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

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

**Take this paper as a timed mock test**

Practise under exam conditions, then review your answers after you submit.

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## ENGLISH LANGUAGE

**Q1.** Select the option that corrects the following sentence.

All the workers have called of the strike.

**(a)** All the workers have called at the strike.
**(b)** All the workers have called through the strike.
**(c)** All the workers have called between the strike.
**(d)** All the workers have called off the strike.

**Q2.** The given sentence is divided into four segments. Select the option that has the segment with a grammatical error.

He organises / a children's fair every year / and his friends comes / to attend it.

**(a)** He organises
**(b)** to attend it.
**(c)** and his friends comes
**(d)** a children's fair every year

**Q3.** The underlined phrase in the given sentence has been used incorrectly. Select the option that can correctly replace the underlined segment.

Samita asked out a favour of going early today.

**(a)** asked for
**(b)** asked around
**(c)** asked after
**(d)** asked over

**Q4.** The following sentence has been divided into four segments. Identify the segment that contains an error.

They have decided / to wind out / their business / without delay.

**(a)** They have decided
**(b)** their business
**(c)** without delay.
**(d)** to wind out

**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.

(1)____ health benefits, including protection from cardiovascular disease and cancer, have been (2)___ to antioxidants; however, according to dietitian Vinson, these benefits depend on how well antioxidants are absorbed and (3)__ by the body. According to the study, coffee has more antioxidant power than other well-known foods and drinks, like tea, milk, chocolate, and cranberries. Dates had the highest antioxidants per serving out of all the foods and drinks (4)__, but because dates are not consumed to the same extent as coffee, the latter comes out on (5)____, according to Vinson.

**Q5.** Select the most appropriate option to fill in blank number 1.

**(a)** Few
**(b)** Countable
**(c)** Limited
**(d)** Numerous

**Q6.** Select the most appropriate option to fill in blank number 2.

**(a)** negative
**(b)** parallel
**(c)** similar
**(d)** attributed

**Q7.** Select the most appropriate option to fill in blank number 3.

**(a)** utilised
**(b)** rejected
**(c)** hinder
**(d)** impede

**Q8.** Select the most appropriate option to fill in blank number 4.

**(a)** synthesised
**(b)** consumed
**(c)** assimilated
**(d)** analysed

**Q9.** Select the most appropriate option to fill in blank number 5.

**(a)** below
**(b)** bottom
**(c)** lowest
**(d)** top

**Q10.** 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 substitution required'.

The plum tree in our garden is cover in blossoms, as are the trees outside my office window.

**(a)** are cover at
**(b)** is covered in
**(c)** No substitution required
**(d)** is covering at

**Q11.** Select the most appropriate option that can substitute the underlined segment in the given sentence.

We feel warm on the subject

**(a)** warming about
**(b)** warmed on
**(c)** warmly about
**(d)** warmer on

**Q12.** Select the most appropriate ANTONYM of the underlined word in the given sentence.

The dearth of governmental policies on the basic rights and comforts of the impaired population leads to low standard of public life in a country.

**(a)** Lacunae
**(b)** Abundance
**(c)** Paucity
**(d)** Brevity

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**Q13.** Select the most appropriate ANTONYM of the given word.

Enemy

**(a)** Friend
**(b)** Attacker
**(c)** Combatant
**(d)** Colleague

**Q14.** Select the most appropriate meaning of the given idiom.

Put in mind

**(a)** To calculate
**(b)** To remind
**(c)** To forget
**(d)** To understand

**Q15.** 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 substitution required'.

A soldier of the tenth legion leaped into the water as soon as the ship touches the shore.

**(a)** No substitution required
**(b)** the ship was touch the shore
**(c)** the ship touch the shore
**(d)** the ship touched the shore

**Q16.** Select the most appropriate ANTONYM of the underlined word in the sentence.

He laboured very hard but could not yield anything from the barren piece of land.

**(a)** Fruitless
**(b)** Vile
**(c)** Sterile
**(d)** Fertile

**Q17.** Select the most appropriate connotation to fill in the blank.

I always love the _____ of my mother's cooking.

**(a)** stench
**(b)** scent
**(c)** perfume
**(d)** aroma

**Q18.** Select the INCORRECTLY spelt word.

**(a)** stationery
**(b)** marijuena
**(c)** lascivious
**(d)** dictator

**Q19.** Select the most appropriate option that can substitute the underlined segment in the given sentence.

The dictator ordered the traitor were jailed.

**(a)** was
**(b)** is
**(c)** might
**(d)** to be

**Q20.** Select the correctly spelt word.

**(a)** Illuzion
**(b)** Illusion
**(c)** Illuseon
**(d)** Ilusion

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**Q21.** Select the most appropriate synonym of the given word.

Wonderful

**(a)** Awful
**(b)** Amazing
**(c)** Synthetic
**(d)** Upright

**Q22.** Select the most appropriate meaning of the given idiom.

Dog eat dog

**(a)** Like-minded people connect better
**(b)** Ruthlessly competitive
**(c)** Tit for tat
**(d)** Being calculative

**Q23.** Select the most appropriate synonym of the given word.

Competent

**(a)** Dumb
**(b)** Qualified
**(c)** Chatty
**(d)** Unskilled

**Q24.** Read the given sentence carefully. Change the meaning of the sentence by replacing the underlined word with its ANTONYM from the following options.

The equivocal tone of the Prime Minister in his speech caused uproar in the chamber.

**(a)** conflicting
**(b)** irresolute
**(c)** iffy
**(d)** explicit

**Q25.** Select the most appropriate ANTONYM of the underlined word.

My parents have a fertile land in the backyard.

**(a)** Scanty
**(b)** Potent
**(c)** Timid
**(d)** Barren

## GENERAL INTELLIGENCE

**Q26.** What will come in the place of the question mark (?) in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

80 + 18 × 3 ÷ 5 - 23 = ?

**(a)** 73
**(b)** 85
**(c)** 80
**(d)** 88

**Q27.** What should come in place of the question mark (?) in the given series?

8, 21, 34, 47, 60, ?

**(a)** 71
**(b)** 72
**(c)** 73
**(d)** 70

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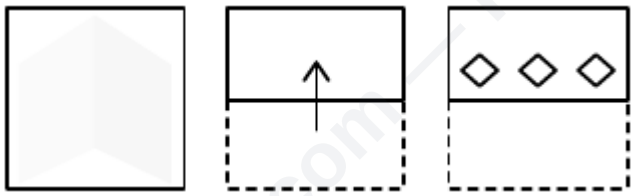
**Q28.** Select the word-pair that best represents a similar relationship to the one expressed in the pair of words given below.

(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.)

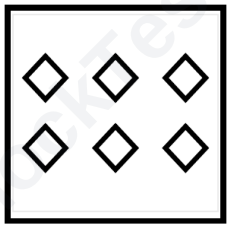
Plain : Austere

**(a)** Neutral : Detached
**(b)** Abandon : Barren
**(c)** Lonely : Gloomy
**(d)** Clean : Sterile

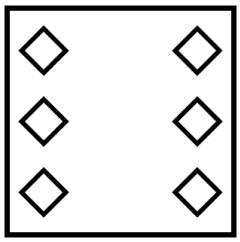
**Q29.** A paper is folded and cut as shown below. How will it appear when unfolded?



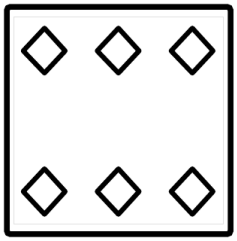
**(a)**



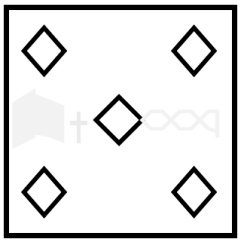
**(b)**



**(c)**



**(d)**



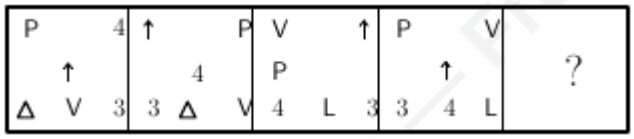
**Q30.** If 9 March 2007 was Friday, then what was the day of the week on 13 March 2012?

**(a)** Wednesday
**(b)** Thursday
**(c)** Tuesday
**(d)** Monday

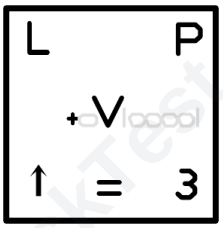
**Q31.** The position of how many letters will remain unchanged if each of the letters in the word 'ABDUCTS' is arranged in English alphabetical order?

**(a)** Two
**(b)** More than four
**(c)** Three
**(d)** Four

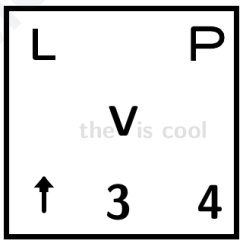
**Q32.** Identify the figure given in the options that when put in place of the question mark (?) will logically complete the series.



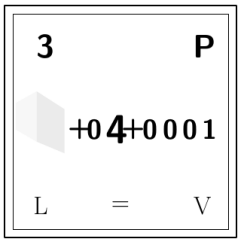

**(a)**



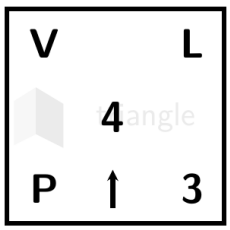

**(b)**




**(c)**




**(d)**




**Q33.** What will come in the place of the question mark (?) in the following equation, if '+' and '×' are interchanged and '-' and '÷' are interchanged?

132 - 12 × 17 + 3 ÷ 27 = ?

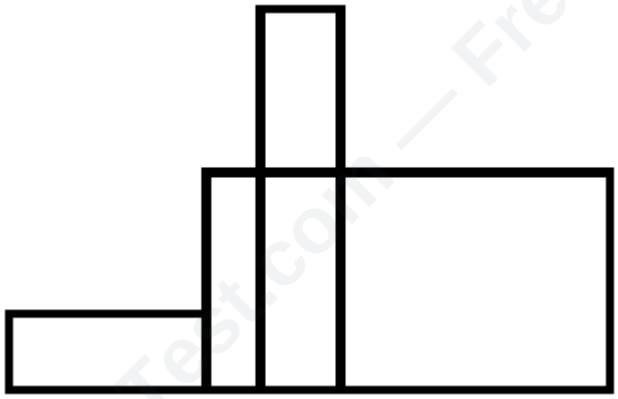
**(a)** 36
**(b)** 32
**(c)** 30
**(d)** 35

**Q34.** What should come in place of the question mark (?) in the given series?

131, 263, 527, 1055, ?

**(a)** 2111
**(b)** 1121
**(c)** 1211
**(d)** 2121

**Q35.** What is the maximum number of rectangles in the given figure?



**(a)** 10
**(b)** 12
**(c)** 8
**(d)** 9

**Q36.** 5 is related to 27 by certain logic. Following the same logic, 7 is related to 51. To which of the following is 4 related, following the same logic?

(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.)

**(a)** 37
**(b)** 18
**(c)** 15
**(d)** 64

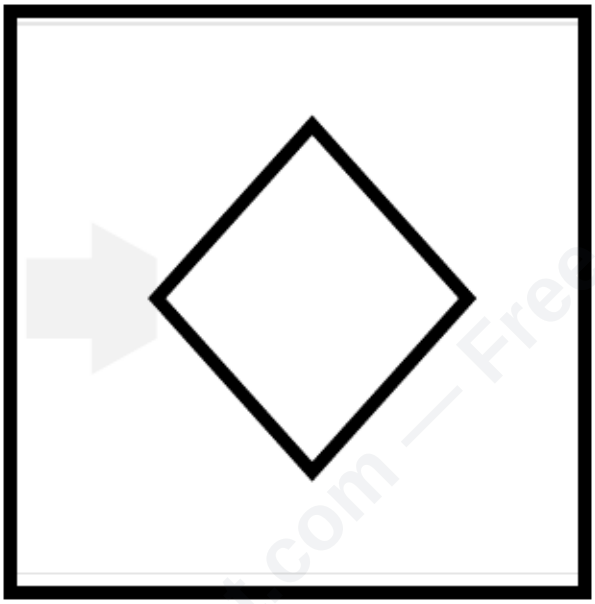
**Q37.** Which of the following numbers will replace the question mark (?) in the given series?

6, 16, 36, 76, ?, 316

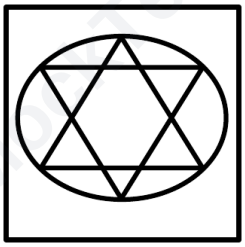
**(a)** 156
**(b)** 152
**(c)** 168
**(d)** 146

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

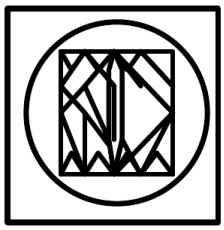
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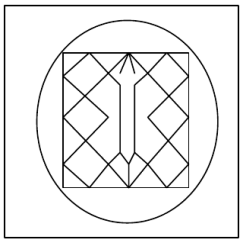
(a)



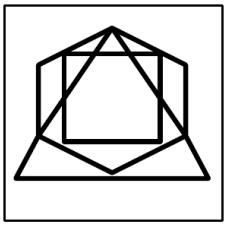
(b)



(c)



(d)



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**Q39.** 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 their 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.)

(6, 12, 3)

(10, 20, 5)

**(a)** (21, 28, 7)
**(b)** (14, 21, 7)
**(c)** (14, 28, 7)
**(d)** (14, 28, 9)

**Q40.** In a certain code language, 'MONEY' is coded as '64381' and 'HONEY' is coded as '54381' What is the code for 'H' in that language?

**(a)** 4
**(b)** 5
**(c)** 8
**(d)** 6

**Q41.** Select the pair which follows the same pattern as that followed by the two set of pairs given below. Both pairs follow the same pattern.

PTL : NRJ

AEX : YCV

**(a)** TVN : RTL
**(b)** GIF : FIG
**(c)** BTM : DVO
**(d)** ABC : ZTS

**Q42.** Which two numbers should be interchanged to make the given equation correct?

45 ÷ 3 + 12 × 9 – 15 + 2 × 5 = 36

(NOTE: Numbers must be interchanged and not the constituent digits e.g. if 2 and 3 are to be interchanged in the equation 43 × 3 + 4 ÷ 2, then interchanged equation is 43 × 2 + 4 ÷ 3)

**(a)** 3 and 9
**(b)** 5 and 3
**(c)** 12 and 5
**(d)** 2 and 9

**Q43.** 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 journals are books.

Some books are fans.

All fans are wood.

Conclusion (I): Some journals are wood.

Conclusion (II): Some fans are books.

**(a)** Neither conclusion (I) nor (II) follows.
**(b)** Only conclusion (I) follows.
**(c)** Both conclusions (I) and (II) follow.
**(d)** Only conclusion (II) follows.

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**Q44.** ‘A × B’ means ‘A is B’s brother’.

‘A ÷ B’ means ‘A is B’s sister’.

‘A + B’ means ‘A is B’s father’.

‘A – B’ means ‘A is B’s mother’.

Using the same meaning of the mathematical operators as given above, which of the following means ‘X is Z’s mother’s father’?

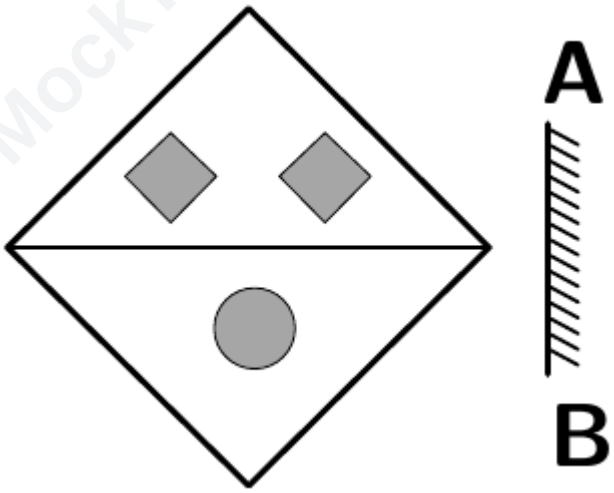
**(a)** X × Y + Z
**(b)** X + Y – Z
**(c)** X + Y × Z
**(d)** X – Y + Z

**Q45.** What should come in place of the question mark (?) to complete the following letter cluster series?

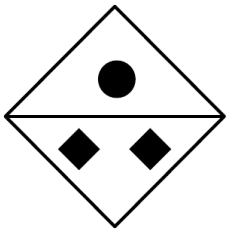
BDC, EGF, HJI, ?

**(a)** LMN
**(b)** KML
**(c)** KLM
**(d)** KLN

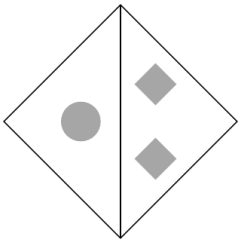
**Q46.** Select the correct mirror image of the given figure when the mirror is placed at AB as shown below.




**(a)**

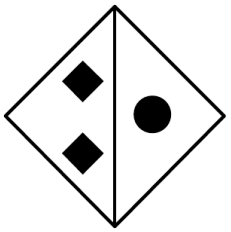


**(b)**

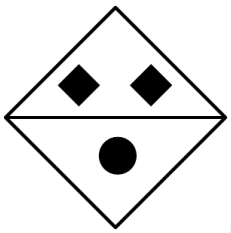


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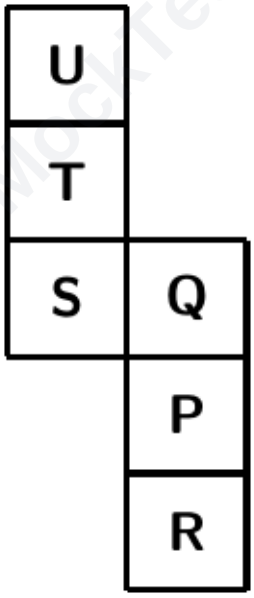
**(c)**



**(d)**



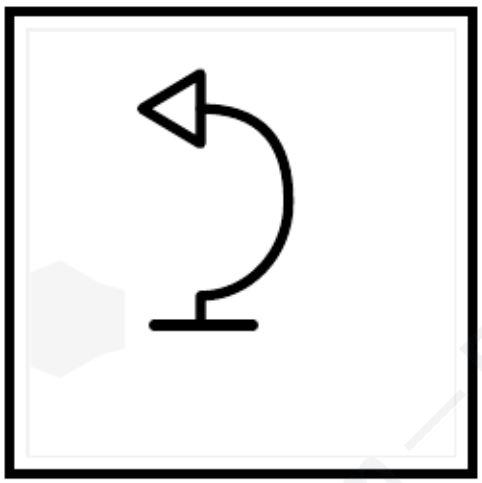
**Q47.** What would be the letter on the opposite side of 'R' if the given sheet is folded to form a cube?




**(a)** S
**(b)** Q
**(c)** T
**(d)** U

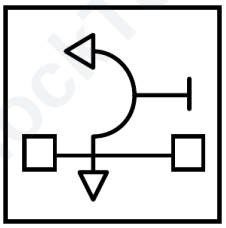
**Q48.** Select the option figure in which the given figure (X) is embedded as its part (rotation is NOT allowed).

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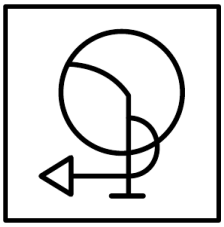


(X)

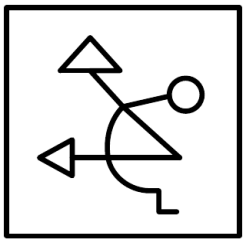
**(a)**



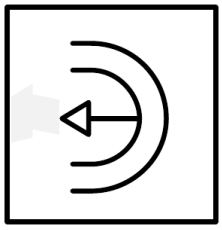
**(b)**



**(c)**



**(d)**



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**Q49.** Four letter-clusters have been given, out of which three are alike in some manner and one is different.

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

**(a)** PTV
**(b)** LQO
**(c)** XCA
**(d)** EJH

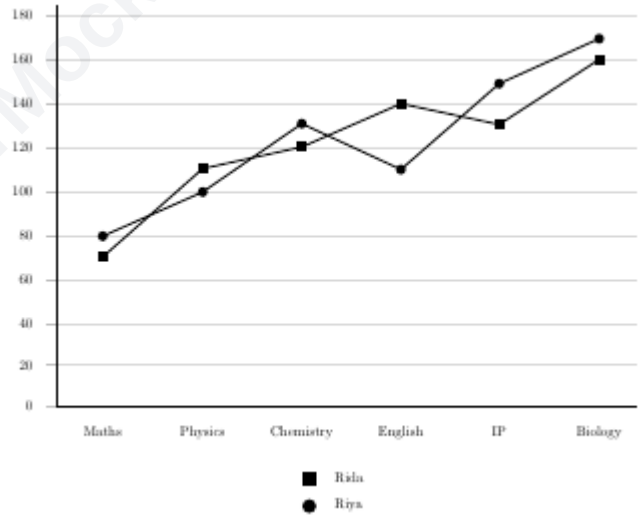
**Q50.** In a certain code language, ‘art of war’ is coded as ‘gb pr ml’ and ‘the lost art’ is coded as ‘ml sj ak’. How is ‘art’ coded in the given language?

**(a)** pr
**(b)** ml
**(c)** gb
**(d)** ak

## QUANTITATIVE APTITUDE

**Q51.** Study the following line graph carefully and answer the question below.

Given graph represents marks obtained by Riya and Rida in six subjects of 12^(th)exam of CBSE. Maximum marks in Maths, Physics and Chemistry is 140 whereas maximum marks in English. IP and Biology is 180.




What is percentage marks obtained by Rida in PCM (Maths, Physics and Chemistry)?

**(a)** 50%
**(b)** 78.57%
**(c)** 71.43%
**(d)** 81.32%

**Q52.** The areas of two similar triangles ΔPQR and ΔXYZ are 12.96 cm² and 635.04 cm², respectively. If QR = 2.9 cm, then the length (in cm) of YZ equals:

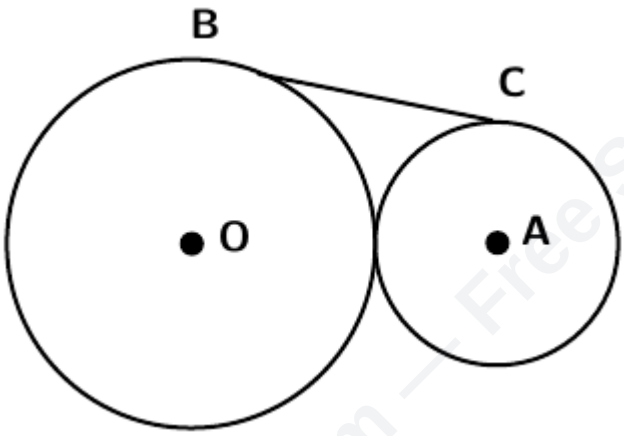
**(a)** 30.4
**(b)** 23.2
**(c)** 20.3
**(d)** 25.2

**Q53.** In ΔABC,XY is drawn parallel to BC, cutting sides at X and Y, where AB = 5.4 cm ,BC = 7.2 cm and BX = 3 cm. What is the length of XY (in cm)?

**(a)** 3.0
**(b)** 4.3
**(c)** 2.8
**(d)** 3.2

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**Q54.**




Two circles touch each other externally as shown in the figure above. The radius of the circle with centre O is 49 cm. The radius of the circle with centre A is 16 cm. Find the length (in cm) of their common tangent BC.

**(a)** 55
**(b)** 58
**(c)** 57
**(d)** 56

**Q55.** The graphs of two linear equations, x + 2y = 15 and 4x + 8y = 13 will be:

**(a)** intersecting at two points
**(b)** coincident
**(c)** parallel
**(d)** intersecting at one point

**Q56.** A boat can travel 60km downstream in 4 hours. If the speed of the boat in still water is 13 km/h, then in what time will it cover 30 km upstream?

**(a)** 2 4/7 hours
**(b)** 3 4/7 hours
**(c)** 3 5/7 hours
**(d)** 2 8/11 hours

**Q57.** During the first year the population of a village increased by 5% and during the second year it diminished by 5%. At the end of the second year its population was 47,880. What was the population at the beginning of the first year?

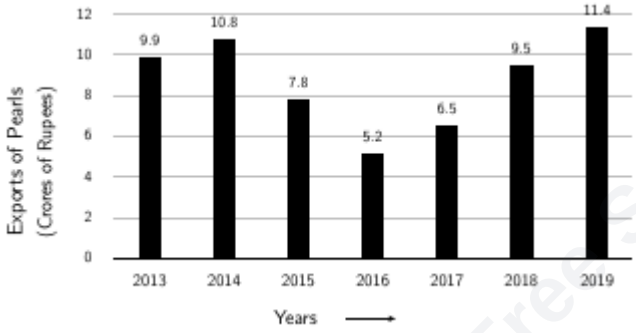
**(a)** 48000
**(b)** 43500
**(c)** 45000
**(d)** 53000

**Q58.** The ratio of a father's age to his son's age is 7 : 4. The product of the numbers representing their ages is 1372. The ratio of their ages after 8 years will be:

**(a)** 19 : 13
**(b)** 19 : 11
**(c)** 19 : 14
**(d)** 19 : 12

**Q59.** Study the given bar-graph carefully and answer the question that follows.

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In which year was there maximum percentage increase in the export of pearls to that in the previous year?

**(a)** 2018
**(b)** 2017
**(c)** 2019
**(d)** 2014

**Q60.** What is the value of cos(x + y) - sin(x - y) + tan(2z)?

**(a)** sin x. sin y + (2 tan z)/(1-tan² z)
**(b)** cos x. cos y - sin x. sin y - sin x. cos y + cos x. sin y + (2 tan z)/(1-tan² z)
**(c)** cos x. cos y - sin x. sin y - cos x. sin y + (tan z)/(1-tan² z)
**(d)** cos x. cos y - sin x. sin y - sin x. cos y - cos x. sin y + (2 tan z)/(1-tan² z)

**Q61.** The perimeter of a minor sector of a circle of radius 4 units subtending an angle of 45° is:

**(a)** 4 − π units
**(b)** 4 + π units
**(c)** 8 + π units
**(d)** 8 − π units

**Q62.** The following table shows the production of cars in a company from 2016 to 2020.

| Years | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| A | 30 | 23 | 39 | 25 | 18 |
| B | 16 | 10 | 14 | 12 | 8 |
| C | 15 | 18 | 19 | 25 | 30 |
| D | 31 | 12 | 21 | 19 | 20 |

There was a continuous decrease in the production of cars of which types during the period 2018 to 2020 ?

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

**Q63.** Twelve men working for 9 hours a day complete a piece of work in 24 days. In how many days can 8 men working for 12 hours a day complete the same piece of work?

**(a)** 24 days
**(b)** 21 days
**(c)** 27 days
**(d)** 28 days

**Q64.** Study the given graph and select the most appropriate option to fill in the blanks. Consider the percentage of workers in three categories, Skilled, Semi-skilled and Un-skilled in four companies, A, B, C and D in the graph below.

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If all the companies have same number of total workers, then the company _____ has the highest number of Un-skilled workers and the company _____ has the lowest number of Skilled workers.

**(a)** C; C
**(b)** C; B
**(c)** B; B
**(d)** B; C

**Q65.** How much water should be added to 60 liters of milk at 1 1/2 liters a rupee so as to have a mixture worth 1 7/8 liters a rupee?

**(a)** 20 liters
**(b)** 12 liters
**(c)** 27 liters
**(d)** 15 liters

**Q66.** If the diameter of a hemisphere is 21 cm, then the curved surface area (in $cm^2$) of the hemisphere is: Take $\pi=22/7$

**(a)** 939
**(b)** 639
**(c)** 963
**(d)** 693

**Q67.** A bank charges simple interest for Rs. K at the rate of r^(1/2) for $n^2$ years. Another bank charges simple interest for Rs. L at the rate of r^(3/2) for $n^3$ years and gives the same interest. The ratio between K and L is:

**(a)** r^(1/2): n^(1/2)
**(b)** $r^2 : n^2$
**(c)** r n : 1
**(d)** 1/r: 1/n

**Q68.** Simplify: 18 ÷ (7 × 2 - 5) × 5 × 24 ÷ 30

**(a)** 8
**(b)** 10
**(c)** 0.5
**(d)** 6

**Q69.** How many numbers lie between 2000 and 2020 that are divisible by 8?

**(a)** 2
**(b)** 5
**(c)** 3
**(d)** 4

**Q70.** A merchant sold two refrigerators for Rs. 10,000 each. On one refrigerator, he incurred a 20% loss, and on the other, he gained 20%. What was his profit/loss percentage on the whole transaction?

**(a)** Loss of 2%
**(b)** Profit of 4%
**(c)** Profit of 2%
**(d)** Loss of 4%

**Q71.** Mahesh's annual salary increased from Rs. 2,00,000 to Rs. 2,40,000. Find the percentage increase in the salary.

**(a)** 22%
**(b)** 24%
**(c)** 18%
**(d)** 20%

**Q72.** The capacity of a cylinder tank is 8316 $cm^3$. If the radius of its base is 21 cm, then find the depth of the tank.

**(a)** 6 cm
**(b)** 10 cm
**(c)** 8 cm
**(d)** 4 cm

**Q73.** O is the centre and the arc PQR subtends an angle of 240° at O. PQ is extended to A. Then angle AQR is:

**(a)** 60°
**(b)** 180°
**(c)** 120°
**(d)** 240°

**Q74.** In a group of 250 persons, 40% are males and 60% are females. If 30 more females join the group, then what will be the percentage of females in the new group? (Correct to 2 decimal places)

**(a)** 90.25%
**(b)** 72.25%
**(c)** 62.58%
**(d)** 64.29%

**Q75.** A dozen pairs of gloves of Rs. 180 are available at a discount of 10%. How many pairs of gloves can be bought for Rs. 54?

**(a)** 2
**(b)** 6
**(c)** 8
**(d)** 4

## GENERAL AWARENESS

**Q76.** Who is the founder of modern micro finance ?

**(a)** Rangarajan
**(b)** VKV Rao
**(c)** YV Reddy
**(d)** Muhammad Yunus

**Q77.** Which of the following types of crops are sown after the end of the monsoon season?

**(a)** Zaid crops
**(b)** Vital crops
**(c)** Rabi crops
**(d)** Kharif crops

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**Q78.** Match the following musical instruments with the maestros who play them.

| **a.** | **Santoor** | **i.** | **Bismillah Khan** |
|---|---|---|---|
| b. | Sitar | ii. | Ustad Binda Khan |
| c. | Shehnai | iii. | Pt Shiv Kumar Sharma |
| d. | Sarangi | iv. | Anushka Shankar |

**(a)** a - i, b - ii, c - iii, d - iv
**(b)** a - iii, b - iv, c - i, d - ii
**(c)** a - ii, b - iii, c - i, d - iv
**(d)** a - iv, b - iii, c - ii, d - i

**Q79.** Who among the following was primarily an integral part of the Indian National Army (INA)?
**(a)** Abanindranath Tagore
**(b)** Rabindranath Tagore
**(c)** Subhas Chandra Bose
**(d)** Chittaranjan Das

**Q80.** Who among the following was appointed, to the UN tax committee in July 2021, as a member for the 2021 to 2025 term?
**(a)** TV Somanathan
**(b)** Rasmi Ranjan Das
**(c)** Vipul Bansal
**(d)** Vivek Singh

**Q81.** Which of the following was the last dynasty of the Vijayanagara Empire?
**(a)** Tuluva dynasty
**(b)** Saluva dynasty
**(c)** Aravidu dynasty
**(d)** Sangam dynasty

**Q82.** According to the Census of India-2011, which state has the largest gap between male and female literacy rates?
**(a)** Bihar
**(b)** Andhra Pradesh
**(c)** Rajasthan
**(d)** Assam

**Q83.** What is the name of the centrally sponsored scheme related with literacy that was launched by the Government of India in March 2023?
**(a)** Bharat Padhega
**(b)** National Literacy Programme
**(c)** New India Literacy Programme
**(d)** India Literacy Programme

**Q84.** Which kind of computer security requires verifying the genuineness of the individuals or organisations that want to access a system?
**(a)** Confidentiality
**(b)** Authentication
**(c)** Availability
**(d)** Non-repudiation

**Q85.** As per Olympic rules, in the third game, badminton players change ends when a side scores _____ points.
**(a)** 15
**(b)** 13
**(c)** 12

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**(d)** 11

**Q86.** Which theory describes the collective effects of changes in Earth's movements on its climate over thousands of years?

**(a)** Continental drift theory
**(b)** Plate tectonics theory
**(c)** Copernicus' heliocentric theory
**(d)** Milankovitch theory

**Q87.** A _____ is a cloud of dust and gas inside a galaxy.

**(a)** chromosphere
**(b)** nebula
**(c)** black hole
**(d)** photosphere

**Q88.** In 2023, Gulab Chand Kataria became the Governor of which of the following states?

**(a)** Assam
**(b)** Odisha
**(c)** Himachal Pradesh
**(d)** Tamil Nadu

**Q89.** PC Mahalanobis is remembered as a major contributor of India's developmental path because he _____.

(A) set up Indian Institutes of Management located in different parts of India
(B) formulated the Second Five-Year Plan
(C) was the first Minister of Statistics and Programme Implementation

**(a)** Only (A) and (C) are true
**(b)** Only (B) is true
**(c)** Only (A) and (B) are true
**(d)** Only (A) is true

**Q90.** How many types of writs can be issued by the Supreme Court to protect the Fundamental Rights of Indian citizens?

**(a)** Six
**(b)** Four
**(c)** Five
**(d)** Seven

**Q91.** _____ is a significant festival of the Parsi people who practice Zoroastrianism as it marks the birth anniversary of Zoroaster.

**(a)** Pateti
**(b)** Jamshed-e-Navroz
**(c)** Gahambars
**(d)** Khordad Sal

**Q92.** Match List-I (Name of the composition) with List-II (Writer).

| List - I (Name of the Composition) | List - II (Writer) | | |
|---|---|---|---|
| 1. | Vande Mataram | A. | Pradeep |
| 2. | Jana Gana Mana | B. | Bankim Chandra Chattopadhyay |
| 3. | Ae Mere Watan Ke Logon | C. | Rabindranath Tagore |

**(a)** 1 - C, 2 - B, 3 - A
**(b)** 1 - C, 2 - A, 3 - B
**(c)** 1 - B, 2 - C, 3 - A

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**(d)** 1 - A, 2 - B, 3 - C

**Q93.** The loss of water in the form of water droplets from leaves of plants is called _____.

**(a)** Pressure gradient
**(b)** Plasmolysis
**(c)** Guttation
**(d)** Translocation

**Q94.** In which year was tennis included in the Olympic games?

**(a)** 1927
**(b)** 1935
**(c)** 1896
**(d)** 1948

**Q95.** Which Clause of Article 20 incorporates the doctrine of double jeopardy?

**(a)** 4
**(b)** 3
**(c)** 2
**(d)** 1

**Q96.** In MS Word, which feature allows you to create different headers and footers for odd and even pages in a document?

**(a)** Section Breaks
**(b)** Different First Page
**(c)** Page Breaks
**(d)** Different Odd & Even Pages

**Q97.** By which ministry of Government of India was the Deendayal Antyodaya Yojana started?

**(a)** Ministry of Corporate affairs
**(b)** Ministry of Home affairs
**(c)** Ministry of Rural Development
**(d)** Ministry of Labour and Employment

**Q98.** On which river in India was the Somasila Dam built?

**(a)** Sabarmati river
**(b)** Tapti river
**(c)** Krishna river
**(d)** Pennar river

**Q99.** Who among the following is a famous classical dancer?

**(a)** Pratibha Ray
**(b)** S Janaki
**(c)** Asha Bhosle
**(d)** Sonal Mansingh

**Q100.** How many times has India won the South Asian Football Federation (SAFF) Championship as of December 2023?

**(a)** 9 times
**(b)** 5 times
**(c)** 6 times
**(d)** 7 times

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## ANSWER KEY

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

## SOLUTIONS

**Q1. Answer: (d) All the workers have called off the strike.**

The correct answer is '4' i.e. "All the workers have called off the strike."

Key Points

• The original sentence uses "called of" instead of the correct phrasal verb "called off."

• The phrasal verb "call off" means to cancel or stop something that was planned, like a strike.

• Option 4, "called off the strike," is grammatically correct and fits well in the sentence.

Hence, the correct answer is option 4.

Correct sentence: All the workers have called off the strike.

Additional Information

• Option 1, "called at the strike," and Option 2, "called through the strike," do not make sense in the context of cancelling a strike.

• Option 3, "called between the strike," is also incorrect as it does not logically convey the meaning of stopping the strike.

**Q2. Answer: (c) and his friends comes**

The segment with a grammatical error is ‘3’ i.e. and his friends comes.

Key Points

• The segment "and his friends comes" is incorrect because of subject-verb agreement.

• The word "friends" is plural, so the correct verb form should be "come" instead of "comes."

• The corrected segment should read "and his friends come."

Hence, the correct answer is option 3.

Correct sentence: He organises a children’s fair every year, and his friends come to attend it.

Additional Information

• Option 1, "He organises," is correct with the British English spelling of "organises."

• Option 2, "to attend it," is grammatically correct and contextually appropriate.

• Option 4, "a children’s fair every year," is also correct and does not contain any grammatical errors.

• Proper subject-verb agreement is essential for maintaining grammatical accuracy in sentences.

**Q3. Answer: (a) asked for**

The correct answer is ‘1’ i.e. asked for.

Key Points

• The phrase "asked out" is incorrect in the context of requesting a favor.

• The correct phrase should be "asked for," as it properly conveys the act of requesting something.

• The corrected sentence should read “Samita asked for a favour of going early today.”

Hence, the correct answer is option 1.

Correct sentence: Samita asked for a favour of going early today.

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Additional Information

• Option 2, "asked around," means to inquire among several people, which does not fit the context.

• Option 3, "asked after," means to inquire about someone's well-being, which is also not suitable for this context.

• Option 4, "asked over," means to invite someone to one's home, which is not appropriate here either.

• Choosing the correct phrasal verb is crucial for conveying the intended meaning accurately.

**Q4. Answer: (d) to wind out**

The segment that contains an error is '4' i.e. to wind out.

Key Points

• The phrase "to wind out" is incorrect.

• The correct phrase should be "to wind up," which means to bring an activity or business to an end.

• The corrected sentence should read "They have decided to wind up their business without delay."

Hence, the correct answer is option 4.

Correct sentence: They have decided to wind up their business without delay.

Additional Information

• Option 1, "They have decided," is grammatically correct.

• Option 2, "their business," is grammatically correct and contextually appropriate.

• Option 3, "without delay," is also correct.

• Using the correct phrasal verbs ensures clarity and precision in communication.

**Q5. Answer: (d) Numerous**

The correct answer is 'Numerous'.

Key Points

• The passage discusses multiple health benefits associated with antioxidants.

• The appropriate adjective should indicate a large quantity to match the context of varied health benefits.

• "Numerous" fits well as it means many or a large number, which aligns with the context of the sentence describing multiple health benefits.

• Other options ("Few", "Countable", "Limited") do not convey the sense of a large quantity of benefits.

Therefore, the correct answer is 'Option 4'.

Complete Passage: (1)Numerous health benefits, including protection from cardiovascular disease and cancer, have been (2)_____ to antioxidants; however, according to dietitian Vinson, these benefits depend on how well antioxidants are absorbed and (3)__ by the body. According to the study, coffee has more antioxidant power than other well-known foods and drinks, like tea, milk, chocolate, and cranberries. Dates had the highest antioxidants per serving out of all the foods and drinks (4)__, but because dates are not consumed to the same extent as coffee, the latter comes out on (5)____, according to Vinson.

Additional Information

• Few: Indicates a small number, which does not align with the context of the passage describing a large number of health benefits.

• Countable: Refers to something that can be counted, which is not suitable for describing the numerous health benefits.

• Limited: Suggests a restricted quantity, which is not appropriate for the context of the passage discussing a wide range of benefits.

**Q6. Answer: (d) attributed**

The correct answer is 'attributed'.

Key Points

• The passage is explaining that health benefits are associated with or due to antioxidants.

• The word "attributed" means to regard something as being caused by or linked to a particular source, which fits the context of the sentence.

• "Negative" would imply an adverse effect, which is not suitable here.

• "Parallel" and "similar" do not convey the idea of causation or linking health benefits to antioxidants.

Therefore, the correct answer is 'Option 4'.

Complete Passage: (1) Numerous health benefits, including protection from cardiovascular disease and cancer, have been (2) attributed to antioxidants; however, according to dietitian Vinson, these benefits depend on how well antioxidants are absorbed and (3) ____ by the body. According to the study, coffee has more antioxidant power than other well-known foods and drinks, like tea, milk, chocolate, and cranberries. Dates had the highest antioxidants per serving out of all the foods and drinks (4) __, but because dates are not consumed to the same extent as coffee, the latter comes out on (5) ____, according to Vinson.

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Additional Information

• Negative: Suggests an adverse effect, which is not suitable in the context of health benefits.

• Parallel: Means running alongside, which does not fit the context of attributing benefits to a cause.

• Similar: Indicates likeness, which does not convey the idea of causation or linking benefits to antioxidants.

**Q7. Answer: (a) utilised**

The correct answer is 'utilised'.

Key Points

• The passage discusses how health benefits from antioxidants depend on their absorption and use in the body.

• "Utilised" means to make effective use of, which fits the context of the sentence describing the effective absorption and use of antioxidants by the body.

• "Rejected," "hinder," and "impede" all imply negative actions and do not fit the positive context of absorption and utilization of antioxidants.

Therefore, the correct answer is 'Option 1'.

Complete Passage: (1) Numerous health benefits, including protection from cardiovascular disease and cancer, have been (2) attributed to antioxidants; however, according to dietitian Vinson, these benefits depend on how well antioxidants are absorbed and (3) utilised by the body. According to the study, coffee has more antioxidant power than other well-known foods and drinks, like tea, milk, chocolate, and cranberries. Dates had the highest antioxidants per serving out of all the foods and drinks (4) ____, but because dates are not consumed to the same extent as coffee, the latter comes out on (5) ____, according to Vinson.

Additional Information

• Rejected: Means not accepted or discarded, which does not align with the context of the passage discussing how antioxidants are beneficial when absorbed and used by the body.

• Hinder: Means to create difficulties resulting in delay or obstruction, which is not suitable as it has a negative connotation.

• Impede: Means to delay or prevent, which also has a negative connotation and does not fit the positive context of the passage.

**Q8. Answer: (d) analysed**

The correct answer is 'analysed'.

Key Points

• The passage is discussing a study that compares the antioxidant power of various foods and drinks.

• The phrase "out of all the foods and drinks _____" implies that an analysis or comparison was made in the study.

• "Synthesised" means produced, which does not fit this context.

• "Consumed" means eaten or drunk, which would not fit the structure of the sentence here.

• "Assimilated" means absorbed, which is different from the action being described.

Therefore, the correct answer is 'Option 4'.

Complete Passage: (1) Numerous health benefits, including protection from cardiovascular disease and cancer, have been (2) attributed to antioxidants; however, according to dietitian Vinson, these benefits depend on how well antioxidants are absorbed and (3) utilised by the body. According to the study, coffee has more antioxidant power than other well-known foods and drinks, like tea, milk, chocolate, and cranberries. Dates had the highest antioxidants per serving out of all the foods and drinks (4) analysed, but because dates are not consumed to the same extent as coffee, the latter comes out on (5) _____, according to Vinson.

Additional Information

• Synthesised: Means to produce something by chemical or biological synthesis, not suitable here.

• Consumed: Means eaten or drunk, which does not fit the context.

• Assimilated: Means absorbed, but the context here is about analytical comparison.

**Q9. Answer: (d) top**

The correct answer is 'top'.

Key Points

• The passage is determining which food or drink has the highest antioxidant power, leading to a ranking where the "top" refers to the highest position.

• The word "top" is fitting as it denotes the highest rank or position in the comparison.

• "Below," "bottom," and "lowest" would incorrectly suggest a lower ranking.

Therefore, the correct answer is 'Option 4'.

Complete Passage: (1) Numerous health benefits, including protection from cardiovascular disease and cancer, have been (2) attributed to antioxidants; however, according to dietitian Vinson, these benefits depend on how well antioxidants are absorbed

and (3) utilised by the body. According to the study, coffee has more antioxidant power than other well-known foods and drinks, like tea, milk, chocolate, and cranberries. Dates had the highest antioxidants per serving out of all the foods and drinks (4) analysed, but because dates are not consumed to the same extent as coffee, the latter comes out on (5) top, according to Vinson.

Additional Information

• Below: Indicates a lower position, which is incorrect in this context.

• Bottom: Refers to the lowest position, not applicable here.

• Lowest: Again suggests the least in rank, which does not fit.

**Q10. Answer: (b) is covered in**

The correct answer is ‘2’ i.e. is covered in.

Key Points

• The phrase "is cover in" is grammatically incorrect because "cover" is not in the correct form.

• The correct phrase should be "is covered in," which is the past participle form of "cover" used in passive voice structures.

• The corrected sentence should read "The plum tree in our garden is covered in blossoms, as are the trees outside my office window."

Hence, the correct answer is option 2.

Correct sentence: The plum tree in our garden is covered in blossoms, as are the trees outside my office window.

Additional Information

• Option 1, "are cover at," is incorrect as it uses the wrong verb form and preposition.

• Option 3, "No substitution required," is incorrect because the original phrase "is cover in" is grammatically incorrect.

• Option 4, "is covering at," is incorrect because it uses the wrong verb form and preposition.

• Using the correct verb and preposition ensures the sentence is grammatically and contextually accurate.

**Q11. Answer: (c) warmly about**

The correct answer is ‘3’ i.e. warmly about.

Key Points

• The phrase "feel warm on" is incorrect idiomatically and contextually.

• The correct phrase should be "feel warmly about," which properly conveys positive feelings regarding the subject.

• The correct sentence should read "We feel warmly about the subject."

Hence, the correct answer is option 3.

Correct sentence: We feel warmly about the subject.

Additional Information

• Option 1, "warming about," is incorrect because "warming" is not appropriate in this context.

• Option 2, "warmed on," is incorrect because "warmed on" does not accurately convey the intended meaning.

• Option 4, "warmer on," is also incorrect as it does not fit the idiomatic expression correctly.

• Choosing the correct phrase is crucial for proper and clear communication.

**Q12. Answer: (b) Abundance**

The solution is in Hindi. Read it online.

**Q13. Answer: (a) Friend**

The solution is in Hindi. Read it online.

**Q14. Answer: (b) To remind**

The solution is in Hindi. Read it online.

**Q15. Answer: (d) the ship touched the shore**

The correct answer is ‘4’ i.e. the ship touched the shore.

Key Points

• The phrase "the ship touches the shore" is incorrect because the sentence is describing a past action.

• The correct phrase is "the ship touched the shore" to match the past tense "leaped."

• The correct sentence should read "A soldier of the tenth legion leaped into the water as soon as the ship touched the shore."

Hence, the correct answer is option 4.

Correct sentence: A soldier of the tenth legion leaped into the water as soon as the ship touched the shore.

Additional Information

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• Option 1, "No substitution required," is incorrect because the original sentence does not match the tense.
• Option 2, "the ship was touch the shore," is incorrect as it is grammatically incorrect.
• Option 3, "the ship touch the shore," is incorrect as it is not in the past tense.
• Using the correct verb tense ensures that the sentence is grammatically correct and clear.

**Q16. Answer: (d) Fertile**

The solution is in Hindi. Read it online.

**Q17. Answer: (d) aroma**

The correct answer is 'aroma'.

Key Points

• The word "aroma" is used to describe a pleasant smell, often associated with food, which fits the context of enjoying the smell of one's mother's cooking.
• "Stench" has a negative connotation, referring to a strong and unpleasant smell, which is inappropriate here.
• "Scent" can refer to any smell, but it is more neutral and does not specifically convey the pleasant nature expected in this context.
• "Perfume" is typically used to describe a pleasant smell associated with fragrances or flowers, not food.

Therefore, the correct answer is 'Option 4'.

Complete Sentence: I always love the aroma of my mother’s cooking.

Additional Information

• Stench: Strong, unpleasant smell, negative connotation.
• Scent: Can refer to any smell, neutral connotation.
• Perfume: Pleasant smell associated with fragrances or flowers, not food.

**Q18. Answer: (b) marijuena**

The solution is in Hindi. Read it online.

**Q19. Answer: (d) to be**

The correct answer is ‘4’ i.e. to be.

Key Points

• The phrase "were jailed" is incorrect because the dictator is ordering an action to be performed in the future.
• The correct phrase should be "to be jailed," which properly conveys the order given by the dictator.
• The correct sentence should read "The dictator ordered the traitor to be jailed."

Hence, the correct answer is option 4.

Correct sentence: The dictator ordered the traitor to be jailed.

Additional Information

• Option 1, "was," is incorrect because it does not fit the structure of an order.
• Option 2, "is," is incorrect because it indicates a present action rather than a directive.
• Option 3, "might," is incorrect as it implies possibility rather than a command.
• Choosing the correct phrase ensures the sentence is grammatically correct and accurately conveys the intended meaning.

**Q20. Answer: (b) Illusion**

The solution is in Hindi. Read it online.

**Q21. Answer: (b) Amazing**

The solution is in Hindi. Read it online.

**Q22. Answer: (b) Ruthlessly competitive**

The solution is in Hindi. Read it online.

**Q23. Answer: (b) Qualified**

The solution is in Hindi. Read it online.

**Q24. Answer: (d) explicit**

The solution is in Hindi. Read it online.

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**Q25. Answer: (d) Barren**

The solution is in Hindi. Read it online.

**Q26. Answer: (a) 73**

Given equation: 80 + 18 × 3 ÷ 5 - 23 = ?

| Sign | • | × |
|---|---|---|
| Interchange with | • | ÷ |

After interchanging the signs, the equation we get:

→ 80 - 18 ÷ 3 × 5 + 23 = ?

→ 80 - 6 × 5 + 23 = ?

→ 80 - 30 + 23 = ?

→ 103 - 30 = 73

Hence, the correct answer is "73".

**Q27. Answer: (c) 73**

The logic followed here is,

Hence, the correct answer is "73".

**Q28. Answer: (d) Clean : Sterile**

The logic followed here is:

Logic: Synonyms.

Here,

Plain : Austere → Plain is a synonym of Austere.

Similarly,

Clean : Sterile → Clean is a synonym of Sterile.

Hence, the correct answer is "Option 4".

**Q29. Answer: (a) [figure]**

When the paper is unfolded, we get:

Hence, the correct answer is "Option 1".

**Q30. Answer: (c) Tuesday**

Given: 9 March 2007 was Friday.

Now,

2007 to 2012 = 5 Years (3 Ordinary Years and 2 Leap Year 2008, 2012).

So, 2 Leap Year has 4 odd days,

And, 3 Ordinary Years have 3 odd days.

Total odd days = 4 + 3 = 7 odd days.

→ 7 odd days = 7/7 = 1 week and 0 odd day.

Then, 9 March 2012 will be Friday + 0 = Friday.

Now, the number of days between 9 March 2012 to 13 March 2012

= 4 days.

So, 13 March 2012 will be Friday + 4 = Tuesday.

Hence, the correct answer is "Option 3".

**Q31. Answer: (c) Three**

Given word: 'ABDUCTS'

After arranged in alphabetical order:

| Alphabets | A | B | D | U | C | T | S |
|---|---|---|---|---|---|---|---|
| Alphabetical order | A | B | C | D | S | T | U |

After arranged in alphabetical order,

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The positions of the letters 'A', 'B', and 'T' remain unchanged.
Hence, the correct answer is "Option 3".

**Q32. Answer: (a) [figure]**

The logic followed here is:
Logic: Step 1 and Step 2 are being followed on alternate basis.
Hence, the correct answer is "Option 1".

**Q33. Answer: (d) 35**

Given equation: 132 - 12 × 17 + 3 ÷ 27 = ?

| Sign | • | • |
|---|---|---|
| Interchange with | × | ÷ |

After interchanging the signs, the equation we get:
→ 132 ÷ 12 + 17 × 3 - 27 = ?
→ 11 + 17 × 3 - 27 = ?
→ 11 + 51 - 27 = ?
→ 62 - 27 = 35
Hence, the correct answer is "35".

**Q34. Answer: (a) 2111**

The logic followed here is,
Hence, the correct answer is "2111".

**Q35. Answer: (d) 9**

Let's count the number of rectangles in the given figure,
Hence, the correct answer is "9".

**Q36. Answer: (b) 18**

The logic followed here is:
Logic: (1st number × 1st number) + 2 = 2nd number.
Now,
For, 5 : 27
=> (5 × 5) + 2 = 25 + 2 = 27.
For, 7 : 51
=> (7 × 7) + 2 = 49 + 2 = 51.
Similarly, for 4 : ?
=> (4 × 4) + 2 = 16 + 2 = 18.
Hence, the correct answer is "Option 2".

**Q37. Answer: (a) 156**

The logic followed here is,
Hence, the correct answer is "156".

**Q38. Answer: (c) [figure]**

Let's check each option,
Hence, the correct answer is "Option 3".

**Q39. Answer: (c) (14, 28, 7)**

The logic followed here is:
Logic: (3rd number × 2) + 1st number = 2nd number.
Now,
For, (6, 12, 3)
=> (3 × 2) + 6 = 6 + 6 = 12.
For, (10, 20, 5)

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=> (5 × 2) + 10 = 10 + 10 = 20.

Now, let's check the options:

1. (21, 28, 7)

=> (7 × 2) + 21 = 14 + 21 = 35 ≠ 28

2. (14, 21, 7)

=> (7 × 2) + 14 = 14 + 14 = 28 ≠ 21

3. (14, 28, 7)

=> (7 × 2) + 14 = 14 + 14 = 28

4. (14, 28, 9)

=> (9 × 2) + 14 = 18 + 14 = 32 ≠ 28

Hence, the correct answer is "Option 3".

**Q40. Answer: (b) 5**

According to the given information,

Here, we can see that the code for 'H' is '5'.

Hence, the correct answer is "5".

**Q41. Answer: (a) TVN : RTL**

The logic followed here is,

for, PTL : NRJ

for, AEX : YCV

Let's check each option,

1) TVN : RTL

=> Follows the logic.

2) GIF : FIG

3) BTM : DVO

4) ABC : ZTS

Hence, the correct answer is "Option 1".

**Q42. Answer: (a) 3 and 9**

Let's check each option,

1) 3 and 9

→ 45 ÷ 9 + 12 × 3 – 15 + 2 × 5 = 36

→ 5 + 12 × 3 – 15 + 2 × 5 = 36

→ 5 + 36 – 15 + 10 = 36

→ 51 – 15 = 36

→ LHS = RHS => Satisfies the equation.

2) 5 and 3

→ 45 ÷ 5 + 12 × 9 – 15 + 2 × 3 = 36

→ 9 + 12 × 9 – 15 + 2 × 3 = 36

→ 9 + 108 – 15 + 6 = 36

→ 123 – 15 ≠ 36

→ LHS ≠ RHS

3) 12 and 5

→ 45 ÷ 3 + 5 × 9 – 15 + 2 × 12 = 36

→ 15 + 5 × 9 – 15 + 2 × 12 = 36

→ 15 + 45 – 15 + 24 = 36

→ 84 – 15 = 36

→ 69 ≠ 36

→ LHS ≠ RHS

4) 2 and 9

→ 45 ÷ 3 + 12 × 2 – 15 + 9 × 5 = 36

→ 15 + 12 × 2 – 15 + 9 × 5 = 36

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→ 15 + 24 – 15 + 45 = 36

→ 84 – 15 = 36

→ 69 ≠ 36

→ LHS ≠ RHS

Hence, the correct answer is "3 and 9".

**Q43. Answer: (d) Only conclusion (II) follows.**

The least possible venn diagram is shown below,

Conclusion (I): Some journals are wood → False (Because no definite relation given between journal and wood, so it can be possible only).

Conclusion (II): Some fans are books → True (Some books are fans implies that some fans are definitely books).

So, Only conclusion (II) follows.

Hence, the correct answer is "Option 4".

**Q44. Answer: (b) X + Y – Z**

Preparing the family tree using the following symbols,

| Code | × | ÷ | • | – |
|---|---|---|---|---|
| Relation | Brother | Sister | Father | Mother |

Let's check each option,

1) X × Y + Z

=> Here, X is Z's father's brother.

2) X + Y – Z

=> Here, X is Z's mother's father

3) X + Y × Z

=> Here, X is Z's brother's father.

4) X – Y + Z

=> Here, X is Z's father's father.

Hence, the correct answer is "Option 2".

**Q45. Answer: (b) KML**

The logic followed here is,

Hence, the correct answer is "KML".

**Q46. Answer: (d) [figure]**

The correct mirror image of the given figure is:

Hence, the correct answer is "Option 4".

**Q47. Answer: (b) Q**

Opposite surface of the open dice can be found by the below methods: -

• Alternate surfaces are opposite to each other.

• No two opposite surface are touched by side or by corners.

So, by using the above rule we can find the opposite surface of open dice.

Below are the opposite surfaces: -

Here, we can see that the letter on the opposite side of 'R' is 'Q'.

Hence, the correct answer is "Option 2".

**Q48. Answer: (a) [figure]**

Let's check each option,

Hence, the correct answer is "Option 1".

**Q49. Answer: (a) PTV**

Let's check each option,

1) PTV

=> Different from others.

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2) LQO
3) XCA
4) EJH
Hence, the correct answer is "Option 1".

**Q50. Answer: (b) ml**

According to the given information,
Here, we can see that the code for 'art' is 'ml'.
Hence, the correct answer is "ml".

**Q51. Answer: (c) 71.43%**

Given:
Maximum marks in Maths, Physics, and Chemistry = 140 each
Marks obtained by Rida in Maths = 70
Marks obtained by Rida in Physics = 110
Marks obtained by Rida in Chemistry = 120
Formula Used:
Percentage Marks = (Marks obtained/Maximum marks) × 100
Calculation:
Total marks obtained by Rida in PCM = 70 + 110 + 120 = 300
Total maximum marks in PCM = 140 × 3 = 420
Percentage Marks = (300/420) × 100
=> Percentage Marks = 71.43%
The percentage of marks obtained by Rida in PCM is 71.43%.

**Q52. Answer: (c) 20.3**

Given:
Area of ΔPQR = 12.96 $cm^2$
Area of ΔXYZ = 635.04 $cm^2$
QR = 2.9 cm
Formula used:
(Area of ΔPQR)/(Area of ΔXYZ) = $(QR^2)/(YZ^2)$
Calculation:
$12.96/635.04 = ((2.9)^2)/(YZ^2)$
$\Rightarrow 12.96/635.04 = 8.41/(YZ^2)$
$\Rightarrow YZ^2 = (8.41 \times 635.04)/12.96$
$\Rightarrow YZ^2 = 412.86$
$\Rightarrow YZ = \sqrt{412.86}$
$\Rightarrow YZ \approx 20.3$ cm
Therefore The correct answer is option (3).

**Q53. Answer: (d) 3.2**

Given:
In ΔABC, XY is drawn parallel to BC, cutting sides at X and Y.
AB = 5.4 cm
BC = 7.2 cm
BX = 3 cm
Formula Used:
By Basic Proportionality Theorem (Thales' theorem):
If a line is drawn parallel to one side of a triangle, it divides the other two sides proportionally.
Calculation:
By Basic Proportionality Theorem,
AX / XB = AY / YC

Let AX = x and AY = y.
We know AB = AX + XB, so 5.4 = x + 3
=> x = 5.4 - 3
=> x = 2.4 cm
Now, AX / XB = AY / YC
=> 2.4 / 3 = y / (7.2 - y)
=> 2.4(7.2 - y) = 3y
=> 17.28 - 2.4y = 3y
=> 17.28 = 5.4y
=> y = 17.28 / 5.4
=> y = 3.2 cm
Therefore, the length of XY is 3.2 cm.
The correct answer is option 4.
Alternate Method By Basic Proportionality Theorem,
AX / AB = XY / BC
AX = 5.4 - 3 = 2.4
2.4 / 5.4 = XY / 7.2
XY = (2.4 × 7.2) / 5.4 = 3.2 cm
The correct answer is option 4.

**Q54. Answer: (d) 56**

Given:
Radius of the circle with center O (r1) = 49 cm.
Radius of the circle with center A (r2) = 16 cm.
Formula used:
Length of the common tangent = $\sqrt{(d^2-(r1-r2)^2)}$
Where, d = distance between centre
Calculation:
Distance between centre = 49 + 16 = 65
So,
Length of the common tangent
=> $\sqrt{(65^2-(49-16)^2)}$
=> $\sqrt{(65^2-33^2)}$
=> $\sqrt{(65+33)(65-33)}$
=> $\sqrt{(98\times 32)}$
=> $\sqrt{(98\times 2\times 16)}$
=> 7 × 2 × 4 = 56 cm
Therefore The correct answer is option (4).

**Q55. Answer: (c) parallel**

Shortcut Trick
Compare the coefficients of the variables x and y in the given equations.
Ratio of x-coefficients (a1/a2) = 1/4
Ratio of y-coefficients (b1/b2) = 2/8 = 1/4
Ratio of constants (c1/c2) = 15/13
Since 1/4 = 1/4 ≠ 15/13, the lines are parallel.
Therefore The correct answer is parallel.
Alternate Method
Given:
Equation 1: x + 2y = 15 (where a1 = 1, b1 = 2, c1 = 15)
Equation 2: 4x + 8y = 13 (where a2 = 4, b2 = 8, c2 = 13)
Condition for Parallel Lines:

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For two linear equations a1x + b1y = c1 and a2x + b2y = c2, the lines are parallel if:
(a1/a2) = (b1/b2) ≠ (c1/c2)
Calculations:
=> a1/a2 = 1/4
=> b1/b2 = 2/8 = 1/4
=> c1/c2 = 15/13
=> 1/4 = 1/4 ≠ 15/13
=> Therefore, the system of equations has no solution and the graphs are parallel lines.
Therefore The correct answer is parallel.
Additional Information
Intersecting Lines
If (a1/a2) ≠ (b1/b2), the lines intersect at exactly one point (Unique solution).
Coincident Lines
If (a1/a2) = (b1/b2) = (c1/c2), the lines overlap and are coincident (Infinitely many solutions).
Consistency
A system is Inconsistent if the lines are parallel (no solution) and Consistent if there is at least one solution.

**Q56. Answer: (d) 2 8/11 hours**

Given:
Distance downstream = 60 km
Time taken downstream = 4 hours
Speed of the boat in still water = 13 km/h
Distance to cover upstream = 30 km
Formula Used:
Speed downstream = Distance downstream / Time downstream
Speed downstream = Speed of boat in still water + Speed of stream
Speed upstream = Speed of boat in still water - Speed of stream
Time upstream = Distance upstream / Speed upstream
Calculation:
Speed downstream = 60 km / 4 h
Speed downstream = 15 km/h
Speed downstream = Speed of boat in still water + Speed of stream
15 km/h = 13 km/h + Speed of stream
Speed of stream = 15 km/h - 13 km/h
Speed of stream = 2 km/h
Speed upstream = Speed of boat in still water - Speed of stream
Speed upstream = 13 km/h - 2 km/h
Speed upstream = 11 km/h
Time upstream = Distance upstream / Speed upstream
Time upstream = 30 km / 11 km/h
Time upstream = 30/11 hours
Time upstream = 2 8/11 hours
The correct answer is option 4.

**Q57. Answer: (a) 48000**

Shortcut Trick
Net percentage change = 5 − 5 − (5 × 5) ÷ 100 = −0.25%
Net population ratio = 100% − 0.25% = 99.75%
99.75% of population = 47,880
Initial population = 47,880 ÷ 0.9975 = 48,000
Therefore The correct answer is 48000.
Alternate Method

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Given: Final population = 47,880, First year increase = 5%, Second year decrease = 5%.
Formula Used: Final Value = Initial Value × (1 + r1/100) × (1 − r2/100)
=> Let the population at the beginning be P.
=> Population after 1st year = P × (1 + 5/100) = P × (105/100) = 21P/20
=> Population after 2nd year = (21P/20) × (1 − 5/100) = (21P/20) × (95/100) = (21P/20) × (19/20)
=> (21P/20) × (19/20) = 47,880
=> 399P / 400 = 47,880
=> P = (47,880 × 400) ÷ 399
=> P = 120 × 400 = 48,000
Therefore The correct answer is 48000.
Additional Information
Successive Percentage Change
When a value changes by x% and then y%, the net change is given by [x + y + (xy/100)]%.
Population Growth Formula
The final population after n years with constant growth rate r is $P_n = P0(1 \pm r/100)^n$.
Ratio Method for Percentages
A 5% increase corresponds to a ratio of 21/20, while a 5% decrease corresponds to a ratio of 19/20.

**Q58. Answer: (d) 19 : 12**

Given:
The ratio of a father's age to his son's age is 7 : 4.
The product of the numbers representing their ages is 1372.
Formula Used:
Let the father's age be 7x and the son's age be 4x.
The product of their ages = 7x × 4x = 1372
Calculation:
7x × 4x = 1372
=> $28x^2 = 1372$
=> $x^2 = 1372 / 28$
=> $x^2 = 49$
=> x = 7
Father's age = 7x = 7 × 7 = 49 years
Son's age = 4x = 4 × 7 = 28 years
After 8 years:
Father's age = 49 + 8 = 57 years
Son's age = 28 + 8 = 36 years
New ratio = 57 : 36
New ratio = 19 : 12
The ratio of their ages after 8 years will be 19 : 12.

**Q59. Answer: (a) 2018**

Given:
Export in 2013 = 9.9 crores
Export in 2014 = 10.8 crores
Export in 2015 = 7.8 crores
Export in 2016 = 5.2 crores
Export in 2017 = 6.5 crores
Export in 2018 = 9.5 crores
Export in 2019 = 11.4 crores
Formula used:
Percentage Increase = (Current Year Export - Previous Year Export)/(Previous Year Export) × 100
Calculation:

For 2014:
=> (10.8 - 9.9)/9.9 × 100 = 9.09%
For 2015:
=> (7.8 - 10.8)/10.8 × 100 = -27.78% (decrease)
For 2016:
=> (5.2 - 7.8)/7.8 × 100 = -33.33% (decrease)
For 2017:
=> (6.5 - 5.2)/5.2 × 100 = 25%
For 2018:
=> (9.5 - 6.5)/6.5 × 100 = 46.15%
For 2019:
=> (11.4 - 9.5)/9.5 × 100 = 20%
Therefore The maximum percentage increase is in 2018 with 46.15%.

**Q60. Answer: (b) cos x. cos y - sin x. sin y - sin x. cos y + cos x. sin y + (2 tan z)/(1-tan² z)**

Given:
We need to find the value of cos(x + y) - sin(x - y) + tan(2z).
Formula Used:
cos(x + y) = cos x · cos y - sin x · sin y
sin(x - y) = sin x · cos y - cos x · sin y
tan(2z) = (2 tan z)/(1 - tan² z)
Calculation:
Using the formulas:
cos(x + y) = cos x · cos y - sin x · sin y
sin(x - y) = sin x · cos y - cos x · sin y
tan(2z) = (2 tan z)/(1 - tan² z)
Combining these results:
=> cos(x + y) - sin(x - y) + tan(2z)
=> cos x · cos y - sin x · sin y - (sin x · cos y - cos x · sin y) + (2 tan z)/(1 - tan² z)
=> cos x · cos y - sin x · sin y - sin x · cos y + cos x · sin y + (2 tan z)/(1 - tan² z)
=> cos x · cos y - sin x · sin y - sin x · cos y + cos x · sin y + (2 tan z)/(1 - tan² z)
The correct answer is option 2.

**Q61. Answer: (c) 8 + π units**

Given:
Radius of the circle (r) = 4 units.
Angle subtended by the minor sector (θ) = 45º.
Formula Used:
Perimeter of a sector = 2r + 2πr × θ /360 (in radians)
Calculation:
Now, use the formula to calculate the perimeter:
=> Perimeter = 2 × 4 + 2π × 4 × 45/360
=> Perimeter = 8 + π
The perimeter of the minor sector is 8 + π.

**Q62. Answer: (d) A, B**

Given:
The production of cars from 2018 to 2020 for each type:
Type A: 2018 - 39, 2019 - 25, 2020 - 18
Type B: 2018 - 14, 2019 - 12, 2020 - 8
Type C: 2018 - 19, 2019 - 25, 2020 - 30
Type D: 2018 - 21, 2019 - 19, 2020 - 20
Formula Used:

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Identify continuous decrease by checking if each year's production is less than the previous year's.
Calculation:
For Type A:
2018: 39, 2019: 25, 2020: 18
39 > 25 > 18
Continuous decrease
For Type B:
2018: 14, 2019: 12, 2020: 8
14 > 12 > 8
Continuous decrease
For Type C:
2018: 19, 2019: 25, 2020: 30
19 < 25 < 30
No continuous decrease
For Type D:
2018: 21, 2019: 19, 2020: 20
21 > 19 < 20
No continuous decrease
The correct answer is option 4.

**Q63. Answer: (c) 27 days**

Given:
12 men working 9 hours/day complete the work in 24 days.
Formula Used:
Work = Number of Men × Number of Hours/Day × Number of Days
Calculation:
Work done by 12 men in 24 days:
Work = 12 × 9 × 24
Work = 2592 man-hours
Now, let x be the number of days required for 8 men working 12 hours/day to complete the same work.
Work = 8 × 12 × x
Since the work is the same, we set the equations equal:
8 × 12 × x = 2592
=> x = 2592 / (8 × 12)
=> x = 2592 / 96
=> x = 27
The number of days required is 27 days.

**Q64. Answer: (c) B; B**

Given:
Percentage of Skilled, Semi-skilled, and Un-skilled workers in companies A, B, C, and D:
Company A: Skilled = 30%, Semi-skilled = 40%, Un-skilled = 30%
Company B: Skilled = 25%, Semi-skilled = 30%, Un-skilled = 45%
Company C: Skilled = 40%, Semi-skilled = 40%, Un-skilled = 20%
Company D: Skilled = 40%, Semi-skilled = 25%, Un-skilled = 35%
Formula used:
To find the company with the highest and lowest percentages in specific categories, compare the given percentages.
Calculation:
Highest number of Un-skilled workers:
=> Company B: 45% Un-skilled (Highest)
Lowest number of Skilled workers:
=> Company B: 25% Skilled (Lowest)

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Therefore The company B has the highest number of Un-skilled workers and the lowest number of Skilled workers.

**Q65. Answer: (d) 15 liters**

Shortcut Trick

Convert quantity per rupee to price per liter.

CP of Milk = 1 ÷ (3/2) = Rs. 2/3 per liter.

CP of Water = Rs. 0 per liter.

Mean Price = 1 ÷ (15/8) = Rs. 8/15 per liter.

Using Alligation: Ratio of Milk to Water = (8/15 − 0) : (2/3 − 8/15) = 8/15 : 2/15 = 4 : 1.

If 4 units = 60 liters, then 1 unit = 15 liters.

Therefore The correct answer is 15 liters.

Alternate Method

Given:

Initial quantity of milk = 60 liters

Rate of milk = 1.5 liters per rupee => Price = Rs. 1/1.5 = Rs. 2/3 per liter

Rate of mixture = 1.875 liters per rupee => Price = Rs. 1/1.875 = Rs. 8/15 per liter

Calculations:

=> Let the quantity of water added be 'x' liters.

=> Total quantity of mixture = (60 + x) liters.

=> Cost of milk + Cost of water = Cost of mixture

=> 60 × (2/3) + x × 0 = (60 + x) × (8/15)

=> 40 = (60 + x) × 8/15

=> 40 × 15 = 480 + 8x

=> 600 = 480 + 8x

=> 8x = 120

=> x = 15 liters

Therefore The correct answer is 15 liters.

Additional Information

Alligation Rule

It states that (Quantity of cheaper / Quantity of dearer) = (Price of dearer − Mean Price) / (Mean Price − Price of cheaper).

Cost of Water

In problems involving milk and water, the cost price of water is always assumed to be zero unless specified otherwise.

Unit Consistency

Always ensure all values (CP of cheaper, CP of dearer, and Mean Price) are in the same units (e.g., Rs. per liter) before applying the alligation rule.

**Q66. Answer: (d) 693**

Given:

Diameter of the hemisphere = 21 cm

Radius (r) = Diameter / 2 = 21 / 2 = 10.5 cm

Formula Used:

Curved Surface Area (CSA) of a hemisphere = $2\pi r^2$

Calculation:

Radius (r) = 10.5 cm

π = 22 / 7

Curved Surface Area (CSA) = 2 × π × $r^2$

CSA = 2 × (22 / 7) × $(10.5)^2$

CSA = 2 × (22 / 7) × 110.25

CSA = 2 × 22 × 15.75

CSA = 693 $cm^2$

The correct answer is option 4: 693 $cm^2$.

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**Q67. Answer: (c) r n : 1**

Given:

A bank charges simple interest for Rs. K at the rate of $n^2$ years.

Another bank charges simple interest for Rs. L at the rate of $n^3$ years and gives the same interest.

Formula Used:

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

Calculation:

Let the interest be I.

For the first bank:

SI = K × r^(1/2) × $n^2$ / 100

=> I = K × r^(1/2) × $n^2$ / 100 ... (1)

For the second bank:

SI = L × r^(3/2) × $n^3$ / 100

=> I = L × r^(3/2) × $n^3$ / 100 ... (2)

Since the interest is the same:

From equations (1) and (2),

=> K × r^(1/2) × $n^2$ / 100 = L × r^(3/2) × $n^3$ / 100

=> K × r^(1/2) × $n^2$ = L × r^(3/2) × $n^3$

=> K / L = r^(3/2) × $n^3$ / (r^(1/2) × $n^2$)

=> K / L = r^(3/2 - 1/2) × n^(3 - 2)

=> K / L = r × n

=> K / L = rn

The ratio between K and L is r n : 1.

**Q68. Answer: (a) 8**

Given:

Simplify: 18 ÷ (7 × 2 - 5) × 5 × 24 ÷ 30

Formula Used:

Order of operations (PEMDAS/BODMAS): Parentheses, Exponents, Multiplication and Division (left to right), Addition and Subtraction (left to right)

Calculation:

18 ÷ (7 × 2 - 5) × 5 × 24 ÷ 30

First, solve inside the parentheses:

7 × 2 = 14

14 - 5 = 9

Now the expression is:

18 ÷ 9 × 5 × 24 ÷ 30

Next, perform the divisions and multiplications from left to right:

=> 18 ÷ 9 = 2

=> 2 × 5 = 10

=> 10 × 24 = 240

=> 240 ÷ 30 = 8

The correct answer is option 1: 8

**Q69. Answer: (a) 2**

Given:

Range: 2000 to 2020

Formula Used:

Number divisible by 8: n × 8

Calculation:

Number divisible by 8 from 2000 to 2020 : 2000, 2008, and 2016

Since we have to find the numbers lie between 2000 to 2020

Then, only 2008 and 2016 will be considered.
Thus, numbers = 2
Therefore The correct answer is option (1).
Additional Information
Note: If we have to find the numbers from 2000 to 2020 that are divisible by 8, then 2000 will also be considered.
Hence, the total number in this case will be 3.

**Q70. Answer: (d) Loss of 4%**

Given:
Selling price of each refrigerator = Rs. 10,000
Loss on one refrigerator = 20%
Gain on the other refrigerator = 20%
Formula Used:
Loss Percentage = [(Cost Price - Selling Price)/Cost Price] × 100
Gain Percentage = [(Selling Price - Cost Price)/Cost Price] × 100
Calculation:
Let the cost price of the first refrigerator be C1.
Loss of 20% means 10,000 = C1 - 0.2C1
=> 10,000 = 0.8C1
=> C1 = 10,000/0.8
=> C1 = 12,500
Let the cost price of the second refrigerator be C2.
Gain of 20% means 10,000 = C2 + 0.2C2
=> 10,000 = 1.2C2
=> C2 = 10,000/1.2
=> C2 = 8,333.33
Total cost price = C1 + C2 = 12,500 + 8,333.33 = 20,833.33
Total selling price = 10,000 + 10,000 = 20,000
Loss = Total cost price - Total selling price
Loss = 20,833.33 - 20,000 = 833.33
Loss Percentage = (833.33/20,833.33) × 100
=> Loss Percentage = 4%
The merchant incurred a loss of 4% on the whole transaction.

**Q71. Answer: (d) 20%**

Given:
Initial Salary = Rs. 2,00,000
New Salary = Rs. 2,40,000
Formula Used:
Percentage Increase = (New Salary - Initial Salary)/(Initial Salary) × 100
Calculation:
Percentage Increase = (2,40,000 - 2,00,000)/(2,00,000) × 100
Percentage Increase = (40,000)/(2,00,000) × 100
Percentage Increase = 0.2 × 100
Percentage Increase = 20%
The percentage increase in the salary is 20%.

**Q72. Answer: (a) 6 cm**

Given:
Capacity of the cylinder tank = 8316 $cm^3$
Radius of the base (r) = 21 cm
Formula Used:
Volume of a cylinder = $\pi r^2 h$

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Where, π (pi) ≈ 22/7, r = radius, h = height (or depth)

Calculation:

Volume = $\pi r^2 h$

$8316 = (22/7) \times 21^2 \times h$

=> $8316 = (22/7) \times 441 \times h$

=> $8316 = 22 \times 63 \times h$

=> $8316 = 1386h$

=> $h = 8316 / 1386$

=> $h = 6$ cm

The depth of the tank is 6 cm.

**Q73. Answer: (c) 120°**

Shortcut Trick

Angle subtended by major arc PQR at centre O = 240°

Angle subtended by the same arc at circumference (say angle PSR) = 240° ÷ 2 = 120°

In a cyclic quadrilateral, the exterior angle is equal to the interior opposite angle.

Since PQ is extended to A, the exterior angle angle AQR = interior opposite angle PSR.

=> angle AQR = 120°

Therefore The correct answer is 120°.

Alternate Method

Given:

Centre of circle = O

Angle subtended by arc PQR at O = 240°

PQ is extended to point A.

Property used:

1. The angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.

2. The sum of opposite angles of a cyclic quadrilateral is 180°.

3. Exterior angle of a cyclic quadrilateral is equal to the interior opposite angle.

Let S be any point on the minor arc PR.

=> Reflex angle POR = 240° (Angle subtended by arc PQR at centre)

=> angle PSR = 1/2 × Reflex angle POR

=> angle PSR = 1/2 × 240° = 120°

Now, PQRS is a cyclic quadrilateral because all four vertices lie on the circle.

=> angle PQR + angle PSR = 180° (Opposite angles of cyclic quadrilateral)

=> angle PQR = 180° − 120° = 60°

Since PQA is a straight line (extension of PQ):

=> angle PQR + angle AQR = 180° (Linear pair)

=> angle AQR = 180° − 60° = 120°

Therefore The correct answer is 120°.

Additional Information

Angle at Centre Theorem

The angle subtended by an arc at the center is exactly double the angle subtended by the same arc at any point on the circumference of the circle.

Cyclic Quadrilateral Exterior Angle

The exterior angle formed by extending one side of a cyclic quadrilateral is always equal to the interior opposite angle of the quadrilateral.

Opposite Angles Property

In any cyclic quadrilateral, the sum of a pair of opposite angles is always 180° (supplementary angles).

**Q74. Answer: (d) 64.29%**

Given:

Total persons in the group = 250

Percentage of males = 40%

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Percentage of females = 60%

Additional females joining the group = 30

Formula Used:

Percentage of females in the new group = (Number of females in the new group / Total number of persons in the new group) × 100

Calculation:

Number of females in the original group = 60% of 250

Number of females in the original group = 0.60 × 250

Number of females in the original group = 150

Number of females in the new group = 150 + 30

Number of females in the new group = 180

Total number of persons in the new group = 250 + 30

Total number of persons in the new group = 280

Percentage of females in the new group = (180 / 280) × 100

Percentage of females in the new group = (180 / 280) × 100

Percentage of females in the new group = 0.642857 × 100

Percentage of females in the new group = 64.29%

The percentage of females in the new group is 64.29%.

**Q75. Answer: (d) 4**

Shortcut Trick

Discounted Price of 12 pairs = 180 − (10% of 180) = 180 − 18 = 162.

Price per pair = 162 ÷ 12 = 13.5.

Number of pairs for Rs. 54 = 54 ÷ 13.5 = 4.

Therefore The correct answer is 4 pairs.

Alternate Method

Given → Marked Price (MP) of 12 pairs = Rs. 180, Discount = 10%, Total Amount = Rs. 54.

Formulas: SP = MP × (100 − Discount%) ÷ 100 | Quantity = Total Amount ÷ SP per unit.

=> Selling Price (SP) for 12 pairs = 180 × (90 ÷ 100) = Rs. 162.

=> Cost of 1 pair of gloves = 162 ÷ 12 = Rs. 13.5.

=> Pairs bought for Rs. 54 = 54 ÷ 13.5.

=> Pairs = 4.

Therefore The correct answer is 4 pairs.

Additional Information

Marked Price & Discount

The Marked Price is the price printed on the label. Discount is always calculated on the MP to find the Selling Price.

Unitary Method

Finding the value of a single unit first (price per pair) helps in calculating the quantity for any given total amount.

**Q76. Answer: (d) Muhammad Yunus**

The correct answer is Muhammad Yunus

Key Points

• Muhammad Yunus is recognized as the founder of modern microfinance.

• He established the Grameen Bank in Bangladesh in 1983, which provides small loans to the impoverished without requiring collateral.

• The concept of microfinance aims to empower the poor, especially women, by providing them with the means to start small businesses and improve their living conditions.

• Yunus's innovative banking model has been replicated worldwide and has helped millions of people escape poverty.

• In recognition of his efforts, Muhammad Yunus and the Grameen Bank were awarded the Nobel Peace Prize in 2006.

Additional Information

• Microfinance refers to financial services, including loans, savings, insurance, and fund transfers, provided to low-income individuals or groups who typically lack access to traditional banking services.

• The Grameen Bank model is based on mutual trust, accountability, participation, and creativity.

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• The success of microfinance institutions like the Grameen Bank has demonstrated that providing financial services to the poor can be a sustainable and profitable venture.

• Microfinance has been a powerful tool for social and economic development, contributing to poverty reduction, women's empowerment, and improved health and education outcomes.

Important Points

C. Rangarajan:

• C. Rangarajan is a distinguished Indian economist and former Governor of the Reserve Bank of India (RBI).

• He played a significant role in India's economic liberalization during the 1990s.

• Rangarajan has also served as the Chairman of the Prime Minister's Economic Advisory Council.

• He is known for his contributions to macroeconomic policy and banking reforms in India.

V.K.V. Rao:

• V.K.V. Rao is a noted Indian economist with expertise in economic policy and planning.

• He has made significant contributions to the study of poverty, inequality, and regional disparities in India.

• Rao has held various academic and research positions, influencing public policy through his work.

• His research has been instrumental in shaping discussions around economic development and social welfare.

Y.V. Reddy:

• Y.V. Reddy is a prominent Indian economist and former Governor of the Reserve Bank of India (RBI).

• He is credited with steering India’s economy through the global financial crisis of 2008 with his prudent monetary policies.

• Reddy has also authored several books on banking, finance, and public policy.

• He is widely respected for his independent thinking and contributions to financial stability in India.

**Q77. Answer: (c) Rabi crops**

The correct answer is Rabi crops

Key Points

• Rabi crops are sown after the end of the monsoon season, typically in the months of October and November.

• The term "Rabi" means spring in Arabic, and these crops are harvested in the spring season, around April and May.

• Common examples of Rabi crops include wheat, barley, peas, gram, and mustard.

• These crops rely on the residual moisture in the soil from the monsoon rains and require a cool growing season and a warm, dry harvesting season.

Additional Information

• Rabi crops are also known as winter crops because they are sown in winter and harvested in the spring.

• These crops require less water compared to Kharif crops, making them suitable for regions with less rainfall.

• The Green Revolution in India significantly increased the production of Rabi crops, particularly wheat, due to the introduction of high-yielding varieties and improved agricultural practices.

**Q78. Answer: (b) a - iii, b - iv, c - i, d - ii**

The correct answer is option 2

Key Points

• Pt Shiv Kumar Sharma is renowned for playing the Santoor.

• Anushka Shankar is a celebrated Sitar player.

• Bismillah Khan is famous for his mastery of the Shehnai.

• Ustad Binda Khan is associated with the Sarangi.

Additional Information

• The Santoor is a hammered dulcimer, a type of stringed instrument.

• The Sitar is a plucked string instrument used in Hindustani classical music.

• The Shehnai is a double-reed instrument, similar to the oboe, and is often used in traditional Indian music.

• The Sarangi is a bowed, short-necked string instrument from India.

**Q79. Answer: (c) Subhas Chandra Bose**

The correct answer is Subhas Chandra Bose

Key Points

• Subhas Chandra Bose was a prominent Indian nationalist leader who led the Indian National Army (INA) against British colonial rule during World War II.

• The INA was initially formed in 1942 under Mohan Singh, but it gained significant momentum and recognition under the

leadership of Subhas Chandra Bose.

• Bose's leadership was instrumental in revitalizing the INA and garnering support from Indian expatriates in Southeast Asia.

• The INA played a crucial role in India's struggle for independence, inspiring many through its motto "Give me blood, and I will give you freedom."

• Subhas Chandra Bose's efforts and the INA's activities were pivotal in raising awareness and support for India's independence movement on an international scale.

Additional Information

• Subhas Chandra Bose was born on January 23, 1897, in Cuttack, Odisha, and was a key figure in the Indian independence movement.

• He was known for his radical approach and differences with Mahatma Gandhi's more pacifist methods.

• In 1943, Bose proclaimed the establishment of the Provisional Government of Free India in Singapore, which was supported by the Axis powers during World War II.

• The INA's campaigns, particularly in the northeastern regions of India, are remembered for their bravery and the sacrifices made by its soldiers.

• Subhas Chandra Bose's legacy continues to inspire generations, and he is affectionately remembered as "Netaji" (Respected Leader) by millions of Indians.

**Q80. Answer: (b) Rasmi Ranjan Das**

The correct answer is Rasmi Ranjan Das

Key Points

• Rasmi Ranjan Das was appointed to the UN tax committee in July 2021.

• The appointment is for the 2021 to 2025 term.

• The UN tax committee is responsible for addressing issues related to international tax cooperation and policies.

• Rasmi Ranjan Das is recognized for his expertise in international tax matters and his contributions to the field.

Additional Information

• The UN Committee of Experts on International Cooperation in Tax Matters is a subsidiary body of the Economic and Social Council (ECOSOC).

• The committee works to enhance international tax cooperation and assist countries in their efforts to mobilize domestic resources for development.

• It provides guidance on tax matters, including tax treaties, transfer pricing, and tax avoidance and evasion.

• The appointment of experts to the committee is based on their technical expertise and experience in tax policy and administration.

**Q81. Answer: (c) Aravidu dynasty**

The correct answer is Aravidu dynasty

Key Points

• The Aravidu dynasty was the last dynasty to rule the Vijayanagara Empire.

• The dynasty was founded by Tirumala Deva Raya after the fall of the Tuluva dynasty.

• It ruled from the late 16th century until the early 17th century, marking the end of the Vijayanagara Empire’s dominance in South India.

• The fall of the Aravidu dynasty led to the fragmentation of the empire into smaller states and the rise of regional powers.

Additional Information

• The Vijayanagara Empire was established in 1336 by Harihara I and Bukka Raya I of the Sangama dynasty.

• It is known for its contributions to art, architecture, and culture, including the construction of the famous Virupaksha Temple and the Hampi complex.

• The empire played a crucial role in protecting South India from invasions by the Deccan Sultanates.

• The decline of the Vijayanagara Empire began with the Battle of Talikota in 1565, where the combined forces of the Deccan Sultanates defeated the empire.

**Q82. Answer: (c) Rajasthan**

The correct answer is Rajasthan

Key Points

• According to the Census of India-2011, Rajasthan has the largest gap between male and female literacy rates.

• The literacy rate in Rajasthan for males is significantly higher compared to females, highlighting the gender disparity in education.

• Efforts have been made to bridge this gap through various educational programs and initiatives, but challenges still remain.

• The gender gap in literacy is an important indicator of social inequality and has implications for the overall development of the state.

Additional Information

• The Census of India is conducted every ten years and provides comprehensive data on various demographic parameters, including literacy rates.

• Literacy rate is defined as the percentage of people aged seven and above who can read and write with understanding.

• Reducing the gender gap in literacy is crucial for achieving gender equality and empowering women in society.

• Various schemes such as the Beti Bachao Beti Padhao and Sarva Shiksha Abhiyan have been launched to promote female education in India.

• Despite improvements over the years, rural areas in Rajasthan still face significant challenges in terms of female literacy.

**Q83. Answer: (c) New India Literacy Programme**

The correct answer is New India Literacy Programme

Key Points

• The New India Literacy Programme is the centrally sponsored scheme related to literacy launched by the Government of India in March 2023.

• This scheme aims to address the challenges of adult literacy and promote lifelong learning.

• The programme focuses on several key areas including foundational literacy and numeracy, critical life skills, vocational skills development, and continuing education.

• It targets non-literate individuals aged 15 years and above, aiming to make them literate and numerate.

Additional Information

• The scheme is a part of the Government of India's broader efforts to achieve the Sustainable Development Goal (SDG) 4, which focuses on quality education and lifelong learning opportunities for all.

• It is designed to be inclusive, ensuring that marginalized groups such as women, Scheduled Castes (SC), Scheduled Tribes (ST), and minorities have access to literacy and education resources.

• The initiative also incorporates the use of digital technology to enhance learning and provide flexible learning opportunities.

• The programme emphasizes community participation and partnerships with various stakeholders, including NGOs, to effectively implement its objectives.

**Q84. Answer: (b) Authentication**

The correct answer is Authentication

Key Points

• Authentication is the process of verifying the identity of individuals or organizations attempting to access a system.

• It ensures that only genuine users can gain access to the system, thereby protecting it from unauthorized access.

• Common methods of authentication include passwords, biometric verification, and multi-factor authentication.

• Authentication is a critical component of computer security, alongside other aspects such as confidentiality, availability, and non-repudiation.

Additional Information

• Confidentiality refers to protecting information from being accessed by unauthorized parties.

• Availability ensures that information and resources are accessible to authorized users when needed.

• Non-repudiation prevents individuals or entities from denying their actions or commitments in a digital context.

• Effective computer security requires a combination of these elements to ensure the integrity, confidentiality, and availability of information.

**Q85. Answer: (d) 11**

The correct answer is 11 points

Key Points

• As per Olympic rules, badminton players change ends in the third game when a side scores 11 points.

• This rule is in place to ensure fairness by mitigating the effects of any environmental factors such as wind or lighting that could favor one side of the court.

• The rule applies to both singles and doubles matches in badminton.

• Players also change ends at the end of the first game and at the end of the second game if a third game is to be played.

Additional Information

• The Badminton World Federation (BWF) is the international governing body for the sport of badminton.

• According to the BWF regulations, the change of ends helps to maintain the balance and fairness of the game.

• The current scoring system in badminton is the 21-point rally scoring system, where players score a point on every serve, regardless of which side is serving.

• The BWF regularly updates the rules and regulations to enhance the sport and ensure fair play.

**Q86. Answer: (d) Milankovitch theory**

The correct answer is Milankovitch theory

Key Points

• Milankovitch theory describes the collective effects of changes in Earth's movements on its climate over thousands of years.

• These movements include changes in the Earth's eccentricity, axial tilt, and precession, collectively known as Milankovitch cycles.

• The theory suggests that these cycles influence the distribution of solar energy received by the Earth, impacting long-term climate patterns such as ice ages.

• Named after Serbian geophysicist and astronomer Milutin Milankovitch, who extensively studied and developed this theory in the early 20th century.

Additional Information

• Milankovitch cycles operate over tens of thousands to hundreds of thousands of years, making them significant for understanding past climate changes and predicting future trends.

• The theory has been supported by evidence from ice core samples, ocean sediments, and other geological data that show periodic climate changes corresponding to the cycles.

• While Milankovitch cycles play a crucial role in long-term climate patterns, other factors such as greenhouse gas concentrations and volcanic activity also contribute to Earth's climate system.

**Q87. Answer: (b) nebula**

The correct answer is nebula

Key Points

• A nebula is a cloud of dust and gas inside a galaxy.

• Nebulae are often regions where new stars are being formed.

• They can be composed of hydrogen, helium, and other ionized gases.

• Some of the well-known nebulae include the Eagle Nebula, the Orion Nebula, and the Crab Nebula.

• Nebulae can be observed in various colors depending on the elements they contain and the types of radiation they emit.

Additional Information

• The term "nebula" was originally used to describe any diffuse astronomical object, including galaxies beyond the Milky Way.

• Modern astronomy distinguishes between different types of nebulae, such as emission nebulae, reflection nebulae, and dark nebulae.

• Emission nebulae glow brightly due to the ionization of their gases by nearby high-energy stars.

• Reflection nebulae do not emit their own light but reflect the light of nearby stars.

• Dark nebulae are dense clouds of gas and dust that block the light from objects behind them.

**Q88. Answer: (a) Assam**

The correct answer is Assam

Key Points

• Gulab Chand Kataria was appointed as the Governor of Assam in 2023.

• He succeeded the previous governor, Jagdish Mukhi.

• Gulab Chand Kataria has a long-standing political career and has served in various capacities within the government of Rajasthan.

• His appointment as the Governor of Assam adds to his extensive experience in public service and governance.

Additional Information

• The role of a Governor in India is largely ceremonial, but they play a crucial part in the state's legislative process and in maintaining constitutional order.

• The Governor is appointed by the President of India and serves at the pleasure of the President.

• The Governor has the power to grant pardons, reprieves, respites, or remissions of punishment or to suspend, remit, or commute the sentence of any person convicted of any offense against any law relating to a matter to which the executive power of the state extends.

• The Governor is also responsible for appointing the Chief Minister and other ministers, and they play a key role during times of

political instability in the state.

**Q89. Answer: (b) Only (B) is true**

The correct answer is Option 2

Key Points

• PC Mahalanobis is remembered as a major contributor to India's developmental path because he formulated the Second Five-Year Plan.

• He was a pioneer in the field of statistics and played a crucial role in the establishment of the Indian Statistical Institute.

• The Second Five-Year Plan, based on the Mahalanobis model, emphasized the importance of the industrial sector and aimed at promoting rapid industrialization in India.

• His contributions have had a lasting impact on India's economic planning and statistical system.

Additional Information

• PC Mahalanobis was also instrumental in introducing the concept of large-scale sample surveys in India.

• He founded the Indian Statistical Institute in 1931, which became a leading center for research and training in statistics.

• The Mahalanobis distance, a measure used in statistics, is named after him.

• The Second Five-Year Plan was implemented from 1956 to 1961 and laid the foundation for heavy industries in India.

• PC Mahalanobis served as a member of the Planning Commission of India from 1955 to 1967.

**Q90. Answer: (c) Five**

The correct answer is Five

Key Points

• Five types of writs can be issued by the Supreme Court to protect the Fundamental Rights of Indian citizens.

• These writs are: Habeas Corpus, Mandamus, Prohibition, Quo-Warranto, and Certiorari.

• The power to issue these writs is granted to the Supreme Court under Article 32 of the Constitution of India.

• The writ of Habeas Corpus is issued to produce a person who has been detained unlawfully before the court and to set them free if such detention is found illegal.

• The writ of Mandamus commands a public authority to perform a public duty.

• The writ of Prohibition is issued by a higher court to a lower court to prevent it from exceeding its jurisdiction.

• The writ of Quo-Warranto is issued to prevent a person from holding a public office to which they are not entitled.

• The writ of Certiorari is issued to transfer a case from a lower court to a higher court for review.

Additional Information

• Article 32 of the Indian Constitution is known as the "Heart and Soul" of the Constitution by Dr. B.R. Ambedkar.

• It provides the right to individuals to move the Supreme Court directly in case of violation of Fundamental Rights.

• The Supreme Court has the power to issue writs not only for Fundamental Rights but also for other purposes under Article 139 of the Constitution.

• Similarly, the High Courts have the power to issue writs under Article 226 of the Constitution.

• The writ jurisdiction of the High Courts is broader as it is not confined to the protection of Fundamental Rights alone.

**Q91. Answer: (d) Khordad Sal**

The correct answer is Khordad Sal

Key Points

• Khordad Sal is a significant festival celebrated by the Parsi community, who practice Zoroastrianism.

• This festival marks the birth anniversary of Zoroaster, the founder of Zoroastrianism.

• It is a day of thanksgiving and celebration, where Parsis engage in prayers, feasting, and community activities.

• The festival is observed with great fervor and is considered one of the most important events in the Zoroastrian calendar.

• On this day, Zoroastrians reflect on the teachings of Zoroaster and reaffirm their commitment to the principles of good thoughts, good words, and good deeds.

Additional Information

• Zoroastrianism is one of the world's oldest monotheistic religions, dating back to the 6th century BCE in ancient Persia.

• The religion emphasizes the duality of good and evil and the importance of individual choice in promoting good.

• Zoroaster, also known as Zarathustra, is considered a prophet and a spiritual leader who reformed the ancient religious practices of Persia.

• The Parsi community in India is one of the largest groups of Zoroastrians globally, having migrated from Persia to avoid religious persecution.

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• Other important festivals for Zoroastrians include Jamshed-e-Navroz (the Persian New Year) and Pateti (the last day of the Zoroastrian year).

**Q92. Answer: (c) 1 - B, 2 - C, 3 - A**

The correct answer is Option 3

Key Points

• Vande Mataram was written by Bankim Chandra Chattopadhyay.

• Jana Gana Mana was written by Rabindranath Tagore.

• Ae Mere Watan Ke Logon was written by Pradeep.

• The correct matching is:

• 1 - B

• 2 - C

• 3 - A

Additional Information

• Vande Mataram is a hymn to the motherland and played a vital role in the Indian independence movement.

• Jana Gana Mana is the national anthem of India, adopted on January 24, 1950.

• Ae Mere Watan Ke Logon is a patriotic song commemorating the soldiers who died during the Sino-Indian War.

**Q93. Answer: (c) Guttation**

The correct answer is Guttation

Key Points

• Guttation is the process by which water is expelled from the edges of leaves of certain plants in the form of droplets.

• This occurs primarily during the night when soil moisture levels are high, and transpiration is low.

• It is different from transpiration, which is the evaporation of water from plant surfaces, mainly through stomata.

• Guttation usually occurs through specialized structures called hydathodes.

Additional Information

• Pressure gradient refers to the difference in hydrostatic pressure that drives the movement of water and nutrients within plant tissues.

• Plasmolysis is the process where cells lose water in a hypertonic solution, causing the cell membrane to pull away from the cell wall.

• Translocation is the movement of nutrients and other solutes within the plant, typically through the phloem.

• The process of guttation is most commonly observed in grasses, strawberries, and some herbaceous plants.

**Q94. Answer: (c) 1896**

The correct answer is 1896

Key Points

• Tennis was first included in the Olympic Games in the year 1896.

• The 1896 Summer Olympics, officially known as the Games of the I Olympiad, were held in Athens, Greece.

• Tennis was one of the nine sports contested at these inaugural games.

• It remained a part of the Olympic program until 1924, after which it was removed but was later reintroduced as a full medal sport in 1988.

Additional Information

• The 1896 Olympics marked the beginning of the modern Olympic Games, which have since grown into the world's foremost sports competition.

• The idea of revitalizing the Olympic Games was led by Baron Pierre de Coubertin, a French educator and historian.

• The modern Olympic Games are held every four years, with the Summer and Winter Games alternating every two years within the four-year period.

• The Olympic Games aim to promote peace and unity through sports, embodying the Olympic motto, "Citius, Altius, Fortius" (Faster, Higher, Stronger).

**Q95. Answer: (c) 2**

The correct answer is 2

Key Points

• Clause 2 of Article 20 incorporates the doctrine of double jeopardy.

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• Double jeopardy means that no person shall be prosecuted and punished for the same offense more than once.

• Article 20 of the Indian Constitution provides protection in respect of conviction for offenses.

• It ensures that laws do not operate retroactively, protects against double jeopardy, and prohibits self-incrimination.

• These protections are part of the fundamental rights guaranteed to individuals under the Indian Constitution.

Additional Information

• Article 20 is a crucial provision in the Constitution of India that safeguards individuals' rights against arbitrary state actions in criminal matters.

• The three clauses of Article 20 provide protections against ex post facto laws, double jeopardy, and self-incrimination.

• These protections ensure fair treatment and due process of law for individuals accused of crimes.

• The doctrine of double jeopardy is a fundamental principle in criminal jurisprudence, aimed at preventing the misuse of legal processes to harass individuals.

**Q96. Answer: (d) Different Odd & Even Pages**

The correct answer is Different Odd & Even Pages

Key Points

• Different Odd & Even Pages is a feature in MS Word that allows you to create distinct headers and footers for odd and even pages in a document.

• This feature is useful for creating documents that require different formatting on alternating pages, such as books, reports, or academic papers.

• To enable this feature, go to the Header & Footer Tools Design tab and check the Different Odd & Even Pages box.

• Once enabled, you can customize the headers and footers for odd and even pages separately by navigating between them and making the desired changes.

Additional Information

• In addition to the Different Odd & Even Pages feature, MS Word also offers other header and footer customization options, such as Different First Page, which allows for a unique header and footer on the first page of the document.

• Section breaks can be used to apply different headers and footers to different sections of the document, providing even greater flexibility in document design.

• Understanding and utilizing these features can enhance the professionalism and readability of your documents.

**Q97. Answer: (c) Ministry of Rural Development**

The correct answer is Ministry of Rural Development

Key Points

• The Deendayal Antyodaya Yojana was started by the Ministry of Rural Development of the Government of India.

• This scheme aims to uplift the urban and rural poor by enhancing sustainable livelihood opportunities through skill development.

• It encompasses both the National Rural Livelihoods Mission (NRLM) and the National Urban Livelihoods Mission (NULM).

• The scheme is named after Deendayal Upadhyaya, an Indian philosopher, economist, and politician, who was one of the key leaders of the Bharatiya Jana Sangh, the forerunner of the present-day Bharatiya Janata Party (BJP).

• The primary goal of the Deendayal Antyodaya Yojana is to reduce poverty by enabling the poor households to access gainful self-employment and skilled wage employment opportunities, resulting in an appreciable improvement in their livelihoods on a sustainable basis.

Additional Information

• The Ministry of Rural Development is responsible for the implementation and oversight of rural development programs in India.

• It works towards improving the quality of life and economic well-being of people living in rural areas.

• Key initiatives under the Ministry include the Pradhan Mantri Awas Yojana (Gramin), Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), and Pradhan Mantri Gram Sadak Yojana (PMGSY).

• The Ministry also focuses on promoting social inclusion, gender equity, and sustainable development.

• It collaborates with various state governments, non-governmental organizations, and international agencies to achieve its objectives.

**Q98. Answer: (d) Pennar river**

The correct answer is Pennar river

Key Points

• The Somasila Dam is built on the Pennar river in India.

• The dam is located in the Nellore district of Andhra Pradesh.

• It is primarily used for irrigation and water supply purposes.

• The dam helps in controlling floods and providing drinking water to nearby regions.

Additional Information

• The Pennar river originates from the Nandi Hills in Karnataka and flows through the states of Karnataka and Andhra Pradesh.

• The river is also known for other major projects like the Srisailam Dam and the Somasila Project.

• The Somasila Dam was completed in 1989 and has a storage capacity of 1.994 billion cubic meters.

• The dam plays a crucial role in the agricultural development of the region by providing a stable water source for irrigation.

**Q99. Answer: (d) Sonal Mansingh**

The correct answer is Sonal Mansingh

Key Points

• Sonal Mansingh is a renowned classical dancer from India.

• She is celebrated for her performances in various classical dance forms including Bharatanatyam and Odissi.

• Sonal Mansingh has received several prestigious awards, including the Padma Vibhushan, Padma Bhushan, and Sangeet Natak Akademi Award.

• Her contributions to Indian classical dance have been significant, making her a prominent figure in the cultural landscape of India.

Additional Information

• Pratibha Ray is a well-known Indian author.

• S Janaki and Asha Bhosle are celebrated playback singers in the Indian music industry.

• Sonal Mansingh's extensive career includes not only performances but also teaching and promoting classical dance forms.

• She has established several institutions to impart training in classical dance and has been an advocate for the preservation and promotion of Indian cultural heritage.

**Q100. Answer: (a) 9 times**

The correct answer is 9 times

Key Points

• India has won the South Asian Football Federation (SAFF) Championship 9 times as of December 2023.

• The SAFF Championship is a biennial football competition of the men's national teams of South Asia, organized by the South Asian Football Federation.

• India has been the most successful team in the tournament's history.

• The tournament aims to promote and develop football in the South Asian region.

Additional Information

• The SAFF Championship was first held in 1993.

• India won its first SAFF Championship title in 1993.

• The most recent SAFF Championship win for India was in 2021.

• The tournament has helped in increasing the popularity and standard of football in the South Asian region.

• Other participating countries in the SAFF Championship include Bangladesh, Bhutan, Maldives, Nepal, Pakistan, and Sri Lanka.

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