dance is associated with the Bihu, a harvest festival of Assam. This joyous dance is performed by both young men and women during the Spring festival “Bohag Bihu” or Rongali Bihu celebrated in the middle of April. This is also the beginning of the agricultural season. অ্যাচিভার্স
47. (b) Vitamin A is found naturally in many foods: liver (beef, pork, chicken, turkey, fish) (6500 i_g 722%), including cod liver oil; dandelion greens (5588 IU 112%); carrot (835 i_g 93%); broccoli leaf (800 i_g 89%); spinach (469 i_g 52%); collard greens (333 i_g 37%), etc. Brewer’s yeast is often taken as a powder, or as tablets or capsules. High-quality brewer’s yeast powder or flakes contain as much as 60 mcg of chromium per tablespoon (15 grams). The B-complex vitamins in brewers yeast include B₁ (thiamine), B₂ (riboflavin), B₃ (niacin), B₅ (pantothenic acid), B₆ (pyridoxine), B₉ (folic acid), and H or B₇ (biotin). These vitamins help break down carbohydrates, fats, and proteins, which provide the body with energy. Wheat germ oil is extracted from the germ of the wheat kernel, which makes up only 2.5% by weight of the kernel. Wheat germ oil is very high in vitamin E, and has the highest content of vitamin E of any food that has not undergone prior preparation or vitamin fortification. Raw cabbage is a good source of vitamins, minerals, and fiber that help protect our body. All cabbage types provide vitamin C, folic acid, potassium, manganese, magnesium, riboflavin and thiamin. অ্যাচিভার্স
48. (d) IIT Kanpur, in collaboration with DRDO, established a DRDO-Industry-Academia Centre of Excellence (DIA CoE) for interdisciplinary research in next-gen defence technologies. This initiative aligns with DRDO’s strategy of setting up DIA CoEs in key academic institutions to foster technology development through experienced faculty, bright scholars, and DRDO scientists, creating a robust ecosystem for defence innovation.
49. (a) The entire Ganga basin system effectively drains eight states.
50. (b) In economics and political science, fiscal policy is the use of government revenue collection (taxation) and expenditure (spending) to influence the economy. The two main instruments of fiscal policy are government taxation and changes in the level and composition of taxation and government spending.
51. (d)
$$\frac{13}{4} \times \frac{2}{3} - \left(\frac{9}{4} - \frac{5}{3} \right) \times \frac{3}{4}$$

$$= \frac{13}{6} - \left(\frac{27 - 20}{12} \right) \times \frac{3}{4}$$

$$= \frac{13}{6} - \frac{7}{12} \times \frac{3}{4} = \frac{13}{6} - \frac{7}{16}$$

$$= \frac{104 - 21}{48} = \frac{83}{48}$$
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52. (c) Here, 357 is exactly divisible by 17.
∴ Required remainder = Remainder obtained on dividing 39 by 17 = 5
53. (b) Let the number be x.
According to the question,
 $x + 25 = 3x - 3$
 $\Rightarrow 3x - x = 25 + 3$ অ্যাচিভার্স
 $\Rightarrow 2x = 28 \Rightarrow x = 14$
54. (b) LCM of 3, 5, 6, 8, 10 and 12 = 120
∴ Required number
= $120x + 2$, which is exactly divisible by 13.
 $120x + 2 = 13 \times 9x + 3x + 2$
Clearly $3x + 2$ should be divisible by 13.
For $x = 8$, $3x + 2$ is divisible by 13.
∴ Required number
= $120x + 2 = 120 \times 8 + 2$
= $960 + 2 = 962$
55. (b) LCM of 20, 30 and 40 minutes = 120 minutes

Hence, the bells will toll together again after 2 hours i.e. at 1 p.m.

$$56. (c) \text{ First part} = \frac{4\frac{1}{7} - 2\frac{1}{7}}{3\frac{1}{2} + 1\frac{1}{7}}$$

$$= \frac{\frac{29}{7} - \frac{15}{7}}{\frac{7}{2} + \frac{8}{7}} = \frac{\frac{14}{7}}{\frac{49+16}{14}}$$

$$= \frac{2}{\frac{65}{14}} = \frac{2 \times 14}{65} = \frac{28}{65}$$

$$\text{Second part} = \frac{1}{2 + \frac{1}{2 + \frac{1}{\frac{25-1}{5}}}}$$

$$= \frac{1}{2 + \frac{1}{2 + \frac{1}{\frac{48+5}{24}}}}$$

$$= \frac{1}{2 + \frac{24}{53}} = \frac{1}{\frac{106+24}{53}} = \frac{53}{130}$$

$$\therefore \text{Expression} = \frac{28}{65} \div \frac{53}{130}$$

$$= \frac{28}{65} \times \frac{130}{53} = \frac{56}{53}$$

$$57. (d) 3.\overline{36} - 2.\overline{05} + 1.\overline{33}$$

$$= 3\frac{36}{99} - 2\frac{05}{99} + 1\frac{33}{99}$$

$$= 3 + \frac{36}{99} - 2 - \frac{5}{99} + 1 + \frac{33}{99}$$

$$= (3 - 2 + 1) + \left(\frac{36}{99} - \frac{5}{99} + \frac{33}{99} \right)$$

$$= 2 + \left(\frac{36 - 5 + 33}{99} \right)$$

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$$= 2 + \frac{64}{99} = 2\frac{64}{99} = 2.\overline{64}$$

$$58. (d) \text{ Expression} = \frac{20 \div 5}{9 + 3 \div 3} = \frac{4}{10} = \frac{2}{5}$$

$$59. (c) M + T + W + TH = 4 \times 37 = 148^\circ\text{C} \dots\dots (i)$$

$$TH + F + S + S = 4 \times 41 = 164^\circ\text{C} \dots\dots (ii)$$

$$M + T + \dots + S + S = 7 \times 39 = 273^\circ\text{C} \dots\dots (iii)$$

\therefore The temperature of the fourth day
 $= 148 + 164 - 273 = 39^\circ\text{C}$

$$60. (b) x + x + 1 + x + 2 + x + 3 + x + 4 + x + 5 = 6K$$

$$\Rightarrow 6x + 15 = 6K$$

$$\Rightarrow x + \frac{15}{6} = K$$

$$\Rightarrow x + \frac{5}{2} = K \dots\dots (i)$$

Again,

$$\frac{x + (x+1) + \dots + (x+6) + (x+7)}{8}$$

$$= \frac{8x}{8} + \frac{28}{8} = x + \frac{7}{2} \dots\dots (ii)$$

$$\text{Now, } x + \frac{7}{2} - x - \frac{5}{2} = 1$$

$$61. (c) A : B = 7 : 9$$

$$B : C = 3 : 5$$

$$\therefore A : B : C$$

$$= 7 \times 3 : 9 \times 3 : 9 \times 5$$

$$= 7 : 9 : 15$$

$$62. (b) \text{ According to the question,}$$

$$\frac{x + \frac{1}{x}}{x - \frac{1}{x}} = \frac{5}{3}$$

$$\Rightarrow 5x - \frac{5}{x} = 3x + \frac{3}{x}$$

$$\Rightarrow 5x - 3x = \frac{5}{x} + \frac{3}{x}$$

$$\Rightarrow 2x = \frac{8}{x}$$

$$\Rightarrow x^2 = \frac{8}{2} = 4$$

$$\Rightarrow x = \sqrt{4} = \pm 2$$

$$63. (a) \text{ Let the whole number be } x.$$

According to the question,

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51% of x = 714

$$\Rightarrow \frac{x \times 51}{100} = 714$$

$$\Rightarrow x = \frac{714 \times 100}{51} = 1400$$

∴ 25% of 1400

$$= \frac{1400 \times 25}{100} = 350$$

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64. (c) Required percentage

$$= \frac{x}{100-x} \times 100$$

$$= \frac{40}{60} \times 100 = \frac{200}{3}$$

= 66.66%

65. (c) a + b + c = 0

$$\Rightarrow b + c = -a$$

On squaring both sides,

$$\Rightarrow (b + c)^2 = a^2$$

$$\Rightarrow b^2 + c^2 + 2bc = a^2$$

$$\Rightarrow a^2 + b^2 + c^2 + 2bc = 2a^2$$

$$\Rightarrow a^2 + b^2 + c^2 = 2a^2 - 2bc$$

$$= 2(a^2 - bc)$$

$$\therefore \frac{a^2 + b^2 + c^2}{a^2 - bc} = \frac{2(a^2 - bc)}{a^2 - bc} = 2$$

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66. (d) $\frac{5x}{2x^2 + 5x + 1} = \frac{1}{3}$

Dividing Numerator and Denominator by x,

$$\frac{5}{2x + 5 + \frac{1}{x}} = \frac{1}{3}$$

On dividing N^r and D^r by 2,

$$\frac{\frac{5}{2}}{x + \frac{5}{2} + \frac{1}{2x}} = \frac{1}{3}$$

$$\Rightarrow \left(x + \frac{1}{2x}\right) + \frac{5}{2} = \frac{15}{2}$$

$$\Rightarrow x + \frac{1}{2x} = \frac{15}{2} - \frac{5}{2} = \frac{10}{2} = 5$$

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67. (d) $\sin \theta = \frac{1}{2} = \sin 30^\circ = \frac{\pi}{6}$

$$\Rightarrow \theta = \frac{\pi}{6}$$

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[∵ 180° = π radian]

$$\therefore \theta + \phi = \frac{\pi}{2} \Rightarrow \frac{\pi}{6} + \phi = \frac{\pi}{2}$$

$$\Rightarrow \phi - \frac{\pi}{2} \Rightarrow \frac{\pi}{6} = \frac{3\pi - \pi}{6}$$

$$= \frac{2\pi}{6} = \frac{\pi}{3}$$

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$$\therefore \sin \phi = \sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}$$

68. (b) $\frac{\sec \theta + \tan \theta}{\sec \theta - \tan \theta} = 2 \frac{51}{79}$

$$= \frac{158 + 51}{79} = \frac{209}{79}$$

By componendo and dividendo,

$$\frac{\sec \theta + \tan \theta + \sec \theta - \tan \theta}{\sec \theta + \tan \theta - \sec \theta + \tan \theta}$$

$$= \frac{209 + 79}{209 - 79}$$

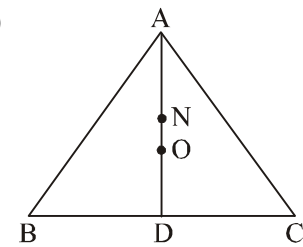
$$\Rightarrow \frac{2 \sec \theta}{2 \tan \theta} = \frac{288}{130}$$

$$\Rightarrow \frac{\sec \theta}{\tan \theta} = \frac{144}{65}$$

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$$\therefore \sin \theta = \frac{\tan \theta}{\sec \theta} = \frac{65}{144}$$

69. (a)



AD = 27 cm

Centroid = O

$$\therefore OD = \frac{1}{3} AD$$

$$= \frac{1}{3} \times 27 = 9 \text{ cm}$$

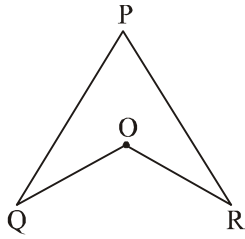
ND = 12 cm

$$\therefore ON = DN - OD$$

$$= 12 - 9 = 3 \text{ cm}$$

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70. (d)



$$\begin{aligned} \angle QPR &= 50^\circ \\ \therefore \angle PQR + \angle PRQ &= 180^\circ - 50^\circ = 130^\circ \\ \therefore \frac{1}{2}\angle PQR + \frac{1}{2}\angle PRQ &= 65^\circ \end{aligned}$$

The point of intersection of internal bisectors of angles is in-centre.

$$\therefore \angle OQR = \frac{1}{2}\angle PQR;$$

$$\angle ORQ = \frac{1}{2}\angle PRQ$$

In ΔOQR ,
 $\angle OQR + \angle QOR + \angle ORQ = 180^\circ$
 $\Rightarrow \angle QOR = 180^\circ - 65^\circ = 115^\circ$

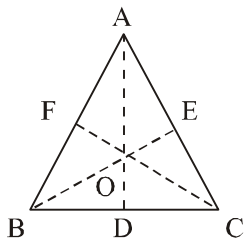
71. (a) $\therefore \pi r^2 = 2464 \text{ sq.m.}$

$$\Rightarrow r^2 = \frac{2464 \times 7}{22} = 784$$

$$\Rightarrow r = 28 \text{ m.}$$

$$\therefore \text{Required distance} = 2r = 2 \times 28 = 56 \text{ metres}$$

72. (a)



Let the side of the equilateral triangle be $x \text{ cm.}$

$$\therefore \Delta AOB + \Delta BOC + \Delta COA = \Delta ABC$$

$$\Rightarrow \frac{1}{2}x \times 3 + \frac{1}{2}x \times x \times 4 + \frac{1}{2}x \times x \times 5$$

$$= \frac{\sqrt{3}}{4}x^2$$

$$\Rightarrow 6 = \frac{\sqrt{3}}{4}x \Rightarrow x = \frac{24}{\sqrt{3}} = 8\sqrt{3}$$

$$\therefore \text{Area of } \Delta ABC = \frac{\sqrt{3}}{4} \times \text{side}^2$$

$$= \frac{\sqrt{3}}{4} \times 8\sqrt{3} \times 8\sqrt{3} = 48\sqrt{3} \text{ sq. cm.}$$

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73. (d) $x = 997$

$$y = 998$$

$$z = 999$$

$$\therefore x - y = 997 - 998 = -1$$

$$y - z = 998 - 999 = -1$$

$$z - x = 999 - 997 = 2$$

$$\therefore x^2 + y^2 + z^2 - xy - yz - zx$$

$$= \frac{1}{2}(2x^2 + 2y^2 + 2z^2 - 2xy - 2yz - 2zx)$$

$$= \frac{1}{2}(x^2 + y^2 - 2xy + y^2 + z^2 -$$

$$2yz + x^2 + z^2 - 2zx)$$

$$= \frac{1}{2}[(x - y)^2 + (y - z)^2 + (z - x)^2]$$

$$= \frac{1}{2}[(-1)^2 + (-1)^2 + (2)^2]$$

$$= \frac{1}{2}(1 + 1 + 4) = \frac{1}{2} \times 6 = 3$$

74. (d) $x + \frac{1}{x} = \sqrt{3}$

On cubing both sides,

$$x^3 + \frac{1}{x^3} + 3\left(x + \frac{1}{x}\right) = 3\sqrt{3}$$

$$\Rightarrow x^3 + \frac{1}{x^3} + 3\sqrt{3} = 3\sqrt{3}$$

$$\Rightarrow x^3 + \frac{1}{x^3} = 0$$

$$\therefore \text{Expression} = x^{30} + x^{24} + x^{18} + x^{12} + x^6 + 1$$

$$= x^{24}(x^6 + 1) + x^{12}(x^6 + 1) + 1(x^6 + 1)$$

$$= (x^6 + 1)(x^{24} + x^{12} + 1)$$

$$= x^3 \left(x^3 + \frac{1}{x^3}\right) (x^{24} + x^{12} + 1) = 0$$

75. (c) $x + \frac{1}{x} = \sqrt{3}$

On cubing both sides,

$$\left(x + \frac{1}{x}\right)^3 = (\sqrt{3})^3 = 3\sqrt{3}$$

$$\Rightarrow x^3 + \frac{1}{x^3} + 3\left(x + \frac{1}{x}\right) = 3\sqrt{3}$$

$$\Rightarrow x^3 + \frac{1}{x^3} + 3\sqrt{3} = 3\sqrt{3}$$

$$\Rightarrow x^3 + \frac{1}{x^3} = 3\sqrt{3} - 3\sqrt{3} = 0$$

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76. (b) **Reporting Verb (assured)** is in **Past Tense**. Hence, **that he would return (Past)** is the right usage. অ্যাচিভর্স
77. (b) **Belong** is a **Stative Verb**. Hence, **Present Simple** i.e. **these days belongs** is the right usage.
It is not be used in **Progressive Tenses**.
78. (c) Here, **Past Simple** should be used.
Look at the sentences :
- I reached two hours **after** he **had come**.
 - I had reached two hours **before** he **came**. Hence, **he came** is the right usage.
79. (c) Here, V_2 i.e. **retired** is the right option.
80. (d) **at the top of his voice** : loudly.
Here, **at the top of** is the right option.
81. (d) Here, **the art of** is the right option.
82. (a) Here, **ship** is a **Singular Subject**. অ্যাচিভর্স
Hence, **has (Singular Verb)** is the right option.
83. (b) Here, **Reporting Verb (asked)** is in **Past Tense**. Hence, **might (V^2)** is the right option.
84. (d) **shocked**
scandalize (V.) : to do something that people find very shocking; outrage; horrify; disgust.
scandalized (V.) : shocked
85. (a) **maze**
labyrinth (N.) : a complicated series of paths which it is difficult to find your way through; maze.
86. (a) **magnify (V.)** অ্যাচিভর্স
exaggerate : to make something seem larger, better, worse etc. than it really is; magnify.
87. (b) **a damp squib** : an event that is disappointing because it is not so exciting or impressive as expected অ্যাচিভর্স
- The party turned out to be a bit of **a damp squib**. The best option is **a disappointing result**.
88. (a) **in cold blood** : acting in a way that is deliberately cruel; with no pity
- The killer walked up and shot the woman **in cold blood**. The best option is **angrily**.
89. (b) **to add fuel to the fire** : a thing that is said or done that makes something, especially an argument, continue or get worse
- Shouting at a crying child just **adds fuel to the fire**. The best option is **to cause additional anger**.
90. (b) **wear and tear** : the damage to objects, furniture, property, etc. that is the result of normal use
- This sofa shows a lot of **wear and tear**, we should replace it. অ্যাচিভর্স
The best option is **damage**.
91. (a) **defiant (Adjective)** : openly refusing to obey somebody/something.
servile (Adjective) : Wanting too much to please somebody and obey them, fawning.
92. (b) **inept (Adjective)** : acting or done with no skill.
adept (Adjective) : good at doing something that is quite difficult; skilful.
93. (b) unknown
famous (Adjective) : known about by many people. অ্যাচিভর্স
94. (b) **idiosyncrasy**
idiosyncrasy (N.) : a person's particular way of behaving, thinking, etc., especially when it is unusual
trait (N.) : a particular quality in your personality
idiolect (N.) : the way that a particular person uses language
talent (N.) : a natural ability to do something well
95. (a) **mercenary**
mercenary (N.) : a soldier who will fight for any country/group that offers payment
recruit (N.) : a recently enlisted soldier/member
hoodlum (N.) : an aggressive and violent young criminal.
96. (a) Not
97. (d) confident অ্যাচিভর্স
98. (c) should
99. (a) **Ominous (Adjective)** = giving the worrying impression that something bad is going to happen.
100. (b) **will opt**