

## SSC CGL (Tier-I) Exam. Practice Set

### Answers with Explanation

1. (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.

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2. (c) **Adversary** means a person that somebody is opposed to and competing with in an argument or a battle; opponent.

**Enemy** means a person who hates somebody or who acts or speaks against somebody/something.

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**Adversity** means a difficult or unpleasant situation.

**Difficulty** means a problem, a thing or situation that causes problems.

3. (c) Worm is the prey of Bird. Similarly, Mouse is the prey of Cat.
4. (d) Cytology is that branch of Biology which deals with cells and their functions. Similarly, Ornithology is the scientific study of birds.
5. (c) Both bird and aeroplane fly in the air. Similarly, fish and boat swim/move in the water.
6. (d) C and D are brothers. C is the brother of A. A and B are married couple. Therefore, D is brother-in-law of B.
7. (c) The only son of grandfather (paternal) of Vikas means father of Vikas.

Therefore, the girl is sister of Vikas.

8. (a) Only son of Rakesh's grandfather means father of Rakesh.

The daughter of Rakesh's father would be sister of Rakesh.

9. (b) 

$\times \Rightarrow +$	$+ \Rightarrow \div$
$- \Rightarrow \times$	$\div \Rightarrow -$

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$$6 \times 4 - 5 + 2 \div 1 = ?$$

$$\Rightarrow ? = 6 + 4 \times 5 \div 2 - 1$$

$$\Rightarrow ? = 6 + 10 - 1 = 15$$

10. (c) 

$+ \Rightarrow \div$	$\times \Rightarrow +$
$- \Rightarrow \times$	$\div \Rightarrow -$

$$25 \times 3 - 7 \div 8 + 12 = ?$$

$$\Rightarrow 25 + 3 \times 7 - 8 \div 12$$

$$\Rightarrow 25 + 3 \times 7 - \frac{8}{12}$$

$$\Rightarrow 25 + 21 - \frac{2}{3}$$

$$\Rightarrow 46 - \frac{2}{3}$$

$$\Rightarrow \frac{138 - 2}{3}$$

$$\Rightarrow \frac{136}{3} = 45\frac{1}{3}$$

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11. (b) 

$+\Rightarrow -$	$-\Rightarrow \times$
$\div \Rightarrow +$	$\times \Rightarrow \div$

$$15 - 3 + 10 \times 5 \div 5$$

$$\Rightarrow 15 \times 3 - 10 \div 5 + 5$$

$$\Rightarrow 45 - 2 + 5 = \boxed{48}$$

12. (d)  $42 - 2 = 40$

and,  $\frac{40}{2} = 20$

Similarly,

$$64 - 2 = 62$$

and,  $\frac{62}{2} = 31$

13. (a)  $\frac{6 \times 6}{2} = 18$

Similarly,

$$\frac{4 \times 4}{2} = 8$$

14. (a)  $8 = 2 \times 4$

Similarly,

$$? = 3 \times 2 = 6$$

15. (d) There is only one 'G' in the given word. Therefore, the word DIGGING cannot be formed.

$$B O O K B \boxed{INDING} \Rightarrow DINING$$

$$\boxed{BO} O K B I \boxed{NDING} \Rightarrow BONDING$$

$$B \boxed{O} O K B I N \boxed{DING} \Rightarrow DOING$$

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16. (c) There is no 'T' letter in the given word. Therefore, the word PRESIDENT cannot be formed.

J U RI S P R U D E

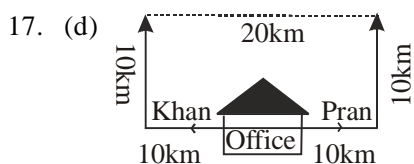
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NCE ⇒ PRINCE

J U R I S PRU D EN C E ⇒ PRUNE

J U R I S PRUDE N CE

⇒ PREJUDICE



It is clear from the diagram that they are at a distance of 20 km.

18. (c) Third Friday = 16th  
 ∴ First Friday = 2nd  
 First Tuesday = 6th  
 ∴ Fourth Tuesday = 27th

19. (b) I reached at  
 08 : 30 – 00 : 15  
 = 08 : 15 hours  
 I was 40 – 30  
 = 10 minutes late  
 Therefore, scheduled time  
 = 08 : 15 – 00 : 10  
 = 08 : 05 hours.

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20. (b) The given number series is based on the following pattern :  
 2 + 4 = 6  
 6 + 6 = 12  
 12 + 8 = 20  
 20 + 10 = 30  
 30 + 12 = 42

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21. (a) The given number series is based on the following pattern :  
 6 × 1 + 1 = 7  
 7 × 2 + 1 = 15  
 15 × 3 + 1 = 46  
 46 × 4 + 1 = 185  
 185 × 5 + 1 = 926

22. (b) 2 8 9 6 4 9  
 ↓ ↓ ↓ ↓ ↓ ↓  
 S R B V E B

23. (b) First Premise is Particular Affirmative (I-type).

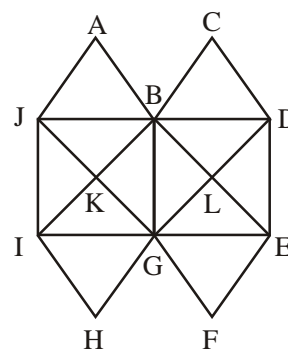
Second Premise is Universal Negative (E-type).  
 Some skirts are benches.



No bench is a table.  
 I + E ⇒ O-type of Conclusion  
 "Some skirts are not tables."  
 Conclusion II is Converse of the first Premise.

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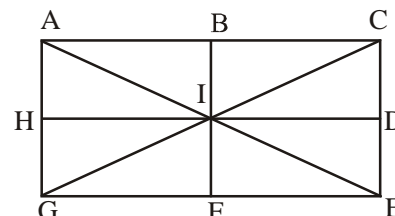
24. (c)



The triangles are :  
 Δ AJB; Δ KJI; Δ KIG; Δ KGB;  
 Δ KBJ; Δ BJI; Δ JIG; Δ BGI;  
 Δ JBG; Δ HIG; Δ CBD; Δ LBG;  
 Δ LGE; Δ LED; Δ LDB; Δ DBG;  
 Δ BGE; Δ DEG; Δ BDE; Δ FGE;  
 Δ GDJ; Δ BIE;

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25. (c)



The rectangles are :  
 ABIH; ABFG; ACDH; HIFG;  
 HDEG; IDFE; BCDI; BCEF;  
 ACEG

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26. (a) "Satyameva Jayate" (Truth Alone Triumphs) is a mantra from the ancient Indian scripture Mundaka Upanishad. Upon independence of India, it was adopted as the national motto of India. It is inscribed in Devanagari script at the base of the national emblem. The emblem and words 'Satyameva Jayate' are inscribed on one side of all Indian currency. The emblem is an adaptation of the Lion Capital of Asoka which was erected around 250 BC at Sarnath, near Varanasi in the north Indian state of Uttar Pradesh.

27. (a) Papeti is one of the auspicious days of Parsi Calendar. It stands for the new start and new beginning. It comes in the month of Navroj by the Parsis. On Pateti day, the Parsis visit the fire temple. ଆଚିଓର୍ଣ୍ଣ
28. (d) Indian Penal Code is the main criminal code of India. It is a comprehensive code, intended to cover all substantive aspects of criminal law. It was drafted in 1860 and came into force in colonial India during the British Raj in 1862. It has since been amended several times and is now supplemented by other criminal provisions. ଆଚିଓର୍ଣ୍ଣ
29. (c) A supernova is a stellar explosion that is more energetic than a nova. During this short interval a supernova can radiate as much energy as the Sun is expected to emit over its entire life span. The explosion expels much or all of a star's material at a velocity of up to 30,000 km/s (10% of the speed of light).
30. (b) The Union Cabinet has approved to dissolve the Puducherry Assembly and impose President's rule in the Union Territory, following the resignation of the Chief Minister, V Narayanasamy, whose government lost majority power in the assembly. ଆଚିଓର୍ଣ୍ଣ
31. (d) In India, there are some regulations and restrictions with regard to establishing industries in certain categories. This is done by making it mandatory to obtain licenses before setting up such an industry. The Licence Raj which continued till 1991 (liberalization was introduced) was a result of India's decision to have a planned economy where all aspects of the economy are controlled by the state and licences are given to a select few. Up to 80 government agencies had to be satisfied before private companies could produce something and, if granted, the government would regulate production. The Industrial Policy Resolution 1956 aimed at the removal of regional disparities through development of regions with low industrial base. The Indian economy was then guided by the socialistic model of planned development rather than being guided by profit.
32. (d) The Rig Veda mentions such artisans as the carpenter, the chariot-maker, the weaver, the leather worker, the potter, etc. This indicates that they practiced all these crafts. The term, ayas used for copper or bronze shows that metal working was known. Gold was known as 'hiranya'.
33. (b) B. R. Ambedkar was the chief architect of the Indian Constitution. Granville Austin has described the Indian Constitution drafted by Ambedkar as 'first and foremost a social document'. ... 'The majority of India's constitutional provisions are either directly arrived at furthering the aim of social revolution or attempt to foster this revolution by establishing conditions necessary for its achievement.' ଆଚିଓର୍ଣ୍ଣ
34. (a) The Deccan Traps are a large igneous province located on the Deccan Plateau of west-central India (between 17°–24°N, 73°–74°E) and one of the largest volcanic features on Earth. They consist of multiple layers of solidified flood basalt that together are more than 2,000 m (6,562 ft) thick and cover an area of 500,000 km<sup>2</sup> (193,051 sq mi) and a volume of 512,000 km<sup>3</sup> (123,000 cu mi). The term "trap", used in geology for such rock formations, is derived from the Swedish word for stairs and refers to the steplike hills forming the landscape of the region.
35. (c) Pali is a Middle Indo-Aryan language (of Prakrit group) of the Indian subcontinent. It is best known as the language of many of the earliest extant Buddhist scriptures, as collected in the Pali Canon or Tipitaka, and as the liturgical language of Theravada Buddhism. Pali is a literary language of the Prakrit language family and was first written down in Sri Lanka in the first century BCE. ଆଚିଓର୍ଣ୍ଣ
36. (d) Fullerton India Credit Company has appointed Shantanu Mitra as the new CEO and Managing Director.
37. (d) Holography is a technique which enables three dimensional images to be made. It involves the use of a laser, interference, diffraction, light intensity recording and suitable illumination of the recording. The image changes as the position and orientation of the viewing system changes in exactly the same way as if the object were still present, thus making the image appear three-dimensional. The holographic recording itself is not an image; it consists of an apparently random structure of varying intensity, density or profile. Holography is a technique that enables a light field, which is generally the product of

- a light source scattered off objects, to be recorded and later reconstructed when the original light field is no longer present, due to the absence of the original objects. *অ্যাচিভর্স*
38. (b) The term “mandamus” literally means “command.” Mandamus is a judicial remedy which is in the form of an order from a superior court to any government subordinate court, corporation or public authority to do or forbear from doing some specific act which that body is obliged under law to do or refrain from doing, as the case may be, and which is in the nature of public duty and in certain cases of a statutory duty. *অ্যাচিভর্স*
39. (c) Jawaharlal Nehru, gave this following speech as India’s first Prime Minister to the Constituent Assembly in New Delhi at midnight on August 14, 1947: “At the stroke of midnight hour, when the world sleeps, India will awake to life and freedom. A moment comes which comes but rarely in history, when we step out from the old to the new, then an age ends, and when the soul of a nation, long suppressed, finds utterance. It is fitting that at this solemn moment we take the pledge of dedication to India and her people and to the still larger cause of humanity.”
40. (a) Sea water is saltier than rain water because rivers wash away salts from earth and pour them into the sea. *অ্যাচিভর্স*
41. (a) Bauxite is an aluminium ore and is the main source of aluminium. This form of rock consists mostly of the minerals gibbsite  $Al(OH)_3$ , boehmite  $-AlO(OH)$ , and diaspore  $-AlO(OH)$ , in a mixture with the two iron oxides goethite and hematite, the clay mineral kaolinite, and small amounts of anatase  $TiO_2$ . Bauxite was named after the village Les Baux in southern France, where it was first recognised as containing aluminium and named by the French geologist Pierre Berthier in 1821.
42. (a) The Indian Institute of Foreign Trade (IIFT) is an autonomous public business school established in 1963 by the government of India to help professionalize the country’s foreign trade management and increase exports by developing human resources, generating, analyzing and disseminating data. It is located in New Delhi, India.
43. (a) China has regained its position as the top trading partner of India in 2020, which was held by United States, since 2018-19. The two-way trade between India and China stood at \$77.7 billion in 2020 despite the conflict along the Line of Actual Control (LAC) and the rising anti-China sentiment.
44. (b) Chromosomes are long, stringy aggregates of genes that carry heredity information. They are composed of DNA and proteins and are located within the nucleus of our cells. Chromosomes determine everything from hair color and eye color to sex. Whether you are a male or female depends on the presence or absence of certain chromosomes. Human cells contain 23 pairs of chromosomes for a total of 46. There are 22 pairs of autosomes and one pair of sex chromosomes. *অ্যাচিভর্স*
45. (a) Muhammad Iqbal was a philosopher, poet and politician in British India who is widely regarded as having inspired the Pakistan Movement. Iqbal elucidated to Jinnah his vision of a separate Muslim state in a letter sent on June 21, 1937: “A separate federation of Muslim Provinces, reformed on the lines I have suggested above, is the only course by which we can secure a peaceful India and save Muslims from the domination of Non-Muslims. Why should not the Muslims of North-West India and Bengal be considered as nations entitled to self-determination just as other nations in India and outside India are.” *অ্যাচিভর্স*
46. (a) Madhubani painting is one of the oldest art forms from Mithila region of Bihar. It is also known as Mithila Painting. This form of painting is done with fingers, twigs, brushes, nib-pens, and matchsticks, using natural dyes and pigments, and is characterized by eye-catching geometrical patterns.
47. (a) Digestive enzymes are enzymes that break down polymeric macromolecules into their smaller building blocks, in order to facilitate their absorption by the body. Digestive enzymes are found in the digestive tracts of animals (including humans) and in the traps of carnivorous plants, where they aid in the digestion of food, as well as inside cells, especially in their lysosomes, where they function to maintain cellular survival. Digestive enzymes are diverse and are found in the saliva secreted by the salivary glands, in the stomach secreted by cells lining the stomach, in the

pancreatic juice secreted by pancreatic exocrine cells, and in the intestinal (small and large) secretions, or as part of the lining of the gastrointestinal tract.

48. (d) Vijay Sampla assumed charge as the new Chairman of National Commission for Scheduled Castes (NCSC) on February 24, 2021. Sampla has been the former Union Minister of State for Social Justice & Empowerment from 2014 to 2019.

49. (d) Nasik, also known as the Wine Capital of India, or as India's Napa Valley, is located in Maharashtra in the Western Ghats, on the western edge of the Deccan peninsula on the banks of the Godavari.

50. (a) The Constitution (Forty-second Amendment) Act, 1976 added ten Fundamental Duties of Indian citizens to the nation in Part IV of the Constitution. These duties, set out in Part IV-A of the Constitution (under a constitutional amendment) concern individuals and the nation. Like the Directive Principles, they are not legally enforceable.

51. (a) Let number (dividend) be X.  
 $\therefore X = 296 \times Q + 75$  where Q is the quotient and can have the values 1, 2, 3 etc.  
 $= 37 \times 8 \times Q + 37 \times 2 + 1$   
 $= 37 (8Q + 2) + 1$

Thus we see that the remainder is 1.  
 [Remark : When the second divisor is a factor of the first divisor, the second remainder is obtained by dividing the first remainder by the second divisor.

Hence, divide 75 by 37, the remainder is 1].

52. (d) Let the quotient be Q and the remainder be R. Then

Divisor = 7 Q = 3 R  
 $\therefore Q = \frac{3}{7}R = \frac{3}{7} \times 28 = 12$

$\therefore$  Divisor = 7 Q = 7  $\times$  12 = 84  
 $\therefore$  Dividend = Divisor  $\times$  Quotient + Remainder  
 $= 84 \times 12 + 28 = 1008 + 28 = 1036$

53. (b) Let the three consecutive natural numbers be x, x + 1 and x + 2.

$\therefore$  According to question,  
 $x^2 + (x + 1)^2 + (x + 2)^2 = 2030$   
 or  $x^2 + x^2 + 2x + 1 + x^2 + 4x + 4 = 2030$   
 or  $3x^2 + 6x + 5 = 2030$   
 or  $3x^2 + 6x - 2025 = 0$   
 or  $x^2 + 2x - 675 = 0$   
 or  $x^2 + 27x - 25x - 675 = 0$

$x(x + 27) - 25(x + 27) = 0$

or  $(x - 25)(x + 27) = 0$

$\therefore x = 25$  and  $-27$

$\therefore$  Required number = x + 1

= 25 + 1 = 26

54. (b) Required number  
 = HCF of (110 - 2) and (128 - 2)  
 = HCF of 108 and 126 = 18

55. (c) Let the two numbers are 2x and 3x respectively.

According to question,

LCM = 54

$x(3 \times 2) = 54$

$\Rightarrow x = 9$

Numbers = 2x = 2  $\times$  9 = 18 and, 3x = 3  $\times$  9 = 27

Sum of the two numbers = 18 + 27 = 45

56. (a)  $\frac{2}{3} \times \frac{3}{\frac{5}{6} \div \frac{2}{3}}$  of  $\frac{1}{4}$

=  $\frac{2}{3} \times \frac{3}{\frac{5}{6} \div \frac{2}{3}}$  of  $\frac{5}{4}$

=  $\frac{2}{3} \times \frac{3}{\frac{5}{6} \div \frac{10}{12}}$

=  $\frac{2}{3} \times \frac{3}{\frac{5}{6} \times \frac{12}{10}} = \frac{2}{3} \times \frac{3}{1} = 2$

57. (a) =  $\frac{16}{3} \div \frac{11}{9} \times \frac{1}{4} \left( 10 + \frac{3}{5-1} \right)$

=  $\frac{16}{3} \times \frac{9}{11} \times \frac{1}{4} \left( 10 + \frac{15}{4} \right)$

=  $\frac{16}{3} \times \frac{9}{11} \times \frac{1}{4} \left( \frac{40+15}{4} \right)$

=  $\frac{16}{3} \times \frac{9}{11} \times \frac{1}{4} \times \frac{55}{4} = 15$

58. (c)  $\sqrt{\frac{(6.1)^2 + (61.1)^2 + (611.1)^2}{(0.61)^2 + (6.11)^2 + (61.11)^2}}$

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$$= \sqrt{\frac{(10 \times 0.61)^2 + (10 \times 6.11)^2 + (10 + 61.11)^2}{(0.61)^2 + (6.11)^2 + (61.11)^2}}$$

$$= \sqrt{100} = 10$$

59. (b) Average height of whole class

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$$= \left( \frac{30 \times 160 + 20 \times 165}{50} \right) \text{cm}$$

$$= \left( \frac{4800 + 3300}{50} \right) \text{cm}$$

$$= \left( \frac{8100}{50} \right) \text{cm} = 162 \text{ cm}$$

60. (d) Last number

$$= 30 \times 12 - 20 \times 11 - 9 \times 10$$

$$= 360 - 220 - 90$$

$$= 360 - 310 = 50$$

61. (a)  $\frac{W_1}{W_2} = \frac{2}{3}$

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$$\Rightarrow \frac{W_2}{W_1} = \frac{3}{2} \text{ and } \frac{W_1}{W_3} = \frac{1}{2}$$

$$\therefore \frac{W_2}{W_1} \times \frac{W_1}{W_3} = \frac{W_2}{W_3} = \frac{3}{2} \times \frac{1}{2} = \frac{3}{4}$$

$$= 3 : 4$$

62. (d) Ratio of division

$$= \frac{1}{2} : \frac{2}{3} : \frac{4}{5}$$

$$= \frac{1}{2} \times 30 : \frac{2}{3} \times 30 : \frac{4}{5} \times 30$$

[LCM of 2, 3 and 5 = 30]

$$= 15 : 20 : 24$$

$\therefore$  Sum of the terms of ratio

$$= 15 + 20 + 24 = 59$$

$\therefore$  Second part

$$= ₹ \left( \frac{20}{59} \times 177 \right) = ₹ 60$$

63. (c) Gain per cent =  $\frac{400 - 320}{320} \times 100$

$$= \frac{80}{320} \times 100 = 25\%$$

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64. (b) S.P. of book =  $\frac{150 \times 120}{100} = ₹ 180$

65. (b)  $\frac{2x - y}{x + 2y} = \frac{1}{2}$

$$\Rightarrow 4x - 2y = x + 2y$$

$$\Rightarrow 3x = 4y$$

$$\Rightarrow \frac{x}{y} = \frac{4}{3}$$

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$$\therefore \frac{3x - y}{3x + y} = \frac{y \left( 3 \frac{x}{y} - 1 \right)}{y \left( 3 \frac{x}{y} + 1 \right)}$$

$$= \frac{3 \times \frac{4}{3} - 1}{3 \times \frac{4}{3} + 1} = \frac{4 - 1}{4 + 1} = \frac{3}{5}$$

66. (d)  $x = \sqrt{3} + \sqrt{2}$

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

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$$= \frac{1}{\sqrt{3} + \sqrt{2}} \times \frac{\sqrt{3} - \sqrt{2}}{\sqrt{3} - \sqrt{2}} = \sqrt{3} - \sqrt{2}$$

$$\therefore x + \frac{1}{x} = 2\sqrt{3}$$

$$\therefore \left( x^2 + \frac{1}{x^2} \right) = \left( x + \frac{1}{x} \right)^2 - 2$$

$$= (2\sqrt{3})^2 - 2 = 12 - 2 = 10$$

67. (c) Expression

$$= \left[ \frac{\cos^2 A (\sin A + \cos A)}{\operatorname{cosec}^2 A (\sin A - \cos A)} + \frac{\sin^2 A (\sin A - \cos A)}{\sec^2 A (\sin A + \cos A)} \right]$$

$$\times \left( \frac{1}{\cos^2 A} - \frac{1}{\sin^2 A} \right)$$

$$= \left[ \frac{\cos^2 A \cdot \sin^2 A (\sin A + \cos A)}{\sin A - \cos A} \right.$$

$$\left. + \frac{\sin^2 A \cdot \cos^2 A (\sin A - \cos A)}{(\sin A + \cos A)} \right]$$

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$$\left( \frac{\sin^2 A - \cos^2 A}{\sin^2 A \cdot \cos^2 A} \right)$$

$$= \left( \frac{\sin A + \cos A}{\sin A - \cos A} + \frac{\sin A - \cos A}{\sin A + \cos A} \right) (\sin^2 A - \cos^2 A)$$

$$= \left[ \frac{(\sin A + \cos A)^2 + (\sin A - \cos A)^2}{(\sin A - \cos A)(\sin A + \cos A)} \right] (\sin^2 A - \cos^2 A)$$

$$= 2(\sin^2 A + \cos^2 A) = 2$$

68. (c)  $\cos^4 \theta - \sin^4 \theta = \frac{2}{3}$

$$\Rightarrow (\cos^2 \theta + \sin^2 \theta)(\cos^2 \theta - \sin^2 \theta) = \frac{2}{3}$$

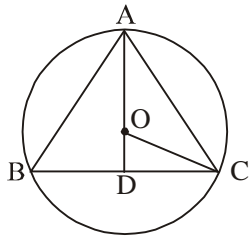
$$\Rightarrow \cos^2 \theta - \sin^2 \theta = \frac{2}{3}$$

$$\Rightarrow 1 - \sin^2 \theta - \sin^2 \theta = \frac{2}{3}$$

$$\Rightarrow 1 - 2\sin^2 \theta = \frac{2}{3}$$

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69. (b)



AD ⊥ BC  
BD = DC = 12 cm.  
OC = OA = Circum-radius  
= r cm.

$$\begin{aligned} AD &= \sqrt{AB^2 - BD^2} \\ &= \sqrt{(12\sqrt{5})^2 - (12)^2} \\ &= \sqrt{144 \times 5 - 144} \\ &= \sqrt{144(5-1)} = \sqrt{144 \times 4} \\ &= 24 \text{ cm.} \end{aligned}$$

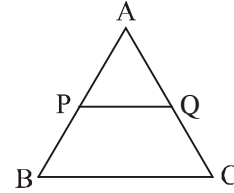
In ΔOCD,  
OD = (24 - r) cm.  
∴ OC<sup>2</sup> = OD<sup>2</sup> + CD<sup>2</sup>  
⇒ r<sup>2</sup> = (24 - r)<sup>2</sup> + 12<sup>2</sup>

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$$\begin{aligned} \Rightarrow r^2 &= 576 - 48r + r^2 + 144 \\ \Rightarrow 48r &= 720 \end{aligned}$$

$$\Rightarrow r = \frac{720}{48} = 15 \text{ cm.}$$

70. (b)



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$$\frac{AP}{PB} = \frac{AQ}{QC} = \frac{1}{2}$$

$$\Rightarrow \frac{QC}{AQ} = \frac{2}{1} \Rightarrow \frac{QC + AQ}{AQ} = \frac{3}{1}$$

$$\Rightarrow AC = 3AQ = 9 \text{ cm}$$

71. (c) Semi-perimeter,

$$S = \frac{9+10+11}{2} = 15 \text{ cm}$$

Area of triangle

$$\begin{aligned} &= \sqrt{s(s-a)(s-b)(s-c)} \\ &= \sqrt{15(15-9)(15-10)(15-11)} \\ &= \sqrt{15 \times 6 \times 5 \times 4} = 30\sqrt{2} \text{ cm}^2 \end{aligned}$$

72. (a) Area of regular hexagon

$$\begin{aligned} &= \frac{3\sqrt{3}}{2} \times (\text{side})^2 \\ &= \frac{3\sqrt{3}}{2} \times 2\sqrt{3} \times 2\sqrt{3} \\ &= 18\sqrt{3} \text{ cm}^2. \end{aligned}$$

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73. (c)  $x = \frac{1}{2 + \sqrt{3}}$

$$= \frac{1}{2 + \sqrt{3}} \times \frac{2 - \sqrt{3}}{2 - \sqrt{3}} = \frac{2 - \sqrt{3}}{4 - 3}$$

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

$$\therefore y = \frac{1}{2 - \sqrt{3}} = 2 + \sqrt{3}$$

$$\therefore x + y = 2 - \sqrt{3} + 2 + \sqrt{3} = 4$$

$$xy = (2 - \sqrt{3})(2 + \sqrt{3})$$

$$= 4 - 3 = 1$$

$$\therefore 8xy (x^2 + y^2)$$

$$= 8xy [(x + y)^2 - 2xy]$$

$$= 8 \times 1 (4^2 - 2 \times 1)$$

$$= 8 (16 - 2) = 8 \times 14 = 112$$

74. (a)  $\frac{a}{b} = \frac{25}{6}$  প্র্যাচিভর্স

$$\Rightarrow \frac{a^2}{b^2} = \frac{25^2}{6^2} = \frac{625}{36}$$

By componendo and dividendo,

$$\frac{a^2 - b^2}{a^2 + b^2} = \frac{625 - 36}{625 + 36} = \frac{589}{661}$$

75. (b)  $a + \frac{1}{a} = \sqrt{3}$

On cubing both sides

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

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

$$\Rightarrow a^3 + \frac{1}{a^3} = 0 \quad \dots (1)$$

$$\Rightarrow a^6 + \frac{1}{a^6} + 2$$

$$= (a^3)^2 - \left( \frac{1}{a^3} \right)^2 + 2$$

$$= \left( a^3 + \frac{1}{a^3} \right) \left( a^3 - \frac{1}{a^3} \right) + 2 = 2$$

76. (c) **disqualify (V)** : to prevent somebody from doing something; bar.

Here, **Gerund** i.e. **from appearing at the examination** is the right usage. প্র্যাচিভর্স

77. (d) **No error**

78. (a) There is an error in the order of words.

**He was so hoarse** is the right usage.

**so — that** is used to show cause and effect

**Look at the examples given below :**

She was **so** tired **that** she could not walk.

She was **so** angry **that** she tore the letter up.

79. (c) **many a (Det.)** : a large number of used with a **Singular Noun** and **Verb**

Here, **is** is the right usage.

80. (b) Here, **arrived; dead** is the right usage.

81. (d) **Age and experience** work as a single unit

like **bread and butter, cup and saucer**, etc. Hence, **Singular Verb** is used with it.

Here, **brings** is the right usage. প্র্যাচিভর্স

82. (a) Here, **vision** is the right usage.

83. (b) **Singular Verb** is used when two **Nouns** are joined by **and** and come after **each**.

Here, **has** is the right usage.

84. (c) mad

**insane (Adjective)** : seriously, mentally ill and unable to live in normal society.

85. (d) dais

**podium (Noun)** : pedestal; a small platform that person stands on while giving a speech etc; rostrum.

86. (b) charm প্র্যাচিভর্স

**charisma (Noun)** : the powerful personal quality that some people have to attract and impress other people.

87. (d) **at one's beck and call** : always ready to obey somebody's orders

- There were a dozen of maids and waiters **at our beck and call**.

The best option is **to be dominated by someone**.

88. (c) **a red-letter day** : an important day

- 15th August is a **red-letter day** in the history of India.

The best option is **an important or joyful occasion in one's life**.

89. (d) **birds of the same feather** : people of the same sort

- Chayanika and Aadya are **birds of the same feather**. They get along very well.

The best option is **persons of same character**.

90. (d) **to fight tooth and nail** : to fight in a very determined way for what you want

- They vowed to fight the new legislation **tooth and nail**.

The best option is **to make every possible effort**.

91. (a) **success (Noun)** : achievement প্র্যাচিভর্স

**debacle (Noun)** : an event or a situation that is a complete failure and causes embarrassment

**response (Noun)** : a spoken/ written answer

**acceptance (Noun)** : the act of accepting/ agreeing

**agreement (Noun)** : the act of agreeing

92. (a) **laudatory (Adjective)** : expressing praise/ admiration

**abusive (Adjective)** : rude and offensive



- profuse (Adjective)** : produced in large amounts
- effensive (Adjective)** : showing much/too much emotion
- noble (Adjective)** : having fine personal qualities that people admire
93. (a) **purification (Noun)** : cleaning by getting rid of impurities
- adulteration (Noun)** : being mixed with unnecessary materials
- normalization (Noun)** : the imposing of a standard
- rejuvenation (Noun)** : the phenomenon of vitality and freshness being restored
- consternation (Noun)** : a worried, sad feeling after you have received an unpleasant surprise; dismay.
94. (d) **addict** শ্রদ্ধাচিহ্ন
- addict (N.)** : a person who is very interested in something and spends a lot of his free time in it ; a person who is unable to stop taking harmful drugs
- criminal (N.)** : connected with/involving crime
- martyr (N.)** : a person who suffers very much or is killed because of his religious/political beliefs শ্রদ্ধাচিহ্ন
- gladiator (N.)** : a man trained to fight other men/animals in order to entertain public
95. (d) **A posthumous child**
- posthumous child (N.)** : given or happening after someone has died
- orphan (N.)** : a child whose parents are dead
- deprived child (N.)** : a child who is without enough food, education and all the things that are necessary for it to live a happy and comfortable life
- waif (N.)** : a thin child who doesn't have enough to eat.
96. (b) **gradually (Adv.)** : slowly, over a long period of time.
97. (a) **descend (V.)** : to arrive and begin to affect somebody/something.
98. (d) **distinct (Adj.)** : easily or clearly seen, heard, felt etc.
99. (c) **lay** শ্রদ্ধাচিহ্ন
100. (c) **reached**

