SSC CHSL Tier-1 2024: Official Paper (Held On: 02 Jul, 2024 Shift 4) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2024 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Q1. Select the option that will improve the given sentence by using the most appropriate verb.

That Macbook belong to Xavier.

(a) That Macbook is belonged to Xavier.
(b) That Macbook belonging to Xavier
(c) That Macbook belongs to Xavier.
(d) That Macbook is belong to Xavier.

Q2. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

The teacher was / taken back by / the audacity of / the new student.

A B C D

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

Q3. Select the most appropriate article to fill in the blank.

_____ bed you sleep in is broken.

(a) On
(b) An
(c) A
(d) The

Q4. Identify the grammatical error in the following sentence and select the correct tense from the options given below.

I have met my friend yesterday

(a) have been meeting
(b) met my friend
(c) had been meeting
(d) was meeting

Directions

In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

It is generally (1)_____ that the methodology of teaching-learning is the concern of teachers only. Learners have (2) or nothing to do with it. But this is not true. The teaching-learning (3) __ are concerns of learners as well. Knowing and understanding that how different subjects are taught are important for the learners of all subjects, but it has more (4) __ for the learners of physical education. When we talk about you as learners of physical education, we mean that you have actually participated in the subject area, rather than (5) ____ studied it.

Q5. Select the most appropriate option to fill in blank no. 1.

(a) wished
(b) hoped
(c) planned
(d) believed

Q6. Select the most appropriate option to fill in blank no. 2.

(a) minute
(b) sparse
(c) little
(d) light

Q7. Select the most appropriate option to fill in blank no. 3.

(a) forms
(b) breaks
(c) customs
(d) methods

Q8. Select the most appropriate option to fill in blank no. 4.

(a) relevance
(b) consistency
(c) recurrence
(d) reference

Q9. Select the most appropriate option to fill in blank no. 5.

(a) purely
(b) entirely
(c) merely
(d) hardly

Q10. Select the most appropriate ANTONYM of the underlined word in the following sentence.

The upshot of the consultation with the doctor was an operation scheduled for the next week.

(a) Result
(b) Cause
(c) Estimate
(d) Blame

Q11. Select the option that rectifies the spelling of the underlined word in the given sentence.

It has been a usual ocurrence for a few days now.

(a) occurrance
(b) occurrence
(c) occerrence
(d) occurence

Q12. Select the most appropriate synonym of the given word.

Remission

(a) Pardon
(b) Overlook
(c) Punishment
(d) Retribution

Q13. Select the most appropriate idiomatic expression that can substitute the underlined segment in the given sentence.:

It feels like I made a promise of more than my ability when I promised to complete this worksheet in one day.

(a) bit off more than I could chew
(b) beat my brain out

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(c) beat the drum
(d) burnt a hole in my pocket

Q14. Select the most appropriate synonym of the underlined word.
Let us assume that we will do the job honestly.
(a) give
(b) take
(c) think
(d) allow

Q15. Select the most appropriate ANTONYM of the underlined word in the given sentence.
Few people turned up to attend the tawdry promo of the new movie.
(a) Gaudy
(b) Inferior
(c) Elegant
(d) Showy

Q16. Select the most appropriate option that can substitute the underlined segment in the given sentence.
The wizard, while performing an item, accidentally set his own hat on fire and prompted the fire alarm to go on.
(a) the fire alarm to go under
(b) the fire alarm to go away
(c) the fire alarm to go off
(d) the fire alarm to go above

Q17. Select the most appropriate option that can substitute the underlined segment in the given sentence.
It will take two hours to walk across the forest.
(a) away
(b) between
(c) through
(d) over

Q18. Select the most appropriate option that can substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No improvement required'.
We set up on the journey early in the morning.
(a) set about
(b) No improvement required
(c) set off
(d) set in

Q19. Select the most appropriate ANTONYM of the word given in the bracket to fill in the blank.
The State media houses present _____ (vociferous) views compared to private media.
(a) assertive
(b) political
(c) biased
(d) mild

Q20. Select the most appropriate option to fill in the blank.
She could easily eat the _____ biryani by herself.
(a) hall
(b) whole
(c) hole
(d) haul

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Q21. Select the most appropriate meaning of the given idiom.

On its last legs

(a) Slow movement
(b) In a bad condition
(c) Creeping on legs
(d) Last choice

Q22. Select the most appropriate option that collocates with 'wish' to fill in the blank.

The genie asked Aladdin to _____ a wish.

(a) ask
(b) tell
(c) make
(d) take

Q23. Identify the incorrectly spelt word and select its correct spelling.

Maybe he wanted to make sure he didn't embarrese her.

(a) sware
(b) shure
(c) embarrass
(d) emberess

Q24. Select the most appropriate ANTONYM of the underlined word in the given sentence.

The plot of the novel is very dull.

(a) Charming
(b) Diverting
(c) Plodding
(d) Riveting

Q25. Read the sentence carefully and select the most appropriate option to substitute the underlined part.

You can be sentenced for trespassing on someone else's property.

(a) leaving without permission
(b) showing unselfish devotion
(c) entering without permission
(d) conspiring against others

GENERAL INTELLIGENCE

Q26. Which of the following numbers will replace the question mark (?) in the given series?

12 60 20 100 60 300 260 ?

(a) 1280
(b) 1160
(c) 1300
(d) 1240

Q27. In a certain code language, 'BROW' is coded as '7542' and 'WORM' is coded as '7295'. What is the code for 'B' in the given code language?

(a) 4
(b) 2
(c) 9
(d) 7

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Q28. Select the correct mirror image of the given combination when the mirror is placed at MN as shown below.



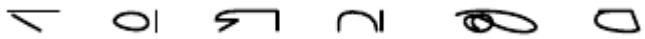
(a)



(b)



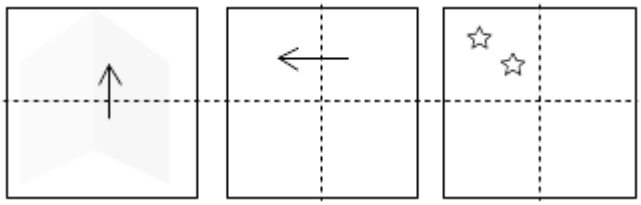
(c)



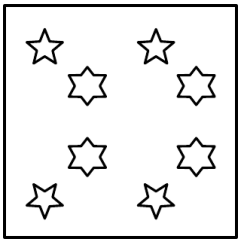
(d)



Q29. A square sheet of paper is folded along the dotted Line successively along the directions shown and is then punched in the last. How would the paper look when unfolded?



(a)



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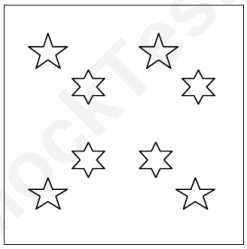
(b)



(c)



(d)



Q30. Each of the letters in the word FRAMED is arranged in alphabetical order. How many letters are there in the English alphabetical series between the letter which is second from the left and the one which is second from the right in the new letter cluster thus formed?

(a) Seven
(b) Nine
(c) Eight
(d) Six

Q31. Select the word-pair that best represents a similar relationship to the one expressed in the pair of words given below.

(The words must be considered as meaningful English words and must not be related to each other based on the number of letters/number of consonants/vowels in the word)

Happy : Ecstatic

(a) Polite : Courteous
(b) Honest : Deceptive
(c) Loyal : Betray
(d) Progress : Stagnation

Q32. What should come in place of ? in the given series based on the English alphabetical order?

SLE CXS ? WVU GHI

(a) MJG
(b) COR
(c) OWG
(d) HAP

Q33. If ‘A’ stands for '÷', 'B' stands for ‘×', 'C’ stands for ‘+' and ‘D' stands for ‘-', what will come in place of the question mark (?) in the following equation?

11 B 11 D 68 A 4 C 4 = ?

(a) 108
(b) 104

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(c) 102
(d) 106

Q34. If ‘A’ stands for '÷', 'B' stands for ‘×', 'C’ stands for ‘+' and ‘D' stands for ‘-', what will come in place of the question mark (?) in the following equation?

95 B 8 D 12 A 2 C 16 = ?

(a) 710
(b) 730
(c) 770
(d) 750

Q35. Each of the letters in the word JUSTICE are arranged in alphabetical order. How many letters are there in the English alphabetical series between the letter that is second from the left and the one that is fourth from the right in the new letter cluster thus formed ?

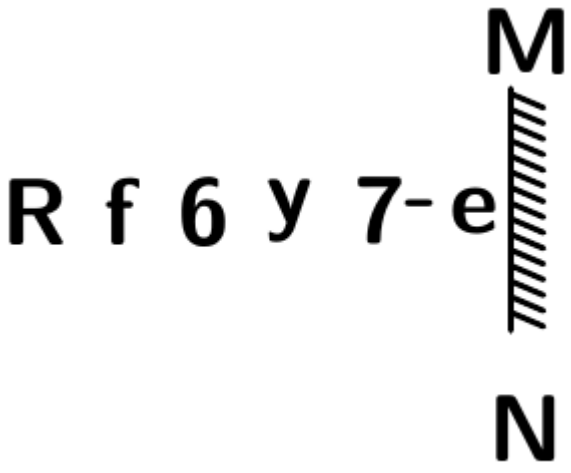
(a) 6
(b) 7
(c) 5
(d) 4

Q36. What will come in the place of ‘?’ in the following equation if ‘+’ and ‘×’ are interchanged and ‘–’ and ‘÷’ are interchanged?

90 – 10 × 36 + 52 ÷ 49 = ?

(a) 567
(b) 654
(c) 1832
(d) 879

Q37. Select the correct mirror image of the given figure when the mirror is placed at MN.



(a)



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(b)



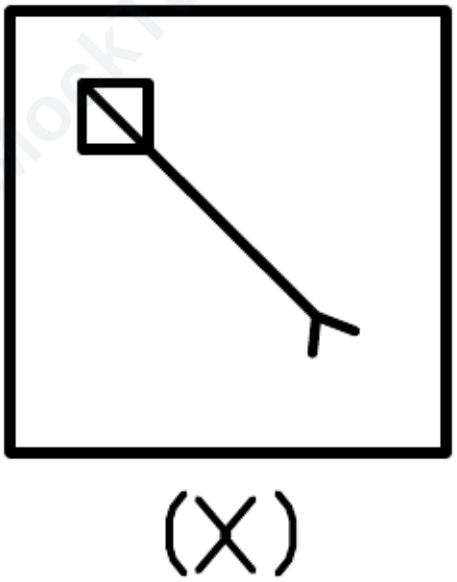
(c)



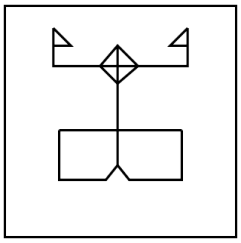
(d)



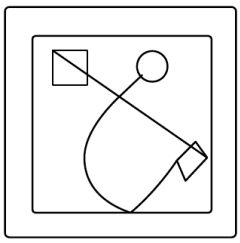
Q38. Select the option in which the given figure X is embedded (rotation is NOT allowed).



(a)

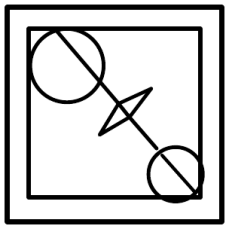


(b)

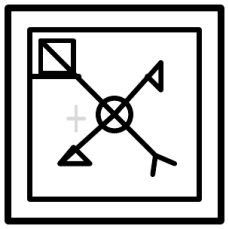


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(c)



(d)



Q39. Select the correct mirror image of the given combination when the mirror is placed at MN as shown below.



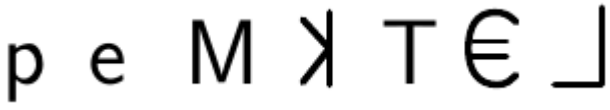
(a)



(b)



(c)

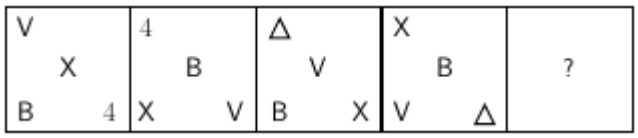


(d)

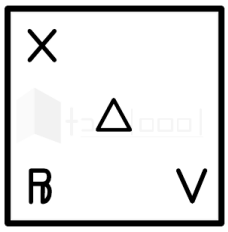


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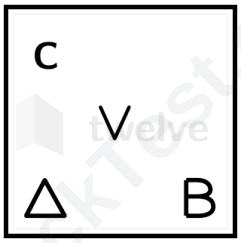
Q40. Which figure should replace the question mark (?) if the following figure series were to be continued?



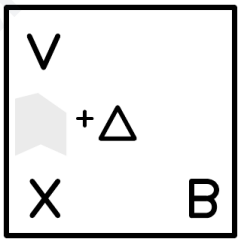
(a)



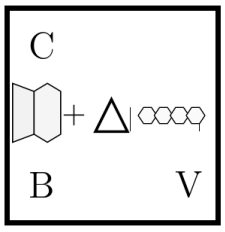
(b)



(c)



(d)



Q41. Three statements are followed by conclusions numbered I, II. You have to consider these statements to be true, even if they seem to be at variance with commonly known facts. Decide which of the given conclusions logically follow/s from the given statement.

Statements:

All fire is water.

Some water is earth.

No earth is air.

Conclusion (I): Some fire is earth.

Conclusion (II): Some fire is air.

(a) Only conclusion (II) follows.

(b) Both conclusions (I) and (II) follow.

(c) Only conclusion (I) follows.

(d) Neither conclusion (I) nor (II) follows

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Q42. Three of the following four are alike in a certain way and thus form a group. Which is the one that does NOT belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

(a) JMN
(b) TWY
(c) BEG
(d) MPR

Q43. In a certain code language. ‘SORT' is coded as '4698' and ‘RUST' is coded as '6429'. How is 'O' coded in the given language?

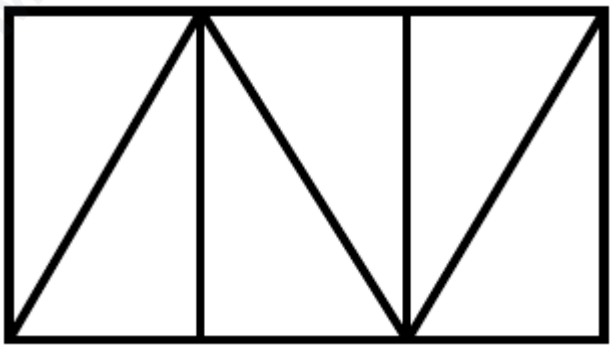
(a) 4
(b) 8
(c) 6
(d) 9

Q44. What should come in place of the question mark (?) in the given series?

3, 10, 24, ?, 73, 108, 150, 199

(a) 35
(b) 40
(c) 30
(d) 45

Q45. How many triangles are there in the following figure?



(a) 6
(b) 7
(c) 5
(d) 8

Q46. 9 is related to 47 following a certain logic. Following the same logic, 12 is related to 62. To which of the following is 17 related, following the same logic?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding/ subtracting /multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(a) 97
(b) 87
(c) 85
(d) 75

Q47. ‘A + B’ means ‘A is the brother of B’.

‘A – B’ means ‘A is the sister of B’.

‘A × B’ means ‘A is the father of B’.

‘A ÷ B’ means ‘A is the mother of B’.

Using the same meaning of the mathematical operators as given above, which of the following shows ‘P is the

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father's father of S'?

(a) P + Q – R ÷ S
(b) P – Q + R ÷ S
(c) P × Q × R + S
(d) P + Q ÷ R × S

Q48. Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(18, 7, 119)

(11, 9, 90)

(a) (12, 4, 44)
(b) (13, 5, 58)
(c) (16, 5, 65)
(d) (17, 6, 102)

Q49. Select the letter-cluster pair that best represents a similar relationship to the one expressed in the pairs of letter-clusters given below.

GKI : MQO

CGE : IMK

(a) LPN: RVT
(b) HLJ: NRO
(c) JOM: PUR
(d) RUT: VZX

Q50. What should come in place of the question mark (?) in the given series based on the English alphabetical order?

ECF, JHK, OMP, TRU, ?

(a) YWZ
(b) XYZ
(c) XVZ
(d) YVZ

QUANTITATIVE APTITUDE

Q51. Two offers were being made to Swaroop for a watch with a marked price of Rs. 1,600. Either two successive discounts of 20%, or two discounts of 30% and 10% after each other is offered. If Swaroop opted for the better plan over the other. how much more must he have saved?

(a) Rs. 16
(b) Rs. 30
(c) Rs. 22
(d) Rs. 35

Q52. Simplify the following:

3/2× 11/5÷ (25/44× 11/5)÷ 33/15=?

(a) 6/5
(b) 5/6
(c) 2/3
(d) 1/2

Q53. Two trains of lengths 310 m and 330 m, respectively, are 160 m apart. They start moving towards each other on parallel tracks, at speeds 130 km/h and 158 km/h, respectively. In how much time (in seconds) will the trains cross each other?

(a) 18

(b) 8
(c) 12
(d) 10

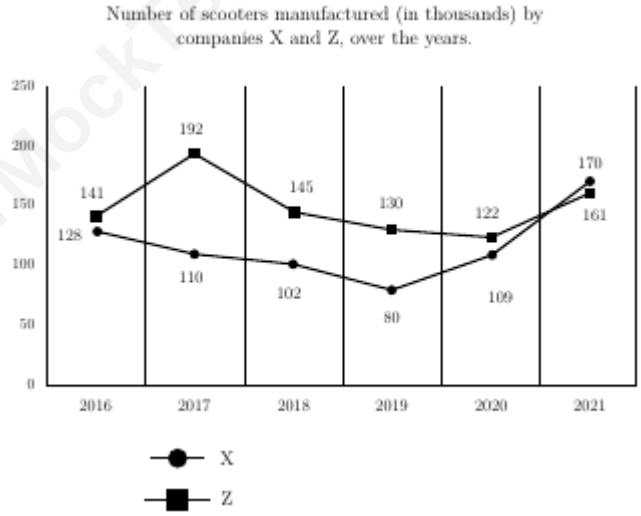
Q54. If $\sqrt{13}\sin\theta=2$, then the value of $(3\tan\theta+\sqrt{13}\sin\theta)/(\sqrt{13}\cos\theta-3\tan\theta)$ is:

(a) 3
(b) 2
(c) 4
(d) 0

Q55. The outer surface of a sphere having diameter 10 m is painted at the rate of Rs. $80/\pi$ per m^2. What is the cost of painting?

(a) Rs. 6,000
(b) Rs. 9,000
(c) Rs. 4,000
(d) Rs. 8,000

Q56. The given line graph shows the number of scooters manufactured (in thousands) by companies X and Z, over the years.



What is the average number of scooters manufactured by company X over the given period?

(a) 213000
(b) 256000
(c) 126500
(d) 116500

Q57. The radius and height of a cylinder are in the ratio 6 : 7 and its volume is 792 cm^3. Calculate its curved surface area in cm^2.

(a) 264
(b) 226
(c) 262
(d) 490

Q58. L and M are the mid points of sides AB and AC of a triangle ABC, respectively, and BC = 18 cm. If LM || BC, then find the length of LM (in cm).

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

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Q59. What is the number of digits required for numbering a book with 428 pages?

(a) 1500
(b) 1176
(c) 988
(d) 2000

Q60. A, B and C can complete a work in 12, 15 and 20 days, respectively. How many days are required to finish the work if they work together?

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

Q61. If the point of intersection of lines x + y = 2 and 2x - y = 1 lies on y = Kx + 5, what is the value of K?

(a) 4
(b) -3
(c) -4
(d) 3

Q62. A sum becomes Rs. 6,600 in 4 years at simple interest at a yearly interest rate of 5% per annum. What is the sum?

(a) Rs. 6,000
(b) Rs. 3,300
(c) Rs. 5,500
(d) Rs. 4,400

Q63. A man spends 35% of his monthly income on food and four-thirteenths of the remaining income on transport. He incurs some other expenses, but also saves Rs.6,300 per month, the latter being equal to 20% of the balance remaining just after spending on food and transport. What is his monthly income (in Rs.)?

(a) 63000
(b) 72,000
(c) 70,000
(d) 67500

Q64. The triangle has sides 3 cm, 4 cm and 5 cm. What is the length of the perpendicular from the opposite vertex to the side whose length is 5 cm?

(a) 1.4 cm
(b) 2.2 cm
(c) 3.5 cm
(d) 2.4 cm

Q65. Divide some money in the ratio Ravi, Reeta and Rahul that 5 (Part of Ravi) = 3 (Part of Reeta) =11 (Part of Rahul). The money ratio of Ravi : Reeta : Rahul is equal to:

(a) 11 ; 33 : 15
(b) 5 : 11 : 3
(c) 33 : 55 : 15
(d) 11 : 5 : 3

Q66. In ΔEFG, XY || FG, area of the quadrilateral XFGY = 44 m2. If EX : XF = 2 : 3, then find the area of ΔEXY (in m2).

(a) 8.10
(b) 8.38
(c) 9.46
(d) 7.28

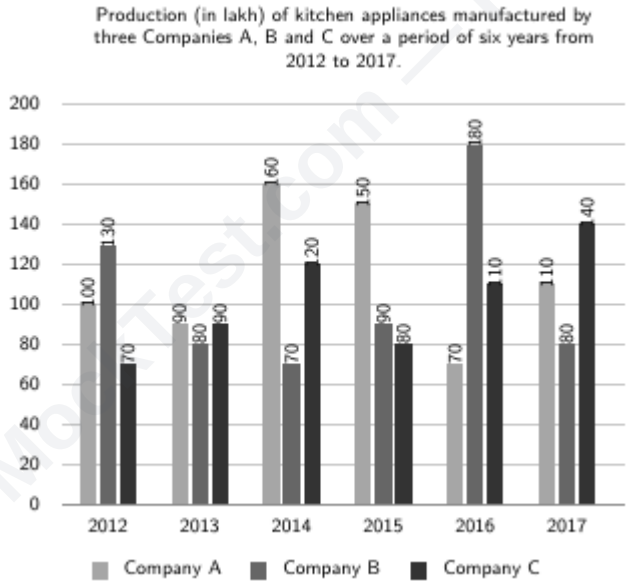
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Q67. In an election between two candidates, one got 65% of the total valid votes. 20% of the votes were invalid. If the total number of votes was 7,500, the number of valid votes that the other candidate got was:

(a) 1,700
(b) 1,900
(c) 2,100
(d) 4,300

Q68. Study the given bar-graph and answer the question that follows.

The bar-graph shows the production (in lakh) of kitchen appliances manufactured by three companies A, B, and C over a period of six years from 2012 to 2017.



80% of the combined average production of companies B and C is what percentage (to the nearest integer) more/less than 90% of the average production of company A, for the given period of 2012 to 2017?

(a) 19% less
(b) 19% more
(c) 21% more
(d) 21% less

Q69. Study the given table and answer the question that follows.

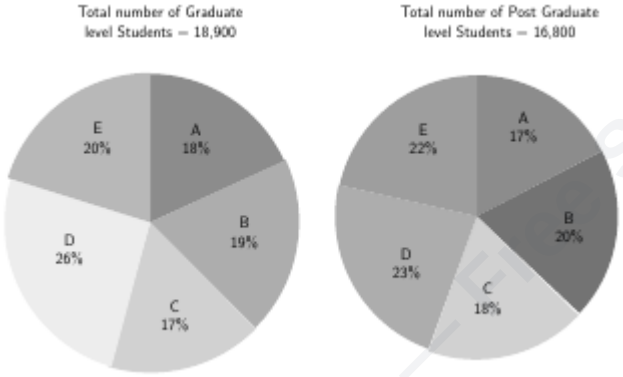
The table shows the number of students appeared and qualified (in thousands) district-wise in the EMCET examination in a state.

Year	A	B	C	D	E	F
	App/Qual	App/Qual	App/Qual	App/Qual	App/Qual	App/Qual
2014	40/21	50/35	60/29	50/37	45/22	48/32
2015	50/26	60/38	60/42	40/26	35/22	45/19
2016	55/42	35/22	48/26	50/30	55/27	60/19

The total percentage of students who qualified in the year 2016 (correct up to two decimals) is:

(a) 55.18%
(b) 54.78%
(c) 44.72%
(d) 52.82%

Q70. The given pie-charts show the distribution of Graduate and Post-Graduate level students in five different colleges A, B, C, D and E.



How many students of colleges A and B are studying at Graduate level?

(a) 4,520
(b) 5,987
(c) 6,993
(d) 7,052

Q71. In ΔABC the straight line parallel to the side BC meets AB and AC at the points P and Q, respectively. If AP = QC, the length of AB is 12 cm and the length of AQ is 2 cm, then the length (in cm) of CQ is:

(a) 2
(b) 4
(c) 6
(d) 3

Q72. In June, Rohit's bank account balance is Rs. 5,000 for 25 days, Rs. 20,000 for 2 days and Rs. 1,500 for 3 days. What is the average balance (in Rs.) in Rohit's bank account in June?

(a) 5650
(b) 6000
(c) 5200
(d) 5575

Q73. In ΔPQR, PR = 10 cm. Find the length of PT, where ST||QR. Given that PS = 6 cm and QS = 14 cm.

(a) 4 cm
(b) 2 cm
(c) 3 cm
(d) 1.5 cm

Q74. At the beginning of day 1 of a month, Rajesh has 500 eggs. He sells 20% of the eggs by the end of the day and added b% of the eggs at the beginning of the next day and sold 20% of the eggs at the end of the next day. This pattern continued up to the end of the third day of the month when he is left with 1024 eggs. The value of b is equal to:

(a) 20
(b) 500
(c) 100
(d) 10

Q75. The difference between the cost price and the selling price of an article is Rs. 1,800. If there is a profit of 20%, then the cost price of the article is:

(a) Rs. 9,000
(b) Rs. 7,000
(c) Rs. 11,000
(d) Rs. 8,000

GENERAL AWARENESS

Q76. Who among the following wrote the popular Telugu patriotic song 'Desamunu preminchumanna, manchi annadi penchumanna' meaning 'Love the nation, grow the goodness'?

(a) Bammera Potana
(b) Gurajada Apparao
(c) Sri Krishnadevaraya
(d) Goparaju Ramachandra Rao

Q77. In Kabaddi, a super tackle is when a raider is caught/self out/declared out with or less than how many defenders defending?

(a) Five
(b) Four
(c) Six
(d) Three

Q78. _____ has called the Right to Constitutional Remedy as the 'Soul of the Constitution'.

(a) Lal Lajpat Rai
(b) Bal Gangadhar Tilak
(c) Dr. BR Ambedkar
(d) Jawaharlal Nehru

Q79. In April 2023, India's External Affairs Minister S Jaishankar launched the project for restoration of which of the following ghats?

(a) Tulsi Ghat
(b) Assi Ghat
(c) Cheer Ghat
(d) Manikarnika Ghat

Q80. Bali Yatra, is a traditional cultural festival of which state?

(a) West Bengal
(b) Odisha
(c) Assam
(d) Bihar

Q81. On 9 August 2021, the Parliament had passed the Limited Liability Partnership (Amendment) Bill, 2021. It amended the:

(a) Limited Liability Partnership Act, 2008
(b) Limited Liability Partnership Act, 2004
(c) Limited Liability Partnership Act, 2016
(d) Limited Liability Partnership Act, 2012

Q82. Which of the following dynasties' genealogy was found in the Bijolia inscription?

(a) Chahamana
(b) Chandela
(c) Parmara
(d) Gahadavala

Q83. Which type of soil is found on about 40% of the total area of India?

(a) Red and Yellow soil
(b) Black soil
(c) Alluvial soil
(d) Laterite soil

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Q84. In which judgement did the Supreme Court extend the scope of Article 21 and observed that 'the Right to education flows directly from the Right to life'?

(a) Kharak Singh v State of UP
(b) Malak Singh v State of Punjab
(c) Neerja Choudhari v State of M. P
(d) Mohini Jain v State of Karnataka

Q85. Lakshmibai National Institute of Physical Education (LNIPE) is located at _____.

(a) Madhya Pradesh
(b) Punjab
(c) Uttar Pradesh
(d) Haryana

Q86. _____ at Market Price refers to the sum total of factor incomes earned by residents of a country during an accounting year including net indirect taxes.

(a) Net Domestic Product (NDP)
(b) Gross National Product (GNP)
(c) Net National Product (NNP)
(d) Gross Domestic Product (GDP)

Q87. Which of the following was a feature of the Indian economy before British rule?

(a) Dependent economy
(b) Independent economy
(c) Self-Sufficient Economy
(d) Prosperous economy

Q88. A distinctive cross-shaped constellation best seen in the northern hemisphere during the summer and fall months around September is:

(a) Cygnus
(b) Pegasus
(c) Ursa Major
(d) Cassiopeia

Q89. According the Census of India 2011, which group of states has the least urban population?

(a) Himachal Pradesh and Bihar
(b) Uttar Pradesh and Bihar
(c) Madhya Pradesh and Bihar
(d) Himachal Pradesh and Meghalaya

Q90. The Bist Doab Canal System and Makhu Canal System are associated with which state of India?

(a) Punjab
(b) Assam
(c) Uttar Pradesh
(d) Gujarat

Q91. In which year did Eric A. Cornell, Wolfgang Ketterle and Carl E. Wieman receive the Nobel Prize in Physics for the achieving 'Bose-Einstein condensation in dilute gases of alkali atoms'?

(a) 2001
(b) 2003
(c) 2000
(d) 2002

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Q92. How can you insert a blank row at the top of a worksheet?

(a) Click on the row number and press the Delete key on the keyboard
(b) Right-click on the row number and select Insert
(c) Drag the mouse on the row border to select the row and click Insert in the Cells group on the Home tab
(d) Click on the row number and press the Insert key on the keyboard.

Q93. In a dihybrid cross between two heterozygous fruit flies with brown bodies and red eyes (BbEe X BbEe), what will be the probability of getting BBEE genotype?

(a) 1/2
(b) 1/4
(c) 1/16
(d) 1/8

Q94. _____ was an Indian dancer and choreographer best known for creating a fusion style of dance adapting European theatrical techniques to Indian classical and folkdance forms.

(a) Smita Nagdev
(b) Shovana Narayan
(c) Ravi Shankar
(d) Uday Shankar

Q95. In Microsoft PowerPoint, what is the shortcut key combination to insert a new slide in a presentation?

(a) Ctrl + N
(b) Ctrl + D
(c) Ctrl + M
(d) Ctrl + I

Q96. Which of the following districts of India has the highest literacy rate as per Census 2011?

(a) Idukki
(b) Champhai
(c) Ernakulam
(d) Serchhip

Q97. Which of the following musical forms in Carnatic Classical is the simplest composition of raga?

(a) Pada
(b) Gitam
(c) Kirtnam
(d) Varnam

Q98. How many countries participated in the first Asian Games held in 1951?

(a) 16
(b) 11
(c) 24
(d) 20

Q99. Which of the following Articles was amended by The Constitution Fiftieth Amendment Act, 1984?

(a) Article 33
(b) Article 56
(c) Article 78
(d) Article 99

Q100. When did the first War of Indian Independence (Sepoy Mutiny) start?

(a) 1839
(b) 1857
(c) 1887
(d) 1819

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ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) That Macbook belongs to Xavier.

The correct answer is Option 3.

Key Points

• The primary issue in the sentence is the incorrect verb tense.

• The verb "belong" should be in the present tense "belongs" to agree with the singular subject "Macbook."

• The correct sentence structure should be "That Macbook belongs to Xavier," ensuring grammatical correctness and clarity.

Correct Sentence: "That Macbook belongs to Xavier."

Additional Information

• Option 1: "That Macbook is belonged to Xavier." - The verb phrase "is belonged" is incorrect as "belong" does not take a form like this.

• Option 2: "That Macbook belonging to Xavier." - This is a fragment and not a complete sentence.

• Option 4: "That Macbook is belong to Xavier." - This is grammatically incorrect as it combines "is" and "belong" incorrectly.

Q2. Answer: (b) B

The correct answer is Option 2.

Key Points

• The issue in the sentence is the incorrect use of the phrase "taken back."

• The correct phrase should be "taken aback," which means surprised or shocked.

• "Taken back" incorrectly implies being returned to a previous position.

Correct Sentence: "The teacher was taken aback by the audacity of the new student."

Additional Information

• Segment A: "The teacher was" - This part of the sentence is grammatically correct.

• Segment C: "the audacity of" - This part of the sentence is grammatically correct.

• Segment D: "the new student." - This part of the sentence is grammatically correct.

Q3. Answer: (d) The

The correct answer is Option 4.

Key Points

• The definite article "the" is used when referring to something specific or something that has already been mentioned.

• In this context, "the bed" refers to a specific bed that is known to both the speaker and the listener.

Correct Sentence: "The bed you sleep in is broken."

Additional Information

• Option 1: "On" - This is a preposition, not an article.

• Option 2: "An" - "An" is an indefinite article used before words that start with a vowel sound, not suitable here.

• Option 3: "A" - "A" is an indefinite article used before words starting with a consonant sound, not suitable here as the sentence

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refers to a specific bed.

Q4. Answer: (b) met my friend

The correct answer is Option 2.

Key Points

• The present perfect tense ("have met") should not be used with specific time expressions like "yesterday."

• The correct tense to use in this context is the simple past tense ("met").

Correct Sentence: "I met my friend yesterday."

Additional Information

• Option 1: "have been meeting" - This is the present perfect continuous tense and is incorrect for a single event that happened yesterday.

• Option 3: "had been meeting" - This is the past perfect continuous tense and would imply an ongoing action leading up to another past action, which is not suitable here.

• Option 4: "was meeting" - This is the past continuous tense and implies an action was in progress at a specific time in the past, which is not suitable for a completed action like meeting a friend once.

Q5. Answer: (d) believed

The solution is in Hindi. Read it online.

Q6. Answer: (c) little

The solution is in Hindi. Read it online.

Q7. Answer: (d) methods

The solution is in Hindi. Read it online.

Q8. Answer: (a) relevance

The solution is in Hindi. Read it online.

Q9. Answer: (c) merely

The solution is in Hindi. Read it online.

Q10. Answer: (b) Cause

The solution is in Hindi. Read it online.

Q11. Answer: (b) occurrence

The solution is in Hindi. Read it online.

Q12. Answer: (a) Pardon

The solution is in Hindi. Read it online.

Q13. Answer: (a) bit off more than I could chew

The solution is in Hindi. Read it online.

Q14. Answer: (c) think

The solution is in Hindi. Read it online.

Q15. Answer: (c) Elegant

The solution is in Hindi. Read it online.

Q16. Answer: (c) the fire alarm to go off

The correct answer is Option 3.

Key Points

• The phrase "go off" is commonly used to describe alarms starting to make noise.

• The other options do not make sense in this context.

Correct Sentence: "The wizard, while performing an item, accidentally set his own hat on fire and prompted the fire alarm to go off."

Additional Information

• Option 1: "the fire alarm to go under" - Incorrect, as it gives no meaning in this context.

• Option 2: "the fire alarm to go away" - Incorrect, as it suggests the alarm should disappear or stop, which is not the intended

meaning.

• Option 4: "the fire alarm to go above" - Incorrect, as it gives no relevant meaning in this context.

Q17. Answer: (c) through

The correct answer is Option 3.

Key Points

• The preposition "through" is used to indicate movement within something with boundaries, such as a forest.

• Other options do not correctly convey the idea of passing inside the forest.

Correct Sentence: "It will take two hours to walk through the forest."

Additional Information

• Option 1: "away" - Incorrect, as it suggests moving to a distance but not through the forest.

• Option 2: "between" - Incorrect, as it denotes a position between two points but not movement within the forest.

• Option 4: "over" - Incorrect, as it suggests moving above the forest, not within it.

Q18. Answer: (c) set off

The correct answer is Option 3.

Key Points

• The phrase "set off" means to begin a journey.

• Other options do not convey the correct meaning of starting a journey.

Correct Sentence: "We set off on the journey early in the morning."

Additional Information

• Option 1: "set about" - This phrase means to start doing something, but it is more commonly used with tasks or activities, not journeys.

• Option 4: "set in" - This phrase means to begin and become established, often used with weather or conditions, not starting a journey.

Q19. Answer: (d) mild

The solution is in Hindi. Read it online.

Q20. Answer: (b) whole

The solution is in Hindi. Read it online.

Q21. Answer: (b) In a bad condition

The solution is in Hindi. Read it online.

Q22. Answer: (c) make

The solution is in Hindi. Read it online.

Q23. Answer: (c) embarrass

The solution is in Hindi. Read it online.

Q24. Answer: (d) Riveting

The correct answer is 4) Riveting.

Key Points

• The word “dull” means boring, uninteresting, or lacking excitement.

• An antonym should therefore convey the opposite meaning—very interesting or exciting.

• Charming – pleasant or attractive, but not necessarily exciting ?

• Diverting – entertaining, but comparatively mild ?

• Plodding – slow and boring (similar to dull) ?

• Riveting – extremely interesting and exciting ?

• Hence, “riveting” is the most appropriate antonym of “dull.”

Q25. Answer: (c) entering without permission

The correct answer is Option 3.

Key Points

• Trespassing refers to "entering without permission" onto someone else’s property.

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• The other options do not accurately convey the meaning of trespassing.

Correct Sentence: "You can be sentenced for entering without permission on someone else's property."

Additional Information

• Option 1: "leaving without permission" - Incorrect, as it refers to exiting, not entering a property.

• Option 2: "showing unselfish devotion" - Incorrect, as it does not relate to the concept of trespassing.

• Option 4: "conspiring against others" - Incorrect, as it means plotting against someone, which is unrelated to the physical act of trespassing.

Q26. Answer: (c) 1300

The logic followed here is,

Hence, the correct answer is "1300".

Q27. Answer: (a) 4

According to the given information,

Here, we can see that the code for 'B' is '4'.

Hence, the correct answer is "4".

Q28. Answer: (c) [figure]

The correct mirror image of the given figure is:

Hence, the correct answer is "Option 3".

Q29. Answer: (c) [figure]

When the paper is unfolded, we get,

Hence, the correct answer is "Option 3".

Q30. Answer: (c) Eight

Given word: 'FRAMED'

After arranged in alphabetical order:

Alphabets	F	R	A	M	E	D
Alphabetical order	A	D	E	F	M	R

After arranged in alphabetical order,

Second alphabet from the left end is: D,

Second alphabet from the right end is: M,

Now,

there are 8 letters between D and M.

D	E	F	G	H	I	J	K	L	M

Hence, the correct answer is "Option 3".

Q31. Answer: (a) Polite : Courteous

html

The logic followed here is:

Logic: Synonyms

Here,

Happy : Ecstatic → Ecstatic is a synonym for Happy.

Similarly,

Polite : Courteous → Courteous is a synonym for Polite.

Hence, the correct answer is "Option 1".

Q32. Answer: (a) MJG

The logic followed here is,

Hence, the correct answer is "Option 1".

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Q33. Answer: (a) 108

Given Equation: 11 B 11 D 68 A 4 C 4 = ?

BODMAS Rule:

Decoding the given information:

Alphabet	A	B	C	D
Meaning	÷	×	•	•

Now replacing the sign from left to right using BODMAS Rule, we get:

=> 11 × 11 - 68 ÷ 4 + 4 = ?

=> 121 - 17 + 4 = ?

=> 125 - 17 = 108.

Hence, the correct option is "Option 1".

Q34. Answer: (c) 770

Given Equation: 95 B 8 D 12 A 2 C 16 = ?

BODMAS Rule:

Decoding the given information:

Alphabet	A	B	C	D
Meaning	÷	×	•	•

Now replacing the sign from left to right using BODMAS Rule, we get:

=> 95 × 8 - 12 ÷ 2 + 16 = ?

=> 95 × 8 - 6 + 16 = ?

=> 760 - 6 + 16 = ?

=> 776 - 6 = 770.

Hence, the correct option is "Option 3".

Q35. Answer: (d) 4

Given word: 'JUSTICE'

After arranged in alphabetical order:

Alphabets	J	U	S	T	I	C	E
Alphabetical order	C	E	I	J	S	T	U

After arranged in alphabetical order,

Second alphabet from the left end is: E,

Fourth alphabet from the right end is: J,

Now,

there are 4 letters between E and J.

E	F	G	H	I	J

Hence, the correct answer is "Option 4".

Q36. Answer: (c) 1832

Given equation: 90 – 10 × 36 + 52 ÷ 49 = ?

Sign	•	–
Interchange with	×	÷

After replacing the sign, the equation we get:

→ 90 ÷ 10 + 36 × 52 – 49 = ?

→ 9 + 36 × 52 – 49 = ?

→ 9 + 1872 – 49 = ?

→ 1881 – 49 = 1832

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Hence, the correct answer is "Option 3".

Q37. Answer: (b) [figure]

The correct mirror image of the given figure is:

Hence, the correct answer is "Option 2".

Q38. Answer: (d) [figure]

Let's check each option,

Hence, the correct answer is "Option 4".

Q39. Answer: (c) [figure]

The correct mirror image of the given figure is:

Hence, the correct answer is "Option 3".

Q40. Answer: (d) [figure]

The logic followed here is:

Logic: Step 1 and Step 2 are being followed on alternate basis. The number/symbol on the topmost left corner gets replaced with a new number/symbol whenever Step 2 is followed.

Hence, the correct answer is "Option 4".

Q41. Answer: (d) Neither conclusion (I) nor (II) follows

The least possible venn diagram is shown below,

Conclusion (I): Some fire is earth → False (All fire is water, and some water is earth implies that it is possible that some fire is earth but not definite).

Conclusion (II): Some fire is air → False (All fire is water, some water is earth and no earth is air implies that it is possible that some fire is air but not definite).

So, Neither conclusion (I) nor (II) follows.

Hence, the correct answer is "Option 4".

Q42. Answer: (a) JMN

The logic followed here is,

1) JMN

=> Different from others.

2) TWY

3) BEG

4) MPR

Hence, the correct answer is "JMN".

Q43. Answer: (b) 8

According to the given information,

Here, we can see that the code for 'O' is '8'.

Hence, the correct answer is "8".

Q44. Answer: (d) 45

The logic followed here is,

Hence, the correct answer is "45".

Q45. Answer: (d) 8

Let's count the number of triangles in the given figure,

Hence, the correct answer is "8".

Q46. Answer: (b) 87

The logic followed here is:

Logic: (1st number × 5) + 2 = 2nd number.

Now,

For, 9 : 47

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=> (9 × 5) + 2 = 45 + 2 = 47.

For, 12 : 62

=> (12 × 5) + 2 = 60 + 2 = 62.

Similarly, for 17 : ?

=> (17 × 5) + 2 = 85 + 2 = 87.

Hence, the correct answer is "Option 2".

Q47. Answer: (c) P × Q × R + S

Preparing the family tree using the following symbols,

Code	•	•	×	÷
Relation	Brother	Sister	Father	Mother

Let's check each option,

1) P + Q – R ÷ S

→ P is the mother's brother of S.

2) P – Q + R ÷ S

→ P is the mother's sister of S.

3) P × Q × R + S

→ P is the father's father of S.

4) P + Q ÷ R × S

→ P is the grandmother's brother of S.

Hence, the correct answer is "Option 3".

Q48. Answer: (a) (12, 4, 44)

The logic followed here is:

Logic: (1st number - 1) × 2nd number = 3rd number.

Now,

For, 18, 7, 119:

=> (18 - 1) × 7 = 17 × 7 = 119.

For, 11, 9, 90:

=> (11 - 1) × 9 = 10 × 9 = 90.

Similarly, for 12, 4, 44:

=> (12 - 1) × 4 = 11 × 4 = 44.

Hence, the correct answer is "Option 1".

Q49. Answer: (a) LPN: RVT

The logic followed here is,

GKI : MQO

CGE : IMK

Similarly, for Option 1) LPN: RVT

Hence, the correct answer is "Option 1".

Q50. Answer: (a) YWZ

The logic followed here is,

Hence, the correct answer is "YWZ".

Q51. Answer: (a) Rs. 16

Given:

Marked price of the watch = Rs. 1,600

Discount options:

Option 1: Two successive discounts of 20%

Option 2: Two successive discounts of 30% and 10%

Formula Used:

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Final Price after successive discounts = Marked Price × (1 - Discount1) × (1 - Discount2)
Calculation:
Option 1: Two successive discounts of 20%
Discount1 = 20% = 0.20
Discount2 = 20% = 0.20
Final Price = 1600 × (1 - 0.20) × (1 - 0.20)
Final Price = 1600 × 0.80 × 0.80
Final Price = 1600 × 0.64
Final Price = 1024
Option 2: Two successive discounts of 30% and 10%
Discount1 = 30% = 0.30
Discount2 = 10% = 0.10
Final Price = 1600 × (1 - 0.30) × (1 - 0.10)
Final Price = 1600 × 0.70 × 0.90
Final Price = 1600 × 0.63
Final Price = 1008
Swaroop would choose the plan with the lower final price.
Savings in Option 1 = 1600 - 1024 = 576
Savings in Option 2 = 1600 - 1008 = 592
Extra savings by choosing Option 2 = 592 - 576
Extra savings = 16
Swaroop must have saved Rs. 16 more.

Q52. Answer: (a) 6/5

Given:
Simplify: 3/2 × 11/5 ÷ (25/44 × 11/5) ÷ 33/15
Calculation:
Step 1: Simplify the expression inside the parentheses:
25/44 × 11/5 = (25 × 11)/(44 × 5) = 275/220 = 5/4
Step 2: The expression now becomes:
3/2 × 11/5 ÷ 5/4 ÷ 33/15
Step 3: Simplify the division operations:
11/5 ÷ 5/4 = 11/5 × 4/5 = 44/25
Step 4: The expression now becomes:
3/2 × 44/25 ÷ 33/15
Step 5: Simplify the next division:
44/25 ÷ 33/15 = 44/25 × 15/33 = (44 × 15)/(25 × 33) = 660/825 = 4/5
Step 6: Final multiplication:
3/2 × 4/5 = 12/10 = 6/5
Therefore The simplified value is 6/5.

Q53. Answer: (d) 10

Given:
Length of Train 1 = 310 m
Length of Train 2 = 330 m
Distance between trains = 160 m
Speed of Train 1 = 130 km/h
Speed of Train 2 = 158 km/h
Formula Used:
Relative Speed when two objects move towards each other = Speed of Train 1 + Speed of Train 2
Time = Total distance / Relative Speed
Calculation:

Convert speeds from km/h to m/s:
Speed of Train 1 in m/s = 130 × (1000/3600)
Speed of Train 1 in m/s = 130 × (5/18)
Speed of Train 1 in m/s = 36.11 m/s
Speed of Train 2 in m/s = 158 × (1000/3600)
Speed of Train 2 in m/s = 158 × (5/18)
Speed of Train 2 in m/s = 43.89 m/s
Relative Speed = 36.11 + 43.89
Relative Speed = 80 m/s
Total distance to be covered = Length of Train 1 + Length of Train 2 + Distance between trains
Total distance = 310 + 330 + 160
Total distance = 800 m
Time = Total distance / Relative Speed
Time = 800 / 80
=> Time = 10 seconds
The correct answer is option 4.

Q54. Answer: (c) 4

Given:
$\sqrt{13} \sin\theta = 2$
We need to find the value of:
$(3 \tan\theta + \sqrt{13} \sin\theta) / (\sqrt{13} \cos\theta - 3 \tan\theta)$
Formula used:
We can use the following trigonometric identities:
$\sin^2\theta + \cos^2\theta = 1$
$\tan\theta = \sin\theta / \cos\theta$
Calculation:
From the given equation:
$\sqrt{13} \sin\theta = 2 \rightarrow \sin\theta = 2 / \sqrt{13}$
Now, using $\sin^2\theta + \cos^2\theta = 1$, find $\cos\theta$:
$\cos^2\theta = 1 - (2 / \sqrt{13})^2$
$\cos^2\theta = 1 - 4 / 13 = 9 / 13$
$\cos\theta = 3 / \sqrt{13}$
Now, calculate $\tan\theta$:
$\tan\theta = \sin\theta / \cos\theta = (2 / \sqrt{13}) / (3 / \sqrt{13}) = 2 / 3$
Substitute these values into the given expression:
$(3 \tan\theta + \sqrt{13} \sin\theta) / (\sqrt{13} \cos\theta - 3 \tan\theta) = (3 \times (2 / 3) + 2) / (3 - 2)$
$= (2 + 2) / 1 = 4$
Therefore The value of the expression is 4.

Q55. Answer: (d) Rs. 8,000

Given:
Diameter of the sphere = 10 m
Rate of painting = Rs. $(80/\pi)$ per m^2
Formula Used:
Surface Area of Sphere = $4\pi r^2$
Cost of painting = Surface Area × Rate per m^2
Calculation:
Radius (r) = Diameter / 2
r = 10 / 2
r = 5 m
Surface Area of Sphere = $4\pi(5)^2$

Surface Area = 4π(25)
Surface Area = 100π m²
Cost of painting = Surface Area × Rate per m²
Cost = 100π × (80/π)
Cost = 100 × 80
Cost = 8000
The cost of painting is Rs. 8,000.

Q56. Answer: (d) 116500

Calculation:
Total number of scooters = 128 + 110 + 102 + 80 + 109 + 170 = 699000
Number of years = 6
Average = 699000 / 6 = 116500
Therefore The average number of scooters manufactured by Company X over the given period is 116500.

Q57. Answer: (a) 264

Given:
The ratio of the radius to the height of the cylinder = 6 : 7
Volume of the cylinder = 792 cm³
Formula used:
Volume of a cylinder = πr²h
Curved surface area of a cylinder = 2πrh
Calculation:
Let the common ratio be x.
Then, the radius r = 6x and the height h = 7x.
Using the volume formula:
π(6x)²(7x) = 792
=> π × 36x² × 7x = 792
=> 252πx³ = 792
Take π as 22/7:
=> 252 × 22/7 × x³ = 792
=> 792x³ = 792
=> x³ = 1
=> x = 1
Thus, radius r = 6x = 6 × 1 = 6 cm
And height h = 7x = 7 × 1 = 7 cm
Now, calculate the curved surface area:
Curved surface area = 2πrh = 2 × 22/7 × 6 × 7
= 2 × 22 × 6
= 264 cm²
Therefore The curved surface area of the cylinder is 264 cm².

Q58. Answer: (b) 9

Given:
L and M are the midpoints of sides AB and AC of a triangle ABC, respectively.
BC = 18 cm.
LM || BC.
Formula Used:
In a triangle, the line segment joining the midpoints of two sides is parallel to the third side and is half its length.
Calculation:
Since L and M are the midpoints of AB and AC, respectively, and LM || BC:
LM = 1/2 BC
BC = 18 cm

=> LM = 1/2 × 18

=> LM = 9 cm

The length of LM is 9 cm.

Q59. Answer: (b) 1176

Given:

Total number of pages = 428

Formula Used:

Total digits required = (Number of pages with 1 digit) + (Number of pages with 2 digits × 2) + (Number of pages with 3 digits × 3)

Calculation:

Pages with 1 digit: 1 to 9

Number of pages = 9

Digits required = 9

Pages with 2 digits: 10 to 99

Number of pages = 99 - 10 + 1

Number of pages = 90

Digits required = 90 × 2

Digits required = 180

Pages with 3 digits: 100 to 428

Number of pages = 428 - 100 + 1

Number of pages = 329

Digits required = 329 × 3

Digits required = 987

Total digits required = 9 + 180 + 987

=> Total digits required = 1176

The total number of digits required for numbering a book with 428 pages is 1176.

Q60. Answer: (c) 5 days

Given:

Time taken by A to complete the work = 12 days

Time taken by B to complete the work = 15 days

Time taken by C to complete the work = 20 days

Formula used:

Time required to complete the work when A, B, and C work together = 1 / (Total work done by A, B, and C together in 1 day)

Calculation:

Work done by A in 1 day = 1 / 12

Work done by B in 1 day = 1 / 15

Work done by C in 1 day = 1 / 20

Total work done by A, B, and C together in 1 day = 1 / 12 + 1 / 15 + 1 / 20

Finding a common denominator:

LCM of 12, 15, and 20 = 60

Work done by A, B, and C together in 1 day = (5 + 4 + 3) / 60 = 12 / 60 = 1 / 5

Time required to complete the work = 1 / (1 / 5) = 5 days

Therefore The work will be completed in 5 days if A, B, and C work together.

Q61. Answer: (c) -4

Given:

Equations of the lines: x + y = 2 and 2x - y = 1.

The line on which the intersection point lies: y = Kx + 5.

Formula Used:

Substitute the point of intersection into the line equation to find K.

Calculation:

First, find the intersection point of the lines x + y = 2 and 2x - y = 1.

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Add the equations:

x + y + 2x - y = 2 + 1

=> 3x = 3

=> x = 1

Substitute x = 1 into x + y = 2:

1 + y = 2

=> y = 1

So, the point of intersection is (1, 1).

Substitute (1, 1) into y = Kx + 5:

1 = K × 1 + 5

=> 1 = K + 5

=> K = 1 - 5

=> K = -4

The value of K is -4.

Q62. Answer: (c) Rs. 5,500

Given:

Future Value (A) = Rs. 6,600

Time (T) = 4 years

Rate of interest (R) = 5% per annum

Formula Used:

Simple Interest (SI) = Principal (P) × Rate (R) × Time (T) / 100

Future Value (A) = Principal (P) + Simple Interest (SI)

Calculation:

Let Principal (P) be the sum we need to find.

Future Value (A) = Principal (P) + SI

SI = P × 5 × 4 / 100

SI = P × 20 / 100

SI = 0.2P

Future Value (A) = P + 0.2P

Rs. 6,600 = P + 0.2P

Rs. 6,600 = 1.2P

=> P = Rs. 6,600 / 1.2

=> P = Rs. 5,500

The sum is Rs. 5,500.

Q63. Answer: (c) 70,000

Given:

A man spends 35% of his monthly income on food and four-thirteenths of the remaining income on transport. He incurs some other expenses, but also saves Rs.6,300 per month, the latter being equal to 20% of the balance remaining just after spending on food and transport.

Formula Used:

1. Remaining income after food = Total income - (35% of Total income)

2. Remaining income after transport = Remaining income after food - (4/13 of Remaining income after food)

3. Savings = 20% of Remaining income after transport

Calculation:

Let the monthly income be Rs. x.

1. Expenditure on food = 35% of x

Expenditure on food = 0.35x

2. Remaining income after food = x - 0.35x

Remaining income after food = 0.65x

3. Expenditure on transport = 413413413413 of 0.65x

Expenditure on transport = 0.2x

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4. Remaining income after transport = 0.65x - 0.2x
Remaining income after transport = 0.45x
5. Savings = 20% of 0.45x
0.2 × 0.45x = 6300
0.09x = 6300
=> x = 63000.0963000.0963000.0963000.09
=> x = 70000
The monthly income is Rs. 70,000.

Q64. Answer: (d) 2.4 cm

Given:
The triangle has sides of length 3 cm, 4 cm, and 5 cm.
The side whose length is 5 cm is the base.
Formula used:
This is a right-angled triangle (since $3^2 + 4^2 = 5^2$).
The length of the perpendicular (height) can be calculated using the area formula:
Area of triangle = ½ × base × height
For a right-angled triangle, the area can also be calculated using the other two sides (which are the height and base):
Area = ½ × 3 × 4
Now, equate this to ½ × 5 × height to find the height (perpendicular).
Calculation:
Area = ½ × 3 × 4 = 6 cm^2
Let the height be h.
Then, 6 = ½ × 5 × h
=> 6 = 5h / 2
=> h = (6 × 2) / 5
=> h = 12 / 5
=> h = 2.4 cm
Therefore The length of the perpendicular from the opposite vertex to the side whose length is 5 cm is 2.4 cm.

Q65. Answer: (c) 33 : 55 : 15

Given:
The money is divided such that:
5 (Part of Ravi) = 3 (Part of Reeta) = 11 (Part of Rahul)
Formula used:
Let's assume:
Part of Ravi = x
Part of Reeta = y
Part of Rahul = z
We have:
5x = 3y = 11z
To find the ratio, express x, y, and z in terms of a common variable k:
x = k/5
y = k/3
z = k/11
The ratio Ravi : Reeta : Rahul is equal to x : y : z.
Calculation:
Find a common multiple for the denominators 5, 3, and 11, which is 165.
So, multiply each part by 165:
Ravi's share = (k/5) × 165 = 33k
Reeta's share = (k/3) × 165 = 55k
Rahul's share = (k/11) × 165 = 15k

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Therefore, the ratio Ravi : Reeta : Rahul is:
Therefore Ravi : Reeta : Rahul = 33 : 55 : 15

Q66. Answer: (b) 8.38

Given:
In ΔEFG, XY || FG, area of the quadrilateral XFGY = 44 m².
EX : XF = 2 : 3
Formula Used:
Area of ΔEXY = (EX/EF)² × Area of ΔEFG
Calculation:
Let EF = EX + XF
Let EX = 2k and XF = 3k
Then, EF = 2k + 3k = 5k
Ratio of EX to EF = EX/EF = 2k/5k = 2/5
Since XY || FG, ΔEXY ~ ΔEFG (similar triangles)
Area of ΔEFG = Area of ΔEXY + Area of quadrilateral XFGY
Area of ΔEFG = Area of ΔEXY + 44
Ratio of areas of similar triangles = (Ratio of corresponding sides)²
Therefore, (Area of ΔEXY) / (Area of ΔEFG) = (EX/EF)²
(Area of ΔEXY) / (Area of ΔEFG) = (2/5)²
(Area of ΔEXY) / (Area of ΔEFG) = 4/25
Let Area of ΔEFG = A
Then, Area of ΔEXY = (4/25) × A
A = (4/25) × A + 44
=> A - (4/25) × A = 44
=> (21/25) × A = 44
=> A = 44 × (25/21)
=> A = 52.38
Area of ΔEXY = (4/25) × 52.38
=> Area of ΔEXY = 8.38 m²
The area of ΔEXY is 8.38 m².

Q67. Answer: (c) 2,100

Shortcut Trick
Other candidate's votes = Total Votes × Valid Votes % × Other Candidate's Share %
=> Other candidate's votes = 7500 × (100 − 20)% × (100 − 65)%
=> Other candidate's votes = 7500 × 80% × 35%
=> Other candidate's votes = 7500 × 0.80 × 0.35
=> Other candidate's votes = 6000 × 0.35 = 2100
Therefore The correct answer is 2,100.
Alternate Method
Given:
Total number of votes = 7,500
Percentage of invalid votes = 20%
Percentage of valid votes the winner got = 65%
Calculation:
=> Total invalid votes = 20% of 7,500 = (20 ÷ 100) × 7,500 = 1,500
=> Total valid votes = 7,500 − 1,500 = 6,000
=> Percentage of valid votes the other candidate got = 100% − 65% = 35%
=> Number of valid votes the other candidate got = 35% of 6,000
=> Number of valid votes = (35 ÷ 100) × 6,000
=> Number of valid votes = 35 × 60 = 2,100

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Therefore The correct answer is 2,100.

Additional Information

Valid and Invalid Votes

In any election, the Total Votes Polled = Valid Votes + Invalid Votes. Only the valid votes are counted towards determining the winner or loser.

Percentage Splitting

When a total quantity is split into multiple parts, the sum of percentages of all parts must equal 100%. If one candidate gets X% of valid votes, the other candidate receives (100 − X)% of valid votes.

Successive Percentage Strategy

For dependent percentage values, you can multiply the base continuously: Final Value = Base × (100 − % Invalid)/100 × (Share %)/100. This directly gives the required share without intermediate steps.

Q68. Answer: (a) 19% less

Given:

Production data of kitchen appliances (in lakh) for Companies A, B, and C over the years 2012 to 2017.

Calculation:

Average production of A:

Total production of A = 100 + 90 + 160 + 150 + 70 + 110 = 680 lakh

Average production of A = 680 / 6 ≈ 113.33 lakh

90% of Average production of A = 0.9 × 113.33 ≈ 102 lakh

Average production of B:

Total production of B = 130 + 80 + 70 + 90 + 180 + 80 = 630 lakh

Average production of B = 630 / 6 = 105 lakh

Average production of C:

Total production of C = 70 + 90 + 120 + 80 + 110 + 140 = 610 lakh

Average production of C = 610 / 6 ≈ 102 lakh

Combined average production of B and C = 105 + 102 = 207 lakh

Average production of B and C together = 207/2 = 103.5 ≈ 104

80% of Combined average production of B and C = 0.8 × 104 ≈ 83 lakh

Percentage more:

Difference = 102 - 83 = 19 lakh

Percentage more = (19 / 102) × 100 ≈ 19%

Therefore 80% of the combined average production of companies B and C is approximately 19% less than 90% of the average production of company A.

Q69. Answer: (b) 54.78%

Calculation:

Total number of students who appeared in 2016 = 55 + 35 + 48 + 50 + 55 + 60 = 303 thousand

Total number of students who qualified in 2016 = 42 + 22 + 26 + 30 + 27 + 19 = 166 thousand

Total percentage of students who qualified = (166 / 303) × 100 ≈ 54.78%

Therefore The total percentage of students who qualified in the year 2016 is approximately 54.78%.

Q70. Answer: (c) 6,993

Calculation:

Number of students in College A = (18 / 100) × 18,900 = 3,402

Number of students in College B = (19 / 100) × 18,900 = 3,591

Total number of students in Colleges A and B = 3,402 + 3,591 = 6,993

Therefore The total number of students studying at the Graduate level in Colleges A and B is 6,993.

Q71. Answer: (b) 4

Given:

In ΔABC, a straight line parallel to the side BC meets AB and AC at points P and Q, respectively.

It is given that AP = QC, AB = 12 cm, and AQ = 2 cm.

Formula used:

Since the line PQ is parallel to BC, triangles ΔAPQ and ΔABC are similar.
For similar triangles, the corresponding sides are proportional.
Calculation:
Since AP = QC and AQ = 2 cm, let QC = x cm.
In triangle ΔAPQ and ΔABC, we have:
AP / AB = AQ / AC
Given that AP = QC and AB = 12 cm:
x / 12 = 2 / (x + 2)
Cross-multiply to solve for x:
x(x + 2) = 24
=> $x^2 + 2x - 24 = 0$
=> $x^2 + 6x - 4x - 24 = 0$
=> x(x + 6) - 4(x + 6) = 0
=> (x + 6)(x - 4)
=> x = 4 or - 6
Hence, CQ = x = 4 cm
Therefore The length of CQ is 4 cm.

Q72. Answer: (a) 5650

Given:
Rohit's bank account balance for 25 days = Rs. 5,000
Rohit's bank account balance for 2 days = Rs. 20,000
Rohit's bank account balance for 3 days = Rs. 1,500
Formula Used:
Average Balance = (Sum of (Balance × Number of Days)) / Total Number of Days
Calculation:
Sum of (Balance × Number of Days) = (5000 × 25) + (20000 × 2) + (1500 × 3)
Sum of (Balance × Number of Days) = 125000 + 40000 + 4500
Sum of (Balance × Number of Days) = 169500
Total Number of Days = 25 + 2 + 3
Total Number of Days = 30
Average Balance = 169500 / 30
=> Average Balance = 5650
The average balance in Rohit's bank account in June is Rs. 5650.

Q73. Answer: (c) 3 cm

Given:
In ΔPQR, PR = 10 cm
ST||QR
PS = 6 cm
QS = 14 cm
Formula Used:
In similar triangles, the ratios of the corresponding sides are equal.
Calculation:
Since ST||QR, ΔPST ~ ΔPQR
PS/PQ = PT/PR
Let PT = x cm
PQ = PS + QS
PQ = 6 + 14
PQ = 20 cm
Using the similarity ratio:
6/20 = x/10

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=> 6 × 10 = 20 × x

=> 60 = 20x

=> x = 60/20

=> x = 3 cm

The length of PT is 3 cm.

Q74. Answer: (c) 100

Given:

Rajesh starts with 500 eggs. He sells 20% of the eggs at the end of each day and adds b% of the remaining eggs at the beginning of the next day. At the end of the third day, he is left with 1024 eggs.

Formula used:

At the end of each day:

Remaining eggs after selling 20% = 80% of the eggs

New number of eggs at the beginning of the next day = 80% of the remaining eggs + b% of the remaining eggs

Calculation:

Day 1:

Rajesh starts with 500 eggs.

After selling 20%, remaining eggs = 80% of 500 = (80 / 100) × 500 = 400 eggs.

Day 2:

At the beginning of day 2, Rajesh adds b% of the remaining eggs:

Number of eggs at the start of day 2 = 400 + (b / 100) × 400 = 400(1 + b / 100)

After selling 20% of the eggs on day 2, remaining eggs = 80% of [400(1 + b / 100)] = (80 / 100) × 400(1 + b / 100) = 320(1 + b / 100)

Day 3:

At the beginning of day 3, Rajesh adds b% of the remaining eggs:

Number of eggs at the start of day 3 = 320(1 + b / 100) + (b / 100) × 320(1 + b / 100) = 320(1 + b / 100)(1 + b / 100) = 320(1 + b / 100)²

After selling 20% of the eggs on day 3, remaining eggs = 80% of 320(1 + b / 100)² = (80 / 100) × 320(1 + b / 100)² = 256(1 + b / 100)²

At the end of the third day, he is left with 1024 eggs:

256(1 + b / 100)² = 1024

Dividing both sides by 256:

(1 + b / 100)² = 4

Taking the square root of both sides:

1 + b / 100 = 2

b / 100 = 1

b = 100%

Therefore The value of b is 100%.

Q75. Answer: (a) Rs. 9,000

Shortcut Trick

Profit = 20% = 1/5

Here, Cost Price = 5 units and Profit = 1 unit.

The difference between Selling Price and Cost Price is the Profit itself.

=> 1 unit = Rs. 1800

=> Cost Price (5 units) = 5 × 1800 = Rs. 9000

Therefore The correct answer is Rs. 9,000.

Alternate Method

Given:

Difference between Cost Price (CP) and Selling Price (SP) = Rs. 1800

Profit percentage = 20%

Formula Used:

Profit = SP − CP

Profit = (Profit% ÷ 100) × CP

Calculations:

=> Since there is a profit, the difference between SP and CP is the profit.

=> Profit = Rs. 1800

=> 20% of CP = 1800

=> (20 ÷ 100) × CP = 1800

=> CP = 1800 × (100 ÷ 20)

=> CP = 1800 × 5 = 9000

Therefore The correct answer is Rs. 9,000.

Additional Information

Loss Percentage

Loss% = (Loss ÷ CP) × 100. It is always calculated on the Cost Price unless specified otherwise.

Selling Price (SP) Formula

When profit is given: SP = CP × (100 + Profit%) ÷ 100.

Marked Price (MP) and Discount

Discount is always calculated on the Marked Price. Discount = MP − SP, and Discount% = (Discount ÷ MP) × 100.

Q76. Answer: (b) Gurajada Apparao

The correct answer is Gurajada Apparao

Key Points

• Gurajada Apparao wrote the popular Telugu patriotic song 'Desamunu preminchumanna, manchi annadi penchumanna' meaning 'Love the nation, grow the goodness'.

• Gurajada Apparao was a renowned Indian playwright, poet, and writer known for his contributions to Telugu literature.

• His works often focused on social reform and the promotion of national consciousness.

• The song 'Desamunu preminchumanna' is celebrated for its patriotic fervor and has inspired generations of Indians.

Additional Information

• Gurajada Apparao's full name was Gurajada Venkata Apparao, and he lived from 1862 to 1915.

• He is also known for his famous play Kanyasulkam, which is considered one of the greatest works in Telugu literature.

• Apparao's literary works played a significant role in the cultural renaissance of Andhra Pradesh.

• His writings emphasized the importance of education, social justice, and national integration.

Q77. Answer: (d) Three

The correct answer is Three

Key Points

• A super tackle in Kabaddi is when a raider is caught/self out/declared out with three or fewer defenders defending.

• This rule adds an extra point to the defending team’s score for successfully tackling the raider under these conditions.

• It is a strategic advantage for the defending team as it not only prevents the raider from scoring but also boosts their own score.

• Super tackles are crucial in turning the tide of the match, especially when the defending team is outnumbered.

Additional Information

• Kabaddi is a contact team sport that originated in India and is popular in many South Asian countries.

• The game is played with two teams of seven players each, and the objective is for a single raider to tag members of the opposing team and return to their own half without being tackled.

• A match consists of two halves, typically 20 minutes each, with a 5-minute break in between.

• The sport requires a combination of strength, strategy, and agility, making it both exciting and challenging.

Q78. Answer: (c) Dr. BR Ambedkar

The correct answer is Dr. BR Ambedkar

Key Points

• Dr. BR Ambedkar has called the Right to Constitutional Remedy as the 'Soul of the Constitution'.

• The Right to Constitutional Remedy is enshrined in Article 32 of the Indian Constitution.

• It empowers citizens to approach the Supreme Court or High Courts to seek enforcement of other fundamental rights recognized by the Constitution.

• Dr. BR Ambedkar emphasized its importance, asserting that without this remedy, all other rights would be meaningless.

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• This right ensures that the judiciary can act as a protector of the Constitution and the rights it guarantees.

Additional Information

• Article 32 of the Indian Constitution provides the right to individuals to move to the Supreme Court for the enforcement of fundamental rights.

• It is termed the 'heart and soul' of the Constitution by Dr. BR Ambedkar because it provides a guaranteed remedy for the protection of fundamental rights.

• This article includes the issuance of writs such as habeas corpus, mandamus, prohibition, quo warranto, and certiorari.

• It plays a crucial role in maintaining the rule of law and the protection of the rights of citizens against arbitrary actions of the state.

• The Supreme Court has the power to issue directions, orders, or writs for the enforcement of any of the rights conferred by Part III of the Constitution.

Q79. Answer: (a) Tulsi Ghat

The correct answer is Tulsi Ghat.

Key Points

• The project for the restoration of Tulsi Ghat was launched by India's External Affairs Minister S Jaishankar in April 2023.

• Tulsi Ghat is one of the renowned ghats in Varanasi, known for its historical and cultural significance.

• The restoration project aims to preserve the heritage and improve the facilities at Tulsi Ghat for pilgrims and tourists.

• Such initiatives are part of broader efforts to maintain and rejuvenate the cultural landmarks in India.

Additional Information

• Varanasi, also known as Kashi, is one of the oldest continuously inhabited cities in the world and holds immense religious significance in Hinduism.

• The ghats of Varanasi, including Tulsi Ghat, are steps leading down to the river Ganges and are used for various rituals and ceremonies.

• The restoration of these ghats is crucial for preserving the cultural heritage and ensuring the sustainability of the riverfront.

• Efforts to restore and maintain the ghats also contribute to the local economy by boosting tourism and providing employment opportunities.

Q80. Answer: (b) Odisha

The correct answer is Odisha

Key Points

• Bali Yatra is a traditional cultural festival celebrated in the state of Odisha.

• The festival commemorates the ancient maritime trade between Odisha and Southeast Asian countries like Bali, Java, Sumatra, Borneo, and Sri Lanka.

• It is held on the banks of the Mahanadi River in the city of Cuttack, marking the day when ancient Sadhabas (Odia mariners) would set sail to distant lands.

• The festival features various cultural programs, exhibitions, and a large fair, attracting visitors from all over the state and beyond.

• Bali Yatra usually takes place in the month of November, coinciding with the Kartik Purnima (full moon day of the Kartik month in the Hindu calendar).

Additional Information

• Odisha has a rich cultural heritage, including classical dance forms like Odissi and traditional music.

• The state is also known for its ancient temples, such as the Jagannath Temple in Puri and the Sun Temple in Konark.

• Odisha celebrates various other festivals like Rath Yatra, Durga Puja, and Makar Sankranti with great fervor.

• The state has a diverse range of tribal communities, each with its own unique traditions and customs.

• Tourism plays a significant role in Odisha's economy, with attractions ranging from beaches to wildlife sanctuaries and historical monuments.

Q81. Answer: (a) Limited Liability Partnership Act, 2008

The correct answer is Limited Liability Partnership Act, 2008

Key Points

• The Parliament passed the Limited Liability Partnership (Amendment) Bill, 2021 on 9 August 2021.

• This bill amended the Limited Liability Partnership Act, 2008.

• The amendments aimed to decriminalize several offenses under the act and introduce new concepts like small LLPs.

• These changes were intended to improve the ease of doing business for LLPs in India.

Additional Information

• The Limited Liability Partnership (LLP) Act, 2008 was enacted to introduce and legally recognize the concept of LLPs in India.

• An LLP is a hybrid structure that combines the advantages of both a company and a partnership.

• It provides the benefit of limited liability to its partners while allowing them the flexibility of organizing their internal structure as a partnership.

• The 2021 amendment was part of the government's broader initiative to reform corporate laws and improve the business environment.

Q82. Answer: (a) Chahamana

The correct answer is Chahamana

Key Points

• The Bijolia inscription provides the genealogy of the Chahamana dynasty.

• Bijolia is an important historical site known for its inscriptions which provide valuable information about medieval Indian dynasties.

• The Chahamanas, also known as Chauhans, were a prominent Rajput dynasty in northwestern India.

• The inscriptions at Bijolia are a crucial source for understanding the history and lineage of the Chahamanas.

Additional Information

• The Chahamana dynasty ruled parts of present-day Rajasthan and Haryana.

• They played a significant role in resisting invasions from the north-west, particularly from the Ghaznavids and Ghurids.

• Prithviraj Chauhan, one of the most famous rulers of the Chahamana dynasty, is celebrated for his valiant efforts against Muhammad Ghori.

• Inscriptions like those at Bijolia are vital for reconstructing the history and understanding the socio-political context of the time.

Q83. Answer: (c) Alluvial soil

The correct answer is Alluvial soil

Key Points

• Alluvial soil is found on about 40% of the total area of India.

• This type of soil is primarily found in the plains of the northern and coastal regions of India.

• Alluvial soil is highly fertile and suitable for growing a variety of crops, including rice, wheat, sugarcane, and cotton.

• The soil is deposited by rivers and is rich in nutrients like potash, phosphoric acid, and lime.

• It supports extensive agricultural activities and is a significant contributor to India's agrarian economy.

Additional Information

• Alluvial soil is divided into two types: New alluvium (Khadar) and Old alluvium (Bhangar).

• Khadar soil is found in the floodplains of rivers and is renewed annually by fresh silt deposits.

• Bhangar soil is found on higher terraces and is older, with higher concentrations of clay and organic matter.

• These soils are especially predominant in the Indo-Gangetic Plain, which includes states like Punjab, Haryana, Uttar Pradesh, Bihar, and West Bengal.

• The fertility of alluvial soil makes it a crucial resource for India's food security and agricultural productivity.

Q84. Answer: (d) Mohini Jain v State of Karnataka

The correct answer is Mohini Jain v State of Karnataka

Key Points

• The Supreme Court of India, in the case of Mohini Jain v State of Karnataka, extended the scope of Article 21 of the Indian Constitution.

• The judgement observed that the Right to education flows directly from the Right to life, which is guaranteed under Article 21.

• This landmark decision emphasized that the state is obligated to provide educational facilities to its citizens as a part of their fundamental rights.

• The ruling paved the way for subsequent decisions and legislations that strengthened the right to education in India.

Additional Information

• Article 21 of the Indian Constitution states that "No person shall be deprived of his life or personal liberty except according to procedure established by law."

• The interpretation of Article 21 has been broadened over the years to include various rights that are essential to the life and dignity of an individual.

• The Right to Education Act, 2009, which provides free and compulsory education to all children aged 6 to 14 years, was a significant step towards realizing the right recognized in the Mohini Jain case.

• The Constitution (Eighty-sixth Amendment) Act, 2002, also inserted Article 21A, explicitly making education a fundamental right for children in the specified age group.

Q85. Answer: (a) Madhya Pradesh

The correct answer is Madhya Pradesh

Key Points

• Lakshmibai National Institute of Physical Education (LNIPE) is located in Madhya Pradesh.

• The institute is dedicated to the field of physical education and sports and is named after the famous Indian freedom fighter Rani Lakshmibai.

• LNIPE offers various undergraduate, postgraduate, and doctoral programs in physical education and sports sciences.

• The institute aims to promote physical education and sports in India and to develop highly skilled professionals in these fields.

Additional Information

• LNIPE was established in 1957 by the Ministry of Education, Government of India.

• The institute is located in the city of Gwalior, Madhya Pradesh.

• LNIPE has a sprawling campus with state-of-the-art facilities for various sports and physical education training.

• The institute also engages in research activities and contributes to the development of new techniques and methodologies in physical education and sports.

• LNIPE collaborates with various national and international organizations to promote sports and physical education globally.

Q86. Answer: (c) Net National Product (NNP)

The correct answer is Net National Product (NNP)

Key Points

• Net National Product (NNP) at Market Price refers to the sum total of factor incomes earned by residents of a country during an accounting year including net indirect taxes.

• It is derived by subtracting depreciation from Gross National Product (GNP).

• It represents the net value of goods and services produced by the residents of a country.

• NNP is an important indicator of the economic health of a country.

Additional Information

• The calculation of NNP takes into account the depreciation of capital assets, making it a more accurate measure of economic performance than Gross National Product (GNP).

• Net National Product (NNP) can be used to gauge the standard of living within a country, as it reflects the actual income available to the residents.

• It is also used for international comparisons of economic performance.

• Depreciation represents the wear and tear on the capital stock, which is why it is deducted from the Gross National Product to arrive at the Net National Product.

• Higher NNP indicates a higher level of economic activity and prosperity within a country.

Q87. Answer: (b) Independent economy

The correct answer is Independent economy.

Key Points

• Independent economy was a major feature of Indian economy before British rule.

• Indian economy was independent and self-sufficient before British rule, consisting of various types of agriculture, handicrafts, and trade.

• India was a major exporter of various textiles, spices, and other products, making it a strong and prosperous economy.

• Local cottage industries and handicraft industries were the backbone of the Indian economy, providing employment in rural and urban areas.

• With the advent of British rule, the structure of the Indian economy underwent significant changes, making it dependent and vulnerable.

Additional Information

• During British rule, the Indian economy was exploited and restructured to suit British economic interests.

• Many local industries and handicrafts were destroyed or weakened, leading to increased poverty and unemployment.

• Indian economy became overly dependent on agriculture, and farmers were forced to cultivate cash crops, leading to food crisis.

• During this period, the development of manufacturing and industry in the Indian economy was hampered, and the overall economic condition of the country weakened.

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Q88. Answer: (a) Cygnus

The correct answer is Cygnus

Key Points

• Cygnus is a distinctive cross-shaped constellation best seen in the northern hemisphere during the summer and fall months around September.

• It is also known as the Northern Cross due to its characteristic shape.

• Cygnus is one of the most recognizable constellations in the night sky and is located in the Milky Way.

• The constellation is associated with the myth of Zeus transforming into a swan.

Additional Information

• Cygnus contains several notable stars, including Deneb, one of the brightest stars in the night sky and part of the Summer Triangle asterism.

• The constellation also hosts several deep-sky objects, such as the North America Nebula and the Veil Nebula.

• Cygnus is bordered by the constellations Draco, Lyra, Vulpecula, Pegasus, Lacerta, and Cepheus.

• Observation of Cygnus is best in the northern hemisphere during the late evening hours of summer and early fall.

Q89. Answer: (a) Himachal Pradesh and Bihar

The correct answer is Himachal Pradesh and Bihar

Key Points

• According to the Census of India 2011, Himachal Pradesh and Bihar have the least urban population among the listed options.

• Himachal Pradesh has a predominantly rural population with a small percentage living in urban areas.

• Bihar also has a high rural population with lower urbanization compared to many other states in India.

• The urban population percentage is a crucial factor in determining the level of urbanization in these states.

Additional Information

• The Census of India is conducted every ten years to collect demographic data, including information on urban and rural populations.

• The 2011 Census provided detailed insights into the population distribution, literacy rates, and other socio-economic parameters across different states and union territories.

• Urbanization is an important aspect of economic development and is often associated with better infrastructure, healthcare, and educational facilities.

• States with lower urban populations may face challenges related to rural development, including access to basic amenities and services.

• Efforts are often made by both central and state governments to improve urbanization rates and develop rural areas simultaneously.

Q90. Answer: (a) Punjab

The correct answer is Punjab

Key Points

• The Bist Doab Canal System and Makhu Canal System are associated with the state of Punjab.

• The canal systems are crucial for the irrigation and agriculture of the region, supporting the extensive farming practices in Punjab.

• Punjab is known as the "Granary of India" or "India's Bread Basket" due to its fertile land and extensive irrigation systems.

Additional Information

• Punjab is a state in northern India, known for its rich history, culture, and contribution to the agricultural sector.

• The state plays a significant role in India's Green Revolution, which transformed India from a food-deficient country to one of the world's leading agricultural nations.

• Punjab's irrigation infrastructure, including canals like the Bist Doab and Makhu, is pivotal for maintaining high agricultural productivity.

Q91. Answer: (a) 2001

The correct answer is 2001

Key Points

• Eric A. Cornell, Wolfgang Ketterle, and Carl E. Wieman received the Nobel Prize in Physics in the year 2001.

• They were awarded for achieving 'Bose-Einstein condensation in dilute gases of alkali atoms'.

• Their work was instrumental in demonstrating a new state of matter predicted by Satyendra Nath Bose and Albert Einstein in the early 20th century.

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• This achievement has significant implications in the field of quantum mechanics and has opened up new avenues for research in physics.

Additional Information

• The Nobel Prize in Physics is awarded annually by the Royal Swedish Academy of Sciences.

• The prize recognizes outstanding contributions in the field of physics and has been awarded since 1901.

• Winners receive a medal, a diploma, and a cash award.

• The Nobel Prizes were established by the will of Alfred Nobel, the inventor of dynamite.

• Eric A. Cornell and Carl E. Wieman conducted their research at the University of Colorado, while Wolfgang Ketterle conducted his research at the Massachusetts Institute of Technology (MIT).

Q92. Answer: (b) Right-click on the row number and select Insert

The correct answer is Right-click on the row number and select Insert

Key Points

• Right-click on the row number and select Insert to add a blank row at the top of a worksheet.

• Clicking on the row number highlights the entire row.

• Right-clicking provides a context menu with various options, including the "Insert" option.

• Selecting "Insert" will add a new blank row above the selected row.

Additional Information

• Inserting a row can also be done using the "Insert" command in the "Cells" group on the "Home" tab.

• Shortcut keys such as "Ctrl + Shift + +" can also be used to insert rows quickly.

• Inserting rows can be useful for adding new data or creating space for headers and titles.

Q93. Answer: (c) 1/16

The correct answer is 1/16

Key Points

• The probability of getting a BBEE genotype in a dihybrid cross between two heterozygous fruit flies (BbEe X BbEe) is 1/16.

• Each parent can produce four types of gametes: BE, Be, bE, and be, with equal probability (1/4 each).

• To obtain the BBEE genotype, the offspring must receive the B and E alleles from both parents.

• The probability of getting BB from Bb X Bb cross is 1/4, and the probability of getting EE from Ee X Ee cross is also 1/4.

• Therefore, the combined probability of getting BBEE is (1/4) * (1/4) = 1/16.

Additional Information

• Mendelian inheritance explains how traits are passed from parents to offspring through genes.

• A dihybrid cross involves two pairs of contrasting traits, and the offspring of such a cross are termed dihybrids.

• In a dihybrid cross, the law of independent assortment states that alleles of different genes assort independently of one another during gamete formation.

• Understanding the principles of Mendelian genetics is crucial for studying inheritance patterns and predicting genetic outcomes.

Q94. Answer: (d) Uday Shankar

The correct answer is Uday Shankar

Key Points

• Uday Shankar was an Indian dancer and choreographer best known for creating a fusion style of dance adapting European theatrical techniques to Indian classical and folk dance forms.

• He is often referred to as the father of modern dance in India.

• Uday Shankar's innovative approach helped popularize Indian dance on the global stage.

• He received numerous awards and accolades for his contributions to the arts, including the Sangeet Natak Akademi Fellowship.

Additional Information

• Uday Shankar was born on December 8, 1900, in Udaipur, Rajasthan, India.

• He was the elder brother of the famous sitar virtuoso Ravi Shankar.

• In 1930, Uday Shankar formed his own dance company and toured extensively, showcasing his unique dance style to audiences worldwide.

• He established the Uday Shankar India Culture Centre in Almora in 1938, which became a hub for training and nurturing young talents in dance and music.

• Uday Shankar's legacy continues to inspire generations of dancers and choreographers in India and abroad.

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Q95. Answer: (c) Ctrl + M

The correct answer is Ctrl + M

Key Points

• Ctrl + M is the shortcut key combination to insert a new slide in a Microsoft PowerPoint presentation.

• Using this shortcut allows users to quickly add new slides without navigating through the menu options, thereby enhancing productivity and efficiency.

• This shortcut works in most versions of Microsoft PowerPoint, including PowerPoint 2010, 2013, 2016, 2019, and Microsoft 365.

• When you press Ctrl + M, a new slide is inserted immediately after the currently selected slide.

• It is particularly useful during live presentations and meetings when time is of the essence.

Additional Information

• Ctrl + N is used to create a new presentation in Microsoft PowerPoint.

• Ctrl + D duplicates the currently selected slide in Microsoft PowerPoint.

• Ctrl + I is used to italicize the selected text in Microsoft PowerPoint.

• Knowing and using keyboard shortcuts can greatly improve your efficiency when working with software applications.

Q96. Answer: (d) Serchhip

The correct answer is Serchhip

Key Points

• Serchhip district in Mizoram has the highest literacy rate in India as per Census 2011.

• The literacy rate of Serchhip is 98.76%, which is the highest among all districts in India.

• Serchhip is followed by Aizawl district, also in Mizoram, with a literacy rate of 98.50%.

• The high literacy rate in Serchhip is attributed to the effective implementation of educational programs and policies by the state government.

• Education in Serchhip is given high priority, with a strong emphasis on both primary and higher education.

Additional Information

• The Census 2011 data provides a detailed analysis of literacy rates across various districts and states in India.

• Overall, the literacy rate in India as per Census 2011 is 74.04%, with Kerala having the highest state literacy rate of 93.91%.

• Effective educational policies, community participation, and infrastructure development are key factors contributing to high literacy rates in certain districts and states.

• Efforts to improve literacy rates continue to be a priority for the Indian government, with various schemes and programs aimed at enhancing educational access and quality.

• Literacy is a crucial indicator of social and economic development, impacting various aspects of individual and community well-being.

Q97. Answer: (b) Gitam

The correct answer is Gitam

Key Points

• Gitam is the simplest form of composition in Carnatic Classical music.

• It serves as an introductory piece for students learning Carnatic music.

• Gitam typically has a simple structure and is set in a single raga.

• It is primarily used to teach the basic elements of a raga and the fundamentals of rhythm and melody.

• Other forms such as Kirtnam, Varnam, and Pada are more complex and are usually taught after mastering Gitam.

Additional Information

• Kirtnam is a devotional song that is more elaborate than Gitam and often includes multiple sections.

• Varnam is a more advanced form that includes both lyrical and rhythmic complexities, used for both learning and performance.

• Pada is a lyrical composition that often expresses devotion or love and is usually performed in a dance context.

• Carnatic music is a system of music commonly associated with the southern part of India, and it places a strong emphasis on vocal music, even when played on instruments.

Q98. Answer: (b) 11

The correct answer is 11

Key Points

• 11 countries participated in the first Asian Games held in 1951.

• The first Asian Games were hosted by New Delhi, India from March 4 to March 11, 1951.

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• The participating countries were Afghanistan, Burma (Myanmar), Ceylon (Sri Lanka), India, Indonesia, Iran, Japan, Nepal, the Philippines, Singapore, and Thailand.

• The Asian Games, also known as Asiad, are a multi-sport event held every four years among athletes from all over Asia.

• The event is organized by the Olympic Council of Asia (OCA) and is recognized by the International Olympic Committee (IOC).

Additional Information

• The idea of the Asian Games was initiated by India's first Prime Minister, Jawaharlal Nehru, and the Asian Games Federation was formed to organize the games.

• The first Asian Games featured six sports: athletics, aquatics (swimming, diving, water polo), basketball, cycling, football, and weightlifting.

• Since the inaugural event in 1951, the Asian Games have grown significantly in size and scope, with more countries and sports being added over the years.

• The Asian Games are considered the second-largest multi-sport event after the Olympic Games.

Q99. Answer: (a) Article 33

The correct answer is Article 33

Key Points

• The Constitution Fiftieth Amendment Act, 1984, amended Article 33 of the Constitution of India.

• Article 33 empowers the Parliament to restrict or abrogate the application of fundamental rights to the armed forces, paramilitary forces, police forces, intelligence agencies, and similar services.

• This amendment was aimed at ensuring proper discharge of duties and maintaining discipline among these forces.

• The amendment allows the government to impose necessary restrictions to maintain public order and national security.

Additional Information

• The Constitution of India was adopted by the Constituent Assembly on 26th November 1949 and came into effect on 26th January 1950.

• It lays down the framework defining fundamental political principles, establishes the structure, procedures, powers, and duties of government institutions, and sets out fundamental rights, directive principles, and the duties of citizens.

• The Constitution of India is the longest written constitution of any country in the world.

• It declares India a sovereign, socialist, secular, and democratic republic, assuring its citizens justice, equality, and liberty, and endeavors to promote fraternity.

• The Seventh Schedule of the Constitution contains three lists which delineate the subjects under the Union, State, and Concurrent lists.

• Amendments to the Constitution can be made through a process outlined in Article 368.

• Article 33 is crucial for maintaining discipline and proper functioning of the armed forces and other similar services by allowing necessary restrictions on fundamental rights.

Q100. Answer: (b) 1857

The correct answer is 1857

Key Points

• The first War of Indian Independence, also known as the Sepoy Mutiny, started in the year 1857.

• This uprising was a major, but ultimately unsuccessful, rebellion against the British East India Company's rule in India.

• The revolt began on May 10, 1857, in the town of Meerut and soon spread to other parts of India.

• Key figures in the rebellion included Rani Lakshmibai of Jhansi, Bahadur Shah Zafar, and Tantia Tope, among others.

• The revolt was fueled by various factors including political, economic, social, and military grievances against the British rule.

Additional Information

• The Sepoy Mutiny marked the end of the rule of the British East India Company and led to the direct control of India by the British Crown.

• This event is considered a significant precursor to the later movements for Indian independence.

• The rebellion highlighted the widespread discontent and laid the foundation for future freedom struggles.

• After the revolt, the British implemented various reforms to placate the Indian populace and prevent further uprisings.

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