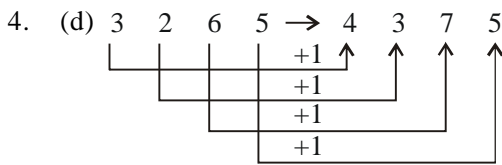
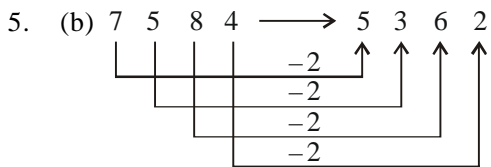
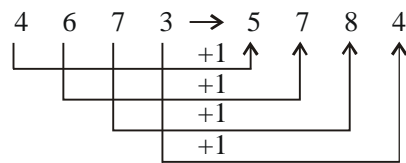


SSC HS Level (Tier-I) Practice Set – 2023

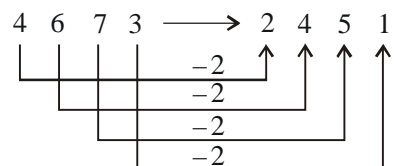
- (b) Carpentry is considered to be a skill. Similarly, Singing is considered to be a talent.
- (c) Pane is a part of Window. Similarly, pages are parts of a Book.
- (c) Ant, Fly and Bee are small insects. Similarly, Hamster, squirrel and mouse are more or less similar small animals.



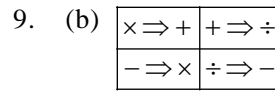
Similarly,



Similarly,



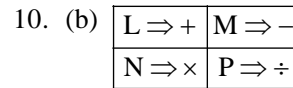
- (c) The only son of grandfather (paternal) of Vikas means father of Vikas. Therefore, the girl is sister of Vikas.
- (b) Rao is uncle of Rohit and Ravi. Therefore, Mohan is Grandfather of Ravi.
- (a) P R A B A
↓ ↓ ↓ ↓ ↓
2 7 5 9 5
T H I L A K
↓ ↓ ↓ ↓ ↓ ↓
3 6 8 4 5 1
Therefore,
B H A R A T H I
↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
9 6 5 7 5 3 6 8



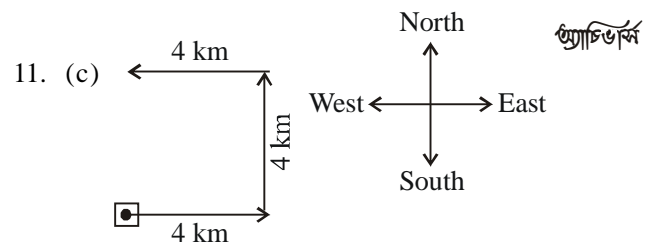
$$6 \times 4 - 5 + 2 \div 1 = ?$$

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

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

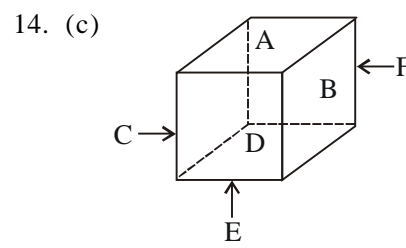


Given expression
 $5 N 5 P 5 L 5 M 5 = ?$
After changing the signs
 $? = 5 \times 5 \div 5 + 5 - 5$
 or, $? = 5 + 5 - 5 = 5$



- (d) $L \Rightarrow 12 + 8 = 20$
 $E \Rightarrow 5 + 8 = 13$
 $A \Rightarrow 1 + 8 = 9$
 $D \Rightarrow 4 + 8 = 12$
 $E \Rightarrow 5 + 8 = 13$
 $R \Rightarrow 18 + 8 = 26$
 Therefore,
 $L \Rightarrow 12 + 8 = 20$
 $I \Rightarrow 9 + 8 = 17$
 $G \Rightarrow 7 + 8 = 15$
 $H \Rightarrow 8 + 8 = 16$
 $T \Rightarrow 20 + 8 = 28$

- (d) The year 1989 was a normal year.
 Days upto 15 August 1989 from August 15, 1988
 $= 16 + 30 + 31 + 30 + 31 + 31 + 28 + 31 + 30 + 31 + 30 + 31 + 15 = 365 = 52 \text{ weeks } 1 \text{ day}$
 Therefore, Wednesday + 1 = Thursday



প্র্যাচিউর্স

প্র্যাচিউর্স

প্র্যাচিউর্স

প্র্যাচিউর্স

প্র্যাচিউর্স

প্র্যাচিউর্স

প্র্যাচিউর্স


প্র্যাচিউর্স

15. (b) Except in the word STATIC, there is letter 'E' in all the other three words. But there is no letter 'E' in the Keyword. প্র্যাচিভর্ক
16. (b) There is no 'E' letter in the given word. Therefore, the word GAME cannot be formed. There is no 'K' letter in the given word. Therefore, the word AGMARK cannot be formed. There is no 'I' letter in the given word. Therefore, the word GUITAR cannot be formed.
17. (d) Suppose the present age of younger daughter is x years.
 \therefore Present age of the elder daughter = x + 5 years
 Present age of the father = 3(x + 5) years.
 According to the question,
 5 years before,
 $8(x - 5) = (3x + 15) - 5$
 or, $8x - 40 = 3x + 10$
 or, $8x - 3x = 10 + 40$
 $\therefore x = \frac{50}{5} = 10$ years প্র্যাচিভর্ক
 Present age of father = $3(x + 5)$
 $= 3 \times 10 + 15 = 45$ years
18. (c) Suppose the present age of the son is x years. Therefore, the present age of father will be 3x years.
 According to question
 $5(x - 8) = 3x - 8$
 $\Rightarrow 5x - 40 = 3x - 8$
 $\Rightarrow 5x - 3x = 40 - 8$
 $\Rightarrow 2x = 32$
 $\therefore x = \frac{32}{2} = 16$ years প্র্যাচিভর্ক
19. (d) Suppose present age of Mrs. Lata = x years
 Present age of son = y years
 $\therefore x + y = 64$ (i)
 According to question,
 $x - 8 = 3(y - 8)$
 $\Rightarrow x - 8 = 3y - 24$
 $\Rightarrow x - 3y = -16$ (ii)
 From equations (i) and (ii),
 $4y = 80$
 $y = 20$
 \therefore Age of Mrs. Lata = $64 - 20 = 44$ years
20. (c) $11 + 2 = 13$ প্র্যাচিভর্ক
 $13 + 4 = 17$
 $17 + 2 = 19$
 $19 + 4 = 23$
 $23 + 2 = 25$

- $25 + 4 = \boxed{29}$
21. (d) $30 \times 2 + 2 = 62$
 $62 \times 3 + 3 = 189$
 $189 \times 4 + 4 = 760$
 $760 \times 5 + 5 = \boxed{3805}$ প্র্যাচিভর্ক
22. (a)

C	A	R		S	I	T
↓	↓	↓		↓	↓	↓
φ	α	δ		η	ψ	κ
W	E	L	L	M	A	P
↓	↓	↓	↓	↓	↓	↓
σ	ι	ψ	ψ	μ	α	β

 Therefore,

ψ	α	μ	β
↓	↓	↓	↓
L	A	M	P
23. (b) Both the Premises are Universal Affirmative (A-type).
 All children are students.

 All students are players.
 $A + A \Rightarrow A$ -type of Conclusion
 All children are players.,
 This is Conclusion II. প্র্যাচিভর্ক
24. (b)

6		13		15
F	$\xrightarrow{+7}$	M	$\xrightarrow{+2}$	O
10		17		19
J	$\xrightarrow{+7}$	Q	$\xrightarrow{+2}$	S
14		21		23
N	$\xrightarrow{+7}$	U	$\xrightarrow{+2}$	W

প্র্যাচিভর্ক
25. (c) $14 + 1 = 15$; $15 + 2 = 17$
 $17 + 4 = 21$; $21 + 8 = 29$
 $29 + 16 = 45$
26. (d) Excavations at Chanhudaro have revealed three different cultural layers from lowest to the top being Indus culture, the Jhukar culture and the Jhangar culture. The site is especially important for providing evidences about different Harappan factories. These factories produced seals, toys and bone implements. It was the only Harappan city without a citadel. প্র্যাচিভর্ক
27. (a) In British India, broadcasting began in July 1923 with programmes by the Radio Club of Bombay

and other radio clubs. According to an agreement of 23 July, 1927, the private Indian Broadcasting Company LTD (IBC) was authorized to operate two radio stations; the Bombay station began on 23 July, 1927, and the Calcutta station followed on 26 August, 1927. On 1 March, 1930, however, the company went into liquidation. Lionel Fielden was appointed as the first Controller of Broadcasting, who took over, from BBC.

প্র্যাচিভার্স

28. (c) At its core, sovereignty is typically taken to mean the possession of absolute authority within a bounded territorial space. There is essentially an internal and external dimension of sovereignty. Internally, a sovereign government is a fixed authority with a settled population that possesses a monopoly on the use of force. It is the supreme authority within its territory. Externally, sovereignty is the entry ticket into the society of states.

প্র্যাচিভার্স

29. (a) The 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. In the case of earthquakes, the epicenter is directly above the point where the fault begins to rupture, and in most cases, it is the area of greatest damage. However, in larger events, the length of the fault rupture is much longer, and damage can be spread across the rupture zone.

প্র্যাচিভার্স

30. (c) Ex Khaan Quest 2023 is a multilateral peacekeeping joint exercise that is currently being held in Mongolia. It involved the participation of military contingents and observers from around 20 countries.

President of Mongolia inaugurated the Exercise, which is co-sponsored by Mongolian Armed Forces (MAF) and United States Army Pacific Command (USARPAC).

প্র্যাচিভার্স

31. (a) Per capita income or average income or income per person is the mean income within an economic aggregate, such as a country or city. It is calculated by taking a measure of all sources of income in the aggregate (such as GDP or Gross National Income) and dividing it by the total population.

প্র্যাচিভার্স

32. (b) Pali is the language in which the texts of the Theravada school of Buddhism are preserved. The Pali texts are the oldest collection of Buddhist scriptures preserved in the language in which they were written down.

33. (b) Habeas corpus is a bulwark of personal freedom. It is a legal action, or writ, through which a person can seek relief from the unlawful detention of him or herself, or of another person. It protects the individual from harming him or herself, or from being harmed by the judicial system. The writ of habeas corpus has historically been an important instrument for the safeguarding of individual freedom against arbitrary state action.

প্র্যাচিভার্স

34. (a) The Earth is composed predominantly of a large mass of igneous rock with a very thin veneer of weathered material—namely, sedimentary rock. Igneous rocks are formed from the solidification of magma, which is a hot molten or partially molten rock. Igneous and metamorphic rocks make up 90–95% of the top 16 km of the Earth's crust by volume.

প্র্যাচিভার্স

35. (d) The Sanskrit language, once ignored under the Buddhist and Jain influence, was patronised during the Gupta period. It was recognised as the court language and was used in their inscriptions. Gradually it became the lingua franca of India. Some of the wellknown scholars who flourished during this period were: Kalidasa, Vishakhadutta, Shudraka, Bharavi, Dandin, Subandhu, etc.

প্র্যাচিভার্স

36. (a) The iGOTKarmayogi Platform has recently launched a compilation called DAKSHTA (Development of Attitude, Knowledge, Skill for Holistic Transformation in Administration) for Young Professionals.

Its primary goal is to enhance the learners' functional, domain-specific, and behavioral abilities by providing essential knowledge on subjects that are vital for effectively fulfilling their duties and responsibilities.

প্র্যাচিভার্স

37. (c) The spectrum of the Sun's solar radiation is close to that of a black body with a temperature of about 5,800 K. The Sun emits Electromagnetic radiation across most of the electromagnetic spectrum. Although the Sun produces Gamma rays as a result of the nuclear fusion process, these super high energy photons are converted to lower energy photons before they reach the Sun's surface and are emitted out into space. nuclear fusion is a nuclear reaction in which two or more atomic nuclei join together, or "fuse", to form a single heavier nucleus. During this process, matter is not conserved because some of the mass of the fusing nuclei is converted to energy which is released. Fusion is the process

that powers active stars. The fusion of two nuclei with lower masses than iron (which, along with nickel, has the largest binding energy per nucleon) generally releases energy, while the fusion of nuclei heavier than iron absorbs energy.

38. (c) Habeas corpus means “you must present the person in court”. It is a writ (legal action) which requires a person under arrest to be brought before a judge or into court. This ensures that a prisoner can be released from unlawful detention, in other words, detention lacking sufficient cause or evidence. শ্রীচিওর্ষ
39. (b) Bara Imambara is an imambara complex in Lucknow, India, built by Asaf-ud-Daulah, Nawab of Lucknow, in 1784. It is also called the Asafi Imambara. Bara means big, and an imambara is a shrine built by Shia Muslims for the purpose of Azadari.
40. (c) Rihand Dam is a concrete gravity dam located at Pipri in Sonbhadra District in Uttar Pradesh, India. It is on the border of Chhattisgarh and Uttar Pradesh. It is on the Rihand River which is the tributary of the Son River. The Rihand River flows through the Indian states of Chhattisgarh and Uttar Pradesh. The Rihand rises from Matiranga hills, in the region south west of the Mainpat plateau, which is about 2,100 meters above mean sea level. The river flows north roughly through the central part of Surguja district for 160 kilometres. The Rihand and its tributaries form a fertile plain in the central part of the district stretching from around Ambikapur to Lakhanpur and Pratappur. Thereafter, it flows north into Sonbhadra district of Uttar Pradesh via Singrauli district of Madhya Pradesh, where it is called Rhed and finally joins the Son. শ্রীচিওর্ষ
41. (c) The atmosphere of Earth is a layer of gases surrounding the planet Earth that is retained by Earth’s gravity. The atmosphere protects life on Earth by absorbing ultraviolet solar radiation, warming the surface through heat retention (greenhouse effect), and reducing temperature extremes between day and night (the diurnal temperature variations). Air is the name given to the atmosphere used in breathing and photosynthesis. Dry air contains roughly (by volume) 78.09% nitrogen, 20.95% oxygen, 0.93% argon, 0.039% carbon dioxide, and small amounts of other gases. Air also contains a variable amount of water vapor, on average

around 1%. While air content and atmospheric pressure vary at different layers, air suitable for the survival of terrestrial plants and terrestrial animals is currently only known to be found in Earth’s troposphere and artificial atmospheres. Air is mainly composed of nitrogen, oxygen, and argon, which together constitute the major gases of the atmosphere. The remaining gases are often referred to as trace gases, among which are the greenhouse gases such as water vapor, carbon dioxide, methane, nitrous oxide, and ozone. Filtered air includes trace amounts of many other chemical compounds. শ্রীচিওর্ষ

42. (d) If a person’s wage rises by ten per cent and prices rise by more than ten per cent, his real wage goes down.
43. (a) Gita Press, Gorakhpur recently received the Gandhi Peace Prize 2021. It is the largest publisher of Hindu religious texts. Gandhi Peace Prize is an annual award instituted by Government of India in 1995, on 125th Birth Anniversary of Mahatma Gandhi as a tribute to the ideals advocated by Mahatma Gandhi. It is open to all persons regardless of nationality, race, language, caste, creed or gender. শ্রীচিওর্ষ
44. (c) Galena is the natural mineral form of lead (II) sulfide. It is the most important lead ore mineral. Galena is one of the most abundant and widely distributed sulfide minerals. It crystallizes in the cubic crystal system often showing octahedral forms. It is often associated with the minerals sphalerite, calcite and fluorite. Galena deposits often contain significant amounts of silver as included silver sulfide mineral phases or as limited solid solution within the galena structure. These argentiferousgalenas have long been the most important ore of silver in mining. In addition zinc, cadmium, antimony, arsenic and bismuth also occur in variable amounts in lead ores.
45. (c) The Naujawan Bharat Sabha was founded by Bhagat Singh in March 1926 and was declared illegal under the Criminal Law Amendment Act of 1908 in September 1934. Its purpose was to help foster revolution against the British Raj by gathering together worker and peasant youth.
46. (a) The Gavari dance-drama of Bhils has its origin in the story of Shiva and Bhasmasur. শ্রীচিওর্ষ
47. (d) Any potato variety can be propagated vegetatively by planting tubers, pieces of tubers, cut to include at least one or two eyes, or also by cuttings, a practice used in greenhouses for

the production of healthy seed tubers. Some commercial potato varieties do not produce seeds at all (they bear imperfect flowers) and are propagated only from tuber pieces. প্র্যাচিভর্স

48. (a) Reserve Bank of India (RBI) Governor Shaktikanta Das honoured with ‘Governor of the Year’ award at Central Banking Awards 2023.

Central Banking is an international economic research journal. The award recognised his role as the RBI chief in managing inflation and handling India’s banking system during crises like COVID pandemic and global turmoils.

49. (c) Most of the west flowing rivers of Indian peninsula do not form delta. They form estuary. Narmada is one of them. It is so because rocky terrain of the Western Ghats does not allow the rivers to spread out much, and there is not sufficient plain stretch of land between the Arabian sea and Western Ghats for Narmada to slowdown and bifurcate into distributaries. Narmada forms an estuary of 21 km at the Gulf of Khambat. The river is presently partially navigable in the estuary reach around Bharuch but the river has never been a transport artery.

50. (c) The President of India is the head of state of the Republic of India. The President is the formal head of the executive, legislature and judiciary of India and is the commander-in-chief of the Indian Armed Forces.

51. (a) Let required number be x. প্র্যাচিভর্স
 $\therefore 0.022 \times x = 66$
 $\Rightarrow x = \frac{66}{0.022} = 3000$

52. (d) Let the unit digit be x and ten’s digit be y.
 \therefore Number
 $= 1000y + 100x + 10y + x$
 $= 1010y + 101x = 101(10y + x)$
 Clearly, this number is divisible by 101, which is the smallest three-digit prime number.

53. (b) $0.\overline{001} = \frac{1}{999}$

54. (d) We find LCM of 5, 6 and 8 প্র্যাচিভর্স
 $5 = 5$
 $6 = 3 \times 2$
 $8 = 2^3$
 $= 2^3 \times 3 \times 5 = 8 \times 15 = 120$
 Required number = $120K + 3$
 \therefore when $K = 2$, $120 \times 2 + 3 = 243$
 required no.

It is completely divisible by 9

55. (b) Required number
 $=$ HCF of $(729 - 9)$
 $= 720$ and $(901 - 5)$
 $= 896$

$$\begin{array}{r} 720) 896 (1 \\ \underline{720} \\ 176) 720 (4 \\ \underline{704} \\ 16) 176 (11 \\ \underline{16} \\ 16 \\ \underline{16} \\ 0 \end{array}$$

প্র্যাচিভর্স

H.C.F = 16

56. (b) $= 1 \div [1 + 1 \div \{1 + 1 \div (1 + 1 \div 2)\}]$

$$= 1 \div \left[1 + 1 \div \left\{ 1 + 1 \div \left(1 + \frac{1}{2} \right) \right\} \right]$$

$$= 1 \div \left[1 + 1 \div \left\{ 1 + 1 \div \frac{3}{2} \right\} \right]$$

প্র্যাচিভর্স

$$= 1 \div \left[1 + 1 \div \left\{ 1 + \frac{2}{3} \right\} \right] = 1 \div \left[1 + 1 \div \frac{5}{3} \right]$$

$$= 1 \div \left[1 + \frac{3}{5} \right] = 1 \div \frac{8}{5} = \frac{5}{8}$$

57. (b) Using (x) of Basic Formulae

If $a + b + c = 0$, then

$$a^3 + b^3 + c^3 = 3abc$$

Here, $0.111 + 0.222 + (-0.333) = 0$

$$\therefore (0.111)^3 + (0.222)^3 + (-0.333)^3$$

$$= -3 \times 0.111 \times 0.222 \times 0.333$$

$$= - (0.333)^2 \times 0.222$$

প্র্যাচিভর্স

$$\therefore \text{Expression}$$

$$= [-(0.333)^2 \times 0.222 + (0.333)^2 \times 0.222]^3 = 0$$

58. (c) Expression

$$= 4\sqrt{2} - 8\sqrt{2} + 5\sqrt{2}$$

$$= \sqrt{2}(4 - 8 + 5) = \sqrt{2}$$

$$= 1.414$$

59. (b) Average of a, b, c, d, e, f, g = d

Average of j, k, l, m, n, = 1

$$\therefore \text{Required average} = \frac{d+1}{2}$$

প্র্যাচিভর্স

60. (a) Total annual expenditure of man

$$= \text{Rs.}(5 \times 1200 + 7 \times 1300)$$

$$= \text{Rs.}(6000 + 9100)$$

$$= \text{Rs.} 15100$$

His total annual income
 = Rs. (15100 + 2900)
 = Rs. 18000
 ∴ Average monthly income
 = $\frac{18000}{12}$ = Rs. 1500

61. (d) $25^{2.5} : 5^3$ প্র্যাচিভর্স
 = $(5^2)^{2.5} : 5^3$
 = $5^5 : 5^3$
 = $5^2 : 1$
 = $25 : 1$

62. (a) According to the question,
 $\frac{5A}{19} = \frac{2B}{5}$
 $\Rightarrow 5A = \frac{19 \times 2B}{5}$
 $\Rightarrow A = \frac{38 \times B}{5 \times 5}$
 $\Rightarrow A : B = 38 : 25$ প্র্যাচিভর্স
 Sum of the terms of ratio
 = $38 + 25 = 63$

\Rightarrow B's share = Rs. $\left(\frac{25}{63} \times 6300\right)$ = Rs. 2500

63. (d) Total staff strength in the office = 100 (let)
 Females = 40
 Males = 60
 Married females = $\frac{40 \times 70}{100} = 28$
 Unmarried females = $40 - 28 = 12$ প্র্যাচিভর্স
 Unmarried males = 30
 ∴ Unmarried staff = $30 + 12 = 42$
 i.e. 42%

64. (d) If the third number is 100, then the numbers
 are $100 + \frac{25}{2} = \frac{225}{2}$ and 125 respectively.
 ∴ First number as a percentage of the second
 = $\frac{225}{2 \times 125} \times 100 = 90$

Rule : If two numbers are respectively x% and y% more than a third number the first as a percent of second is

$\frac{100 + x}{100 + y} \times 100\%$ প্র্যাচিভর্স

65. (d) $x = 3 + 2\sqrt{2}$
 $xy = 1$

$\Rightarrow y = \frac{1}{3 + 2\sqrt{2}}$
 $= \frac{1}{3 + 2\sqrt{2}} \times \frac{3 - 2\sqrt{2}}{3 - 2\sqrt{2}}$
 $= \frac{3 - 2\sqrt{2}}{9 - 8} = 3 - 2\sqrt{2}$ প্র্যাচিভর্স

∴ $x + y$
 = $3 + 2\sqrt{2} + 3 - 2\sqrt{2} = 6$
 ∴ $\frac{x^2 + 3xy + y^2}{x^2 - 3xy + y^2}$
 = $\frac{(x + y)^2 + xy}{(x + y)^2 - 5xy}$
 = $\frac{36 + 1}{36 - 5} = \frac{37}{31}$

66. (a) $a + \frac{1}{b} = b + \frac{1}{c} = c + \frac{1}{a} = \pm 1$ প্র্যাচিভর্স
 $\Rightarrow a + \frac{1}{b} = 1$
 $\Rightarrow ab + 1 = b \Rightarrow ab = b - 1$
 $b + \frac{1}{c} = 1, \Rightarrow \frac{1}{c} = 1 - b$
 $\Rightarrow c = \frac{1}{1 - b}$

∴ $abc = \frac{b - 1}{1 - b} = -1$ প্র্যাচিভর্স
 Again, $a + \frac{1}{b} = -1$
 $\Rightarrow ab + 1 = -b \Rightarrow ab = -b - 1$
 $b + \frac{1}{c} = 1 \Rightarrow \frac{1}{c} = -1 - b$
 $\Rightarrow c = \frac{1}{-1 - b}$
 ∴ $abc = 1$
 ∴ $abc = \pm 1$

67. (b) $\tan \alpha = 2$ প্র্যাচিভর্স
 ∴ $\frac{\operatorname{cosec}^2 \alpha - \sec^2 \alpha}{\operatorname{cosec}^2 \alpha + \sec^2 \alpha}$
 = $\frac{1 + \cot^2 \alpha - 1 - \tan^2 \alpha}{1 + \cot^2 \alpha + 1 + \tan^2 \alpha}$
 = $\frac{\cot^2 \alpha - \tan^2 \alpha}{\cot^2 \alpha + \tan^2 \alpha + 2}$

$$\begin{aligned} &= \frac{\frac{1}{4} - 4}{4} = \frac{1 - 16}{4} \\ &= \frac{1}{\frac{1}{4} + 4 + 2} = \frac{1 - 16 + 8}{4} \\ &= \frac{-15}{25} = \frac{-3}{5} \end{aligned}$$

প্র্যাচিভর্স

68. (b) Expression

$$\begin{aligned} &= \sin^4\theta + \cos^4\theta \\ &= (\sin^2\theta)^2 + (\cos^2\theta)^2 \\ &= (\sin^2\theta + \cos^2\theta)^2 - 2\sin^2\theta \cdot \cos^2\theta \\ &= 1 - 2\sin^2\theta \cdot \cos^2\theta \\ &= 1 - \frac{4\sin^2\theta \cdot \cos^2\theta}{2} \end{aligned}$$

$$[\because \sin^2\theta = 2\sin\theta \cdot \cos\theta]$$

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

$$= 1 - \frac{1 - \cos 4\theta}{4}$$

প্র্যাচিভর্স

$$[\because 1 - \cos^2\theta = 2\cos^2\theta]$$

$$= 1 - \frac{1}{4} + \frac{\cos 4\theta}{4}$$

$$= 1 - \frac{1}{4} + \frac{1}{4} = 1$$

$$(\cos 4\theta \leq 1)$$

OR

The value of $\sin^4\theta + \cos^4\theta$ will be maximum if $\theta = 0^\circ$

$$\therefore \text{Required value} = (\sin 0)^\4 + (\cos 0)^\4 = 0 + 1 = 1$$

69. (a) $2\angle A = 3\angle B = 6\angle C$

$$\Rightarrow \frac{2\angle A}{6} = \frac{3\angle B}{6} = \frac{6\angle C}{6}$$

প্র্যাচিভর্স

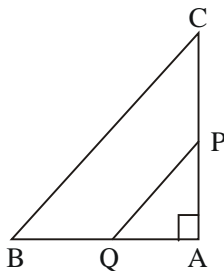
$$\Rightarrow \frac{\angle A}{3} = \frac{\angle B}{2} = \frac{\angle C}{1}$$

$$\Rightarrow \angle A : \angle B : \angle C = 3 : 2 : 1$$

$$\therefore \angle B = \left(\frac{2}{1+2+3}\right) \times 180^\circ$$

$$= \frac{2}{6} \times 180^\circ = 60^\circ$$

70. (b)



প্র্যাচিভর্স

In $\triangle AQC$,

$$\angle A = 90^\circ$$

$$\Rightarrow CQ^2 = AC^2 + QA^2$$

$$\Rightarrow 4CQ^2 = 4AC^2 + 4QA^2$$

$$\Rightarrow 4CQ^2 = 4AC^2 + (2QA)^2$$

$$\Rightarrow 4CQ^2 = 4AC^2 + AB^2$$

$$[\because AB = 2QA]$$

প্র্যাচিভর্স

In $\triangle BPA$,

$$BP^2 = BA^2 + AP^2$$

$$\Rightarrow 4BP^2 = 4BA^2 + 4AP^2$$

$$\Rightarrow 4BP^2 = 4BA^2 + AC^2$$

$$[\because AC = 2AP]$$

$$\therefore 4CQ^2 + 4BP^2 = 4AC^2 + AB^2 + 4AB^2 + AC^2$$

$$\Rightarrow 4(CQ^2 + BP^2) = 5(AC^2 + AB^2) = 5BC^2$$

$$\Rightarrow \frac{BP^2 + CQ^2}{BC^2} = \frac{5}{4}$$

71. (b) Here, $l = \text{arc length} = 3.5 \text{ cm}$

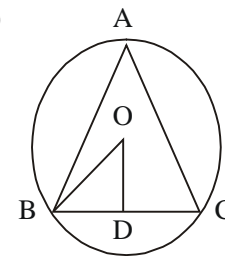
$$r = \text{radius} = 5 \text{ cm}$$

প্র্যাচিভর্স

$$\therefore \text{Area of sector} = \frac{1}{2}lr$$

$$= \frac{1}{2} \times 3.5 \times 5 = 8.75 \text{ cm}^2$$

72. (a)



Area of $\triangle ABC$

$$= \frac{\sqrt{3}}{4} \times (\text{side})^2$$

$$\Rightarrow \frac{\sqrt{3}}{4} \times (\text{side})^2 = 4\sqrt{3}$$

$$\Rightarrow \text{side} = \sqrt{16} = 4 \text{ cm}$$

$$\therefore \angle BOD = 60^\circ$$

$$\therefore \sin 60^\circ = \frac{BD}{OB}$$

$$\Rightarrow \frac{\sqrt{3}}{2} = \frac{2}{OB} \Rightarrow OB = \frac{4}{\sqrt{3}}$$

$$\therefore \text{Area of circle} = \pi r^2$$

$$= \pi \times \frac{16}{3} = \frac{16}{3} \pi \text{ cm}^2$$

প্র্যাচিভর্স

প্র্যাচিভর্স

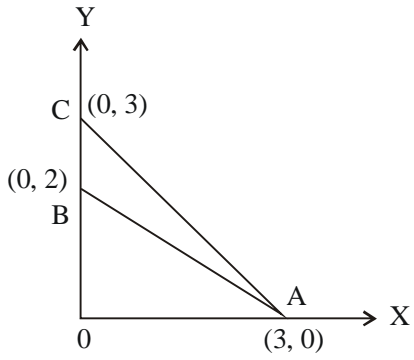
73. (b) Putting $x = 9$ in the equation

$$25x + 75y = 225,$$

$$\Rightarrow 25 \times 9 + 75y = 225$$

$\Rightarrow 75y = 225 - 225 = 0$
 $\Rightarrow y = 0$
 \therefore Point of intersection = (9, 0)

74. (c)



প্র্যাচিভর্স

$x = 0 \Rightarrow$ Equation of y - axis
 Putting $x = 0$ in $2x + 3y = 6$
 $0 + 3y = 6 \Rightarrow y = 2$
 \therefore Co-ordinates of point of intersection on y - axis = (0, 2)
 Again, putting $y = 0$, $x = 3$
 \therefore Point of intersection on x - axis = (3, 0)
 In $x + y = 3$
 Putting $x = 0$, $y = 3$
 and on putting $y = 0$, $x = 3$
 \therefore Required area
 $= \Delta OAC - \Delta OAB$
 $= \frac{1}{2} \times 3 \times 3 - \frac{1}{2} \times 3 \times 2$
 $= \frac{9}{2} - \frac{6}{2} = \frac{3}{2} = 1\frac{1}{2}$ sq. units

75. (b) $\frac{50}{100}(p-q) = \frac{30}{100}(p+q)$

$\Rightarrow 5(p - q) = 3(p + q)$
 $\Rightarrow 5p - 5q = 3p + 3q$
 $\Rightarrow 2p = 8q$
 $\Rightarrow p = 4q$
 $\therefore p : q = 4 : 1$

প্র্যাচিভর্স

76. (b) **himself** will replace **him** because – the **Subject (The poor man)** and the **Object (him)** are the same. So, **Reflexive Pronoun** will be used in place of **him**.
 Hence, **poisoned himself** is the right usage

77. (b) **when** will replace **that** because – **when** is used in time clauses to say that something happened, happens, or will happen at a particular time.

Look at the examples given below :
 He left school **when** he was sixteen.

The last time **when I** went to Scotland, the weather was beautiful.

Hence, when we first flew is the right usage

78. (d) **No error.**

79. (b) **incredible (Adj.)** : unbelievable
impractical (Adj.) : not practical/ workable
inaudible (Adj.) : impossible to hear
ineffable (Adj.) : too great/beautiful to describe in words
 Here, **incredible** is the right usage.

প্র্যাচিভর্স

80. (c) Here, **generates** is the right usage.
emits (V.) : to give/send out

81. (c) **coterie (N.)** : a small group of people who have the same interests and do things together but do not like to include others.

clique (N.) : a small exclusive group of friends/ associates.

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

প্র্যাচিভর্স

82. (a) **invent** : to produce something that has not existed before.

discover : to find something that was hidden.
 Here, **invented** is the right usage.

83. (b) Here, **most** is the right usage.

84. (d) **wound (Noun)** : an injury to the part of the body

blister (Noun) : a swelling on the surface of the skin that is filled with liquid; wound

chatter (Noun) : continuous rapid talk about things that are not important

travel (Noun) : the act of travelling, i.e. going from one place to another

attack (Noun) : an act of using violence to try to hurt or kill somebody

প্র্যাচিভর্স

85. (d) **correct (Verb)** : to make something right

rectify (Verb) : to put right something; correct

proceed (Verb) : to continue doing something that has already been started; go on

satisfy (Verb) : to make somebody pleased by doing or giving him what he wants

insert (Verb) : to put something into something else or between two things

86. (b) **dejected (Adjective)** : unhappy and disappointed; despondent

despondent (Adjective) : sad; without much hope; dejected.

deserted (Adjective) : a place with no people in it; abandoned

rejected (verb) : to refuse to accept or consider something ; to decide not to use

repentant (Adjective) : feeling or showing that

প্র্যাচিভর্স

you are sorry for something wrong that you have done.

87. (c) **within a stone's throw** : a very short distance away
 ● Her house is **within a stone's throw** from mine.
 The best option is **very near to**. প্র্যাচিভার্স
88. (b) **a good samaritan** : a person who gives help and sympathy to people who need it
 ● He's such a **good samaritan**. He goes shopping for his granny when she is ill.
 The best option is **a helpful person**.
89. (b) **fits and starts** : irregularly
 ● A sincere student works regularly, not **by fits and starts**.
 The best option is **not regularly**. প্র্যাচিভার্স
90. (a) **turns up her nose at** : to reject/dismiss scornfully
 ● He **turned his nose up at** m offer of soup.
 The best option is **despises**
91. (c) **distinct (Adjective)** : easily or clearly heard; definite
obscure (Adjective) : not well-known; unknown; difficult to understand; indistinct
vacant (Adjective) : empty; not being used; unoccupied
seldom (Adjective) : not often; rarely
unusual (Adjective) : strange; uncommon
92. (b) **cowardice (Noun)** : fear or lack of courage
bravery (Noun) : courage; feeling of no fear
savagery (Noun) : behaviour that is very cruel and violent; violence প্র্যাচিভার্স
cowardly (Adjective) : lacking courage; fearful
heroism (Noun) : very great courage
93. (a) **soothing (Adjective)** : affording physical relief; freeing from fear and anxiety
exasperating (Adjective) : extremely annoying; infuriating প্র্যাচিভার্স
successful (Adjective) : achieving your aims or what was intended; having become popular and/or made a lot of money
annoying (Adjective) : making somebody feel slightly angry; irritating

distressing (Adjective) : making you feel extremely upset because of somebody's suffering

94. (c) **somnambulist**
somnambulist (N.) : someone who walks about in sleep প্র্যাচিভার্স
somniloquist (N.) : someone who talks while asleep
egoist (N.) : a person who thi nks he/she is better than other people and who thinks and talks too much about himself/herself
altruist (N.) : someone who makes charitable donations intended to increase human wellbeing
95. (b) **mummy**
mummy (N.) : a body of a human/an animal that has been preserved by treating it with special oils and wrapping it in cloth; embalm প্র্যাচিভার্স
corpse (N.) : a dead body (human)
morgue (N.) : a building in which dead bodies are kept before they are buried/burned
mortuary (N.) : morgue
96. (a) The passage is discussing advancements in technology if we read further in the passage, by mentioning "internet and mobile devices", so option (a) is the correct choice. প্র্যাচিভার্স
97. (d) The passage suggests that advancements in technology have revolutionized the way we communicate, so option (d) is the correct choice.
98. (d) The passage suggests that advancements in technology have led to an expansion of the internet and mobile devices, so option (d) is the correct choice.
99. (a) The passage suggests that advancements in technology have made it easier to connect with the world around us, so option (a) is the correct choice. প্র্যাচিভার্স
- 100.(c) The passage mentions concerns about erosion privacy in relation to advancements in technology, so option (c) is the correct choice. None of the other verbs can be affiliated with "privacy".