SSC CHSL Previous Paper 12 (Held On: 12 Oct 2020 Shift 3) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2020 • 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. Directions: Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select No improvement.

As much as a hundred children gathered to celebrate Independence Day.

(a) As long as
(b) No improvement
(c) As high as
(d) As many as

Q2. Directions: Select the most appropriate meaning of the given idiom.

A dime a dozen

(a) Expensive
(b) Very common
(c) Uncommon
(d) Phenomenal

Q3. Directions: Select the most appropriate meaning of the given idiom.

Couch Potato

(a) Lazy person
(b) Skinny
(c) Hyperactive
(d) Overweight

Q4. Directions: Select the most appropriate word to fill in the blank.

For thousands of years, humans have been _____ the earth, making scars upon the land.

(a) redecorating
(b) distracting
(c) remaking
(d) damaging

Directions

In the following passage, some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank.

We do not want to condemn the ‘word’. It is, after all, a mighty instrument; it is the means by _(1)_ we tell each other of our emotions, the way in which we influence others. Words can do _(2)_ good but also cause terrible injuries. It is true that at first there was the deed; the word came later. It was in some respects a cultural progress _(3)_ the deed became a word. But the word was _(4)_ a spell, a magical act, and it _(5)_ much of its power.

Q5. Select the most appropriate option for blank No. 1.

(a) what
(b) that
(c) whose
(d) which

Q6. Select the most appropriate option for blank no. 2

(a) numerable
(b) countable
(c) immeasurable
(d) miserable

Q7. Select the most appropriate option for blank no. 3

(a) however
(b) when
(c) which
(d) such

Q8. Select the most appropriate option for blank no. 4

(a) lastly
(b) firstly
(c) originally
(d) quickly

Q9. Select the most appropriate option for blank no. 5

(a) has retained
(b) will retained
(c) retained
(d) have retained

Q10. Directions: Select the most appropriate synonym of the given word.

INSIDIOUS

(a) Crafty
(b) Callous
(c) Sincere
(d) Benevolent

Q11. Directions: Select the word which means the same as the group of words given.

Combine to form a whole

(a) Integrate
(b) Scatter
(c) Disjoin
(d) Create

Q12. Directions: Select the most appropriate antonym of the given word.

Timid

(a) Dubious
(b) Bold
(c) Sincere
(d) Punctual

Q13. Directions: Select the most appropriate synonym of the given word.

Diligent

(a) Lethargic
(b) Untiring

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(c) Inattentive
(d) Weary

Q14. Directions: Given below are four sentences in jumbled order. Out of the given options pick the one that gives their correct order.

A: At the metro station, he noticed a homeless man.
B: He decided to travel to the office by the metro train.
C: He sent his damaged car to the garage for repairs.
D: Johnny had a car accident.

(a) DBAC
(b) DACB
(c) DBCA
(d) DCBA

Q15. Directions: Given below are four sentences in jumbled order. Out of the given options pick the one that gives their correct order.

A. A boy tended his master's dogs near a pond.
B. However, he realized that the way he talked to them never made them happy.
C. Soon he found the tending and his life there very boring.
D. All he could do to kill the boredom was by talking to the dogs.

(a) ACDB
(b) ADBC
(c) DCAB
(d) ABCD

Q16. Directions: Select the most appropriate antonym of the given word.

Disillusioned

(a) Embittered
(b) Disappointed
(c) Soured
(d) Enthusiastic

Q17. Directions: Select the wrongly spelt word.

(a) Consequence
(b) Providance
(c) Musician
(d) Fixation

Q18. Directions: Select the most appropriate word to fill in the blank.

There should be _____ punishment for rule-breakers

(a) much
(b) too
(c) severe
(d) many

Q19. Directions: In the sentence identify the segment which contains a grammatical error.

Our twenty-first-century society expects all relevant information to simply be handing to us.

(a) to simply be
(b) expects all relevant information
(c) Our twenty-first century society
(d) handing to us.

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Q20. Directions: Select the correct indirect form of the given sentence.

Vishnu said, "I am going to the theatre this evening."

(a) Vishnu said that I am going to the theatre this evening
(b) Vishnu said that he would go to the theatre that evening.
(c) Vishnu said that he was going to the theatre this evening.
(d) Vishnu said that he was going to the theatre that evening.

Q21. Directions: Select the wrongly spelt word.

(a) Subtle
(b) Esteem
(c) Mimic
(d) Respectfull

Q22. Directions: Select the word which means the same as the group of words given.

Steal or misappropriate money

(a) Overcharge
(b) Raid
(c) Embezzle
(d) Manipulate

Q23. Directions: In the sentence identify the segment which contains the grammatical error.

Behaviour modification techniques are often used to the training of police dogs.

(a) are often used
(b) Behavior modification techniques
(c) of police dogs
(d) to the training

Q24. Directions: Select the correct passive form of the given sentence.

The mechanic repaired my bike.

(a) The bike is repaired by my mechanic.
(b) My bike has been repaired by the mechanic
(c) The bike was being repaired by my mechanic.
(d) My bike was repaired by the mechanic.

Q25. Directions: Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select No improvement.

So much as you behave like this, the decision of the management against you cannot be revoked.

(a) No improvement
(b) As long to
(c) As much to
(d) As long as

GENERAL INTELLIGENCE

Q26. Select the combination of letters that when sequentially placed in the blanks of the given letter series will complete the series.

ab_ _ _bca_ _acb _ _ _aac _ _

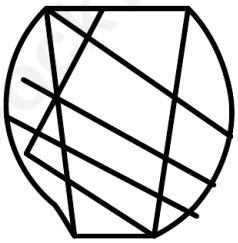
(a) aacbacabbc
(b) cbaabcabca
(c) cabaabcabc
(d) aabcabccab

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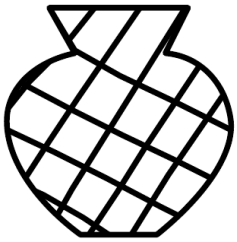
Q27. Select the option in which the given figure is embedded.(Rotation is not allowed)



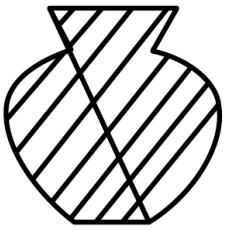
(a)



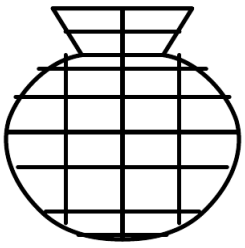
(b)



(c)



(d)

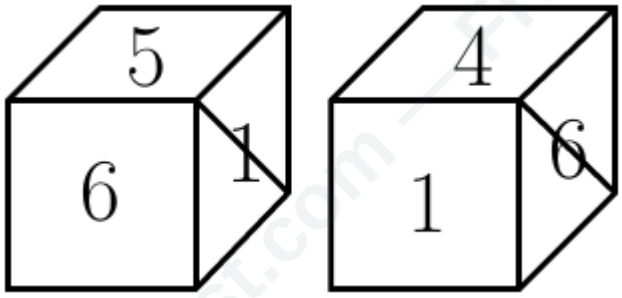


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Q28. Arvind gives half of his monthly salary to his wife for household expenses. He spends Rs.2,500 on his personal expenses. The saving he manages per month is 3/7 of his monthly salary. What is Arvind's per month salary?

(a) 30,000
(b) 35,000
(c) 25,000
(d) 28,000

Q29. Two different positions of the same dice are shown. Select the number that will be on the face opposite to the one having '2', if the number on the face opposite to '3' is odd.



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

Q30. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

1. Few boys play hockey.
2. Few girls don't play badminton.
3. Everyone plays either hockey or badminton.

Conclusions:

I. Boys don't play badminton.

II. Few girls play hockey.

III. No one plays both hockey and badminton.

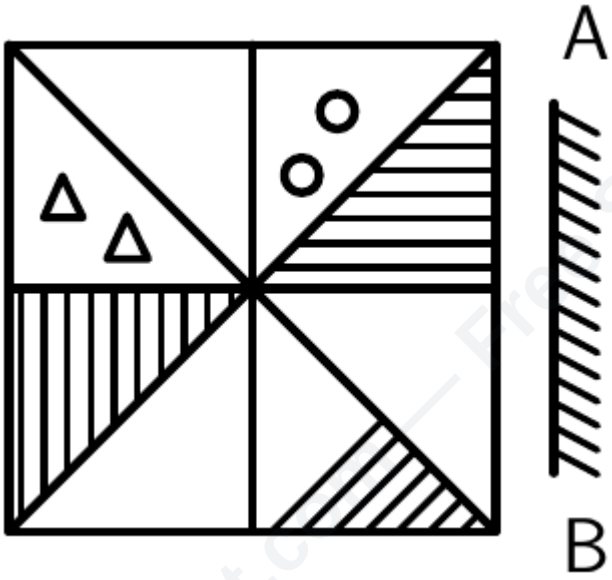
(a) Only conclusion I follows.
(b) Only conclusions II and III follows.
(c) Only conclusions III follows.
(d) Only conclusions II follows.

Q31. Four number-pairs have been given, out of which three are alike in some manner and one is different. Select the number-pair that is different from the rest.

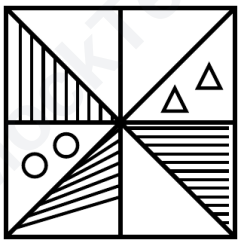
(a) 28 : 70
(b) 120 : 300
(c) 320 : 480
(d) 16 : 40

Q32. Select the correct mirror image of the given figure when the mirror is placed to the right side of the figure.

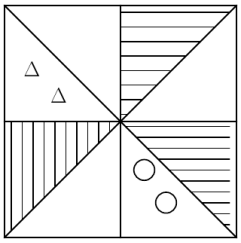
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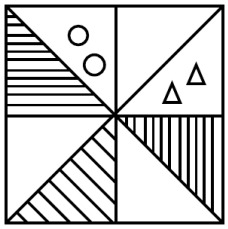
(a)



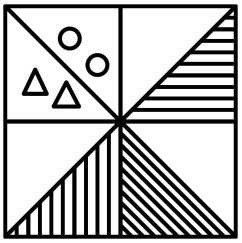
(b)



(c)



(d)



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Q33. Arrange the following words in a logical and meaningful order.

I. Heptagon

II. Octagon

III. Nonagon

IV. Hexagon

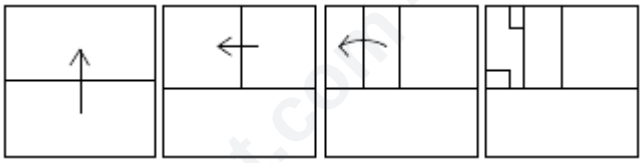
(a) IV, I, II, III

(b) IV, III, I, II

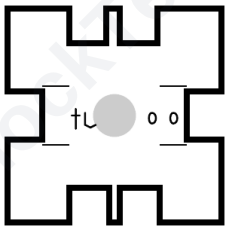
(c) III, I, II, IV

(d) III, II, IV, I

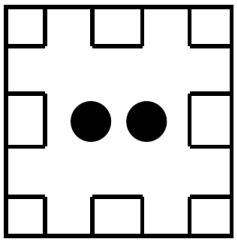
Q34. The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfoldd?



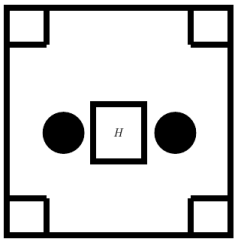
(a)



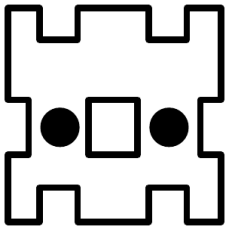
(b)



(c)



(d)



Q35. Select the number that can replace the question mark (?) in the following series.

2, 7, 5, 2, 3, 1, ?

(a) 4
(b) 0
(c) • 1
(d) 2

Q36. Which of the following order of numbers will make the below equation correct?

36 × 5 - 18 ÷ 6 + 2 = 78

(a) 5 × 6 - 36 ÷ 18 + 2
(b) 36 × 2 - 18 ÷ 6 + 5
(c) 18 × 5 - 36 ÷ 2 + 6
(d) 5 × 2 - 18 ÷ 6 + 36

Q37. B is the only son of A. C is the mother of D. A is the mother of C. The relation of B with D is:

(a) brother
(b) Paternal uncle
(c) Maternal uncle
(d) father

Q38. While traveling by bus, a man spent Rs. 60 more than 10 times the fare he paid for an auto rickshaw. The total amount spent by him is 13 times the fare he paid for an auto rickshaw. What total amount of money was spent on Bus as well as Auto rickshaw by the man?

(a) Rs. 30
(b) Rs 390
(c) Rs. 570
(d) Rs. 60

Q39. Select the option in which the numbers share the same relationship as that shared by the given pair of numbers.

42 : 18

(a) 19 : 5
(b) 31 : 28
(c) 10 : 9
(d) 71 : 45

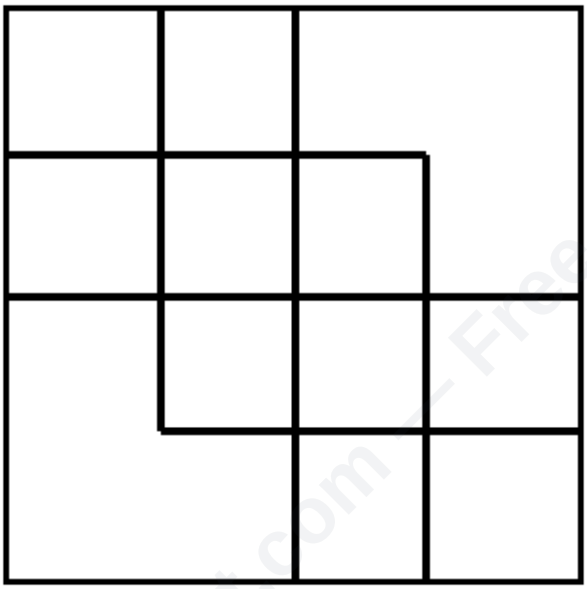
Q40. Select the option in which the words share the same relationship as that shared by the given pair of words.

Sahara : Africa

(a) Gobi : Asia
(b) Thar : Australia
(c) Gibson : Europe
(d) Sandy : America

Q41. How many squares are present in the following figure?

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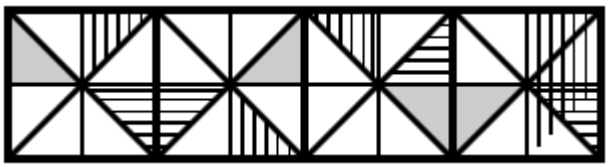


(a) 18
(b) 15
(c) 16
(d) 17

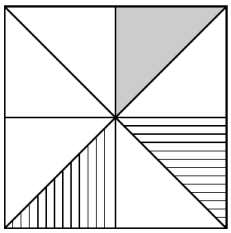
Q42. In a certain code language, BLINK is coded as 2226 and ALL is coded as 1312. How will EYES be coded as in that language?

(a) 6513
(b) 5448
(c) 3219
(d) 1044

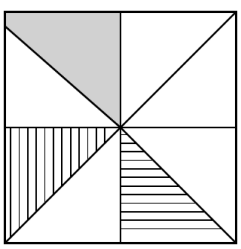
Q43. Select the figure that will come next in the following figure series.



(a)

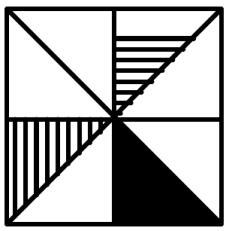


(b)

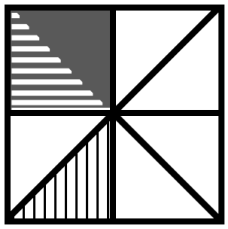


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(c)

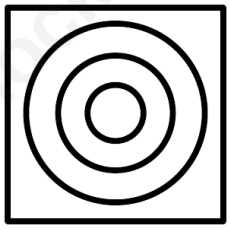


(d)

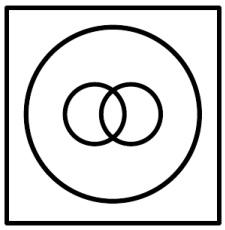


Q44. Select the Venn diagram that best illustrates the relationship between the following:
Australia, Sydney, Amsterdam

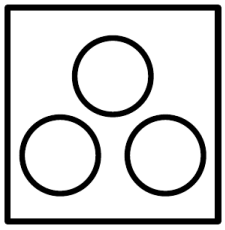
(a)



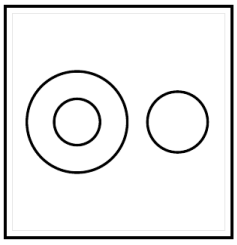
(b)



(c)



(d)



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Q45. Select the option in Which the numbers are related in the same way as are the numbers of the following set.

(3, 6, 30)

(a) (5, 20, 420)
(b) (2, 4, 22)
(c) (-4, 24, 342)
(d) (4, 12, 132)

Q46. Select the number that can replace the question mark (?) in the following series.

1, 8, 9, 64, 25, 216?

(a) 256
(b) 343
(c) 49
(d) 128

Q47. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.

CLOCK : CNSIS :: WATCH:?

(a) WCXIP
(b) WCVEJ
(c) WBWHO
(d) WBVFL

Q48. In a certain code language, TRAIN is written as FHYQL. How will CHEQUE be written as in that language?

(a) WRUIEU
(b) OTQCGQ
(c) XSVJFV
(d) VQTHDT

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

(a) JPZ
(b) MQS
(c) DLP
(d) FHN

Q50. 'Pythagoras' is related to 'Geometry' in the same way as 'Kepler' is related to '_____'.

(a) Astronomy
(b) Optics
(c) Electronics
(d) Geography

QUANTITATIVE APTITUDE

Q51. A person deposits Rs. 8,000 in a bank which pays 8% p.a. simple interest. The amount after 8 years will be:

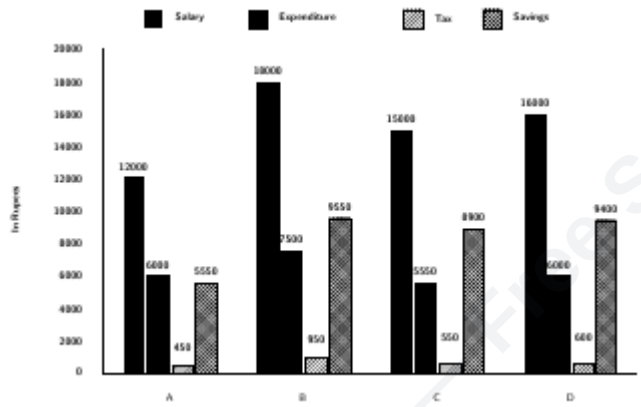
(a) Rs. 10,784
(b) Rs.12,545
(c) Rs.12,600
(d) Rs.13,120

Q52. When an integer n is divided by 5, the remainder is 3. What is the remainder if 8n is divided by 5?

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

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Q53.



The above graph represents the salary, expenditure, tax and saving (in rupees) details of the persons A, B, C and D per month.

Study the graph and answer the question.

The tax as a percentage of salary is highest in case of.

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

Q54. If the sum of two numbers is 11 and the sum of their squares is 65, then the sum of their cubes will be:

(a) 407
(b) 576
(c) 615
(d) 355

Q55. Kishore had a loss of 20% on selling an article for Rs. 7,160. At what price should he have sold the item to make a profit of 30%?

(a) Rs. 12,007
(b) Rs. 11,635
(c) Rs.8,988
(d) Rs.10,678

Q56. What is the value of $\sin^2 45° + \cos^2 45°$?

(a) • 1
(b) 2
(c) 1
(d) 0

Q57. If sin x=12/37, then what is the value of tan x?

(a) 35/37
(b) 35/12
(c) 12/35
(d) 37/12

Q58. If $2x + y = 6$ and $xy = 4$, then find the value of $8x^3 + y^3$ is:

(a) 16
(b) 72
(c) 48
(d) 64

Q59. What is the radius of the circle whose area is equal to the sum of the areas of two circles whose radii are 15 cm and 8 cm?

(a) 13 cm
(b) 15 cm
(c) 17 cm
(d) 14 cm

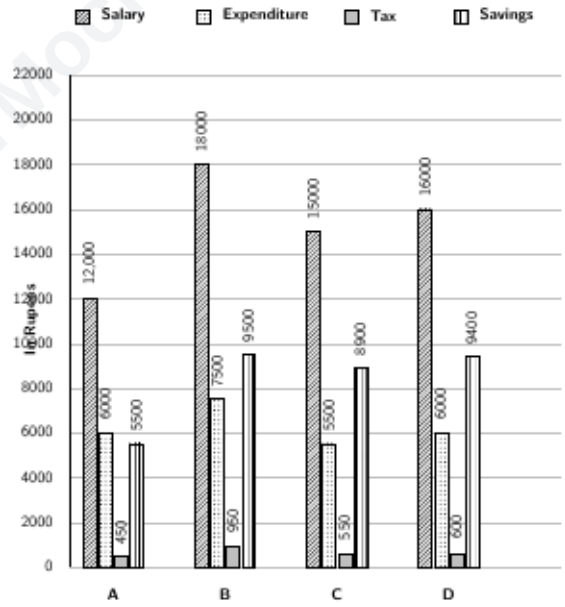
Q60. Two concentric circles are of radii 13 cm and 5 cm. The length of chord which touches the smaller circle is:

(a) 15 cm
(b) 13 cm
(c) 24 cm
(d) 10 cm

Q61. The lengths of the two sides forming the right angle of a right-angled triangle are 21 cm and 20 cm. What is the radius of the circle circumscribing the triangle?

(a) 15.5 cm
(b) 12 cm
(c) 14.5 cm
(d) 14 cm

Q62.



The above graph represents the salary, expenditure, tax and saving (in rupees) per month of the person A, B, C and D per month.

Study the graph and answer the question.

The expenditure as a percentage of salary is the least for:

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

Q63. What is the distance between two parallel tangents of a circle of radius 8 cm?

(a) 8 cm
(b) 12 cm
(c) 16 cm
(d) 4 cm

Q64. The marked price of a fan is Rs. 3,250 and the shopkeeper allows a discount of 8% on it. What is the selling price of the fan?

(a) Rs. 3,070
(b) Rs. 2,990
(c) Rs. 2,590
(d) Rs. 3,270

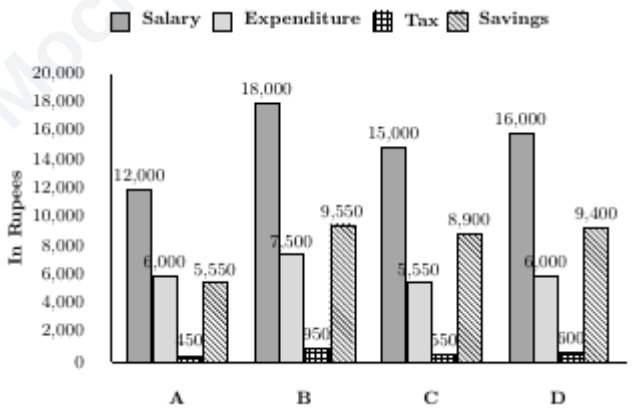
Q65. If the three sides of a triangle are 11 cm, 12 cm and 13 cm, then what is the area of the given triangle (in cm^2)?

(a) $13\sqrt{26}$
(b) $17\sqrt{42}$
(c) $15\sqrt{13}$
(d) $6\sqrt{105}$

Q66. The sum of three numbers is 79. If the ratio of the first number of the second number is 4 : 7 and that of the second number to the third number is 4 : 5, then the second number is:

(a) 12
(b) 15
(c) 28
(d) 35

Q67.



The above graph represents the salary, expenditure, tax and saving (in rupees) per month of the persons A, B, C and D.

Study the graph and answer the question.

Savings as a percentage of salary is highest in case of:

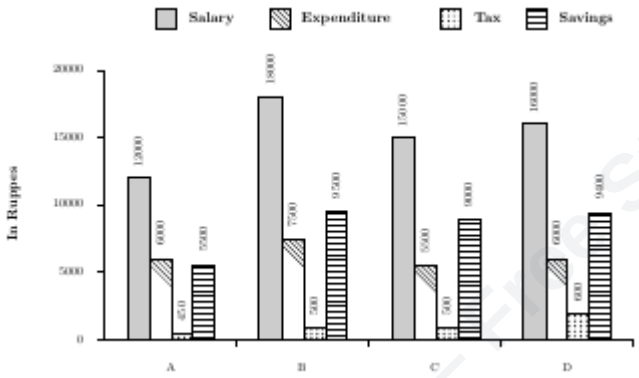
(a) B
(b) C
(c) A
(d) D

Q68. Shyam can complete a task in 12 days by working 10 hours a day. How many hours a day should he work to complete the task in 8 days?

(a) 15
(b) 12
(c) 14
(d) 16

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Q69.



The above graph represents the salary, expenditure, tax and saving (in rupees) details of the persons A, B, C and D per month.

Study the graph and answer the question.

Tax as the percentage of salary is least in case of:

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

Q70. Three years ago, the average age of a husband, wife, and child was 26 years, and that of the wife and the child, 5 years ago, was 20 years. The present age of the husband is:

(a) 39 years
(b) 42 years
(c) 37 years
(d) 45 years

Q71. A train of length 350 m crosses a bridge of length 250 m in 20 seconds. What is the speed of the train (in km/h)

(a) 72
(b) 95
(c) 108
(d) 88

Q72. If $x^2+1/(x^2)=38$, then what is the value of $| x - 1/x |$?

(a) 9
(b) 6
(c) 5
(d) 4

Q73. If $\tan \theta = 20/21$, then the value of $(\sin \theta - \cos \theta)/(\sin \theta + \cos \theta)$ is:

(a) (-1)/41
(b) 29/35
(c) 27/21
(d) (-29)/31

Q74. The value of $[0.9 - \{2.3 - 3.2 - (7.1 - 5.4 - 3.5)\}]$ is:

(a) 1.8
(b) 2.6
(c) 0
(d) 0.18

Q75. If 22% of x = 30% of y, then y : x is equal to:

(a) 15 : 11
(b) 11 : 15
(c) 17 : 16
(d) 15 : 14

GENERAL AWARENESS

Q76. Mughal emperor Shah Jahan made the monument Taj Mahal constructed in memory of his wife _____.

(a) Jahanara
(b) Mumtaz Mahal
(c) Roshnara
(d) Noorjahan

Q77. Who among the following is NOT a well known Tabla player in Hindustani classical style of music?

(a) Swapan Chowdhury
(b) Amjad Ali
(c) Zakir Hussain
(d) Latif Ahmed

Q78. 'Bhagta Parab', a tribal festival that is celebrated between the period of spring and summer, originated in the state of _____.

(a) Mizoram
(b) Maharashtra
(c) Madhya Pradesh
(d) Jharkhand

Q79. When was the 'Quit India Movement' started?

(a) August 1942
(b) April 1919
(c) October 1905
(d) February 1928

Q80. With which neighboring country does Gujarat share its border?

(a) Bangladesh
(b) Bhutan
(c) Nepal
(d) Pakistan

Q81. The three-carbon molecules broken down from six-carbon molecules of glucose during the first step in the process of nutrition in all organisms is called:

(a) pyruvate
(b) ethane
(c) methane
(d) butane

Q82. Which of the following schemes launched by the present government has been correctly matched with its purpose?

(a) AASHA Scheme – Remunerative prices to ward boys for serving patients
(b) SAGARMALA Scheme – To regularise selling of goods at ports
(c) SUMAN Scheme – Free medicines to pregnant women
(d) UJJWALA Scheme – Street lighting

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Q83. National Sports Day of India is celebrated on 29 August every year in honour of which sportsperson?

(a) Balbir Singh Sr.
(b) Major Dhyan Chand Singh
(c) Milkha Singh
(d) Leslie Walter Claudius

Q84. The 'transformation curve' is also known as the:

(a) demand curve
(b) supply curve
(c) production possibility curve
(d) indifference curve

Q85. Which is the correctly matched option of captain of cricket team and year of World Cup victory?

(a) Michael Clarke – 2007
(b) Ricky Ponting – 2011
(c) Imran Khan – 1996
(d) Kapil Dev – 1983

Q86. Which of the following statements about firewall (in the context of computing) is INCORRECT?

(a) It is unable to permit legitimate communication to pass.
(b) It is frequently used to protect a computer network from unauthorized access.
(c) It permits network transmission based on a set of rules.
(d) It is a combination of both, software and hardware devices.

Q87. Who was the chairman of the drafting committee of the Constitution of India?

(a) B.R. Ambedkar
(b) K.M. Munshi
(c) Sardar Vallabhbhai Patel
(d) Mohammad Saadullah

Q88. _____ refers to money that has already been spent and which cannot be recovered.

(a) Imputed cost
(b) Sunk cost
(c) Opportunity cost
(d) Replacement cost

Q89. Which American President won the Nobel Peace Prize?

(a) Abraham Lincoln
(b) Barack Obama
(c) George Washington
(d) Bill Clinton

Q90. What is the name of the force with which earth pulls everything towards itself?

(a) Air pressure
(b) Thrust
(c) Gravity
(d) Resistance

Q91. Which of the following are the biodiversity hotspots of India?

(A) Western Ghats
(B) North-East India
(C) Sundaland

(a) Only B
(b) A, B and C
(c) Only A

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(d) A and B

Q92. The award given to the best coach among coaches of all the different games is known as _____.

(a) Dronacharya Award
(b) Ashoka Chakra Award
(c) Arjuna Award
(d) Phalke Award

Q93. _____ is no longer considered as a planet within Earth's Solar system.

(a) Neptune
(b) Mars
(c) Pluto
(d) Uranus

Q94. Who wrote the book ‘My Experiments with Truth’?

(a) M.K. Gandhi
(b) Jawaharlal Nehru
(c) Rabindranath Tagore
(d) Amitav Ghosh

Q95. As of January 2020, who was the chief of the Indian Army?

(a) Manoj Mukund Naravane
(b) Rakesh Kumar Singh Bhadauria
(c) Bipin Rawat
(d) Karambir Singh

Q96. In which year did the convention on wetlands, the 'Ramsar Convention', come into force in India?

(a) 1978
(b) 1984
(c) 1982
(d) 1991

Q97. Which Rajput ruler of Mewar in 1576 fought the Battle of Haldighati ?

(a) Maharana Pratap
(b) Rana Amar Singh
(c) Maharaja Udai Singh
(d) Raja Man Singh

Q98. Which of the following parts of the human body releases carbon dioxide, brought in by the blood, from the rest of the body?

(a) Trachea
(b) Bronchi
(c) Alveoli
(d) Larynx

Q99. ‘Rongali Bihu’ one of the major festival of Assam is celebrated in the month of_____.

(a) March
(b) June
(c) October
(d) April

Q100. Who appoints the Chief Justice of India?

(a) Judges of Supreme Court and High Court
(b) PM of India
(c) President of India in consultation with senior judges of Supreme Court and High Court

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(d) President of India in consultation with senior judges of Supreme Court

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (d) As many as

The correct answer is "As many as".

Key Points

• In the given sentence, hundred "children" are countable noun.

• We use "as much as" for uncountable nouns.

• We use "as many as" for countable nouns.

• Therefore, "as much as" should be replaced by "as many as".

• Hence, the correct answer is option 4.

Correct Sentence: As many as a hundred children gathered to celebrate Independence Day.

Additional Information

• "As many as" is used to show surprise at how large a number of people or things is.

Q2. Answer: (b) Very common

The correct answer is "Very common".

Key Points

• Given Idiom: A dime a dozen means something very common and not having much value.

• Example: Dance and reality shows are now outdated and a dime a dozen.

• From the given options, the second option is the most appropriate meaning of the given idiom.

• Hence, the correct answer is option 2.

Additional Information

• The idiom/phrase originates from: It was introduced in 1796. During the 1800s, this phrase was used in its literal meaning, referring to items that cost a dime for a dozen of those items. Since the early 1900s, the phrase has been used in its figurative sense, meaning something common and of less value.

Q3. Answer: (a) Lazy person

The correct answer is "Lazy person".

Key Points

• Given Idiom: Couch Potato means a very lazy person.

• Example: My younger brother is a great couch potato; he can sleep the whole day.

• From the given options, the first option is the most appropriate meaning of the given idiom.

• Hence, the correct answer is option 1.

Mistake Points

• We may think from the phrase "Couch Potato" and the options that it is all about overweight or skinny person, but the correct

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answer is option 1. So be careful while dealing with such questions.

Additional Information

• The idiom/phrase originates from: This idiom is supposed to be originated in the 1970s in America by a comic artist who drew two idle, inactive and lazy characters he named them "Couch Potatoes" since then this phrase became very popular to call names someone who spends lots of time watching television, then being habitual of TV they put on weight and looks more like a potato.

Q4. Answer: (d) damaging

The correct answer is "damaging".

Key Points

• Let us explore the given options:

• Redecorating means to freshen or change in appearance.

• Distracting means diverting (attention) from something.

• Remaking means making (something) again or differently.

• Damaging means causing or capable of causing harm.

• Hence, the correct answer is option 4.

Complete Sentence: For thousands of years, humans have been damaging the earth, making scars upon the land.

Q5. Answer: (d) which

The correct answer is "which".

Key Points

• Let us explore the given options:

• What means (referring to the whole of an amount) whatever.

• That is used for referring to a specific thing previously mentioned, known, or understood.

• Whose means of whom or which (used to indicate that the following noun belongs to or is associated with the person or thing mentioned in the previous clause).

• Which is used for referring to something previously mentioned when introducing a clause giving further information.

• Hence, the correct answer is option 4.

Q6. Answer: (c) immeasurable

The correct answer is "immeasurable".

Key Points

• Let us explore the given options:

• Numerable means able to be counted.

• Countable means able to be counted.

• Immeasurable means too large, extensive, or extreme to measure.

• Miserable means causing unhappiness or discomfort.

• Hence, the correct answer is option 3.

Q7. Answer: (b) when

The correct answer is "when".

Key Points

• Let us explore the given options:

• 'However' is used to introduce a statement that contrasts with or seems to contradict something that has been said previously.

• 'When' means at or on which (referring to a time or circumstance).

• 'Which' is used referring to something previously mentioned when introducing a clause giving further information.

• 'Such' means of the type about to be mentioned.

• Hence, the correct answer is option 2.

Q8. Answer: (c) originally

The correct answer is "originally".

Key Points

• Let us explore the given options:

• Lastly means in the last place (used to introduce the last of a series of points or actions).

• Firstly is used to introduce a first point or reason.

• Originally means from or in the beginning; at first.
• Quickly means with little or no delay; promptly.
• Hence, the correct answer is option 3.

Q9. Answer: (a) has retained

The correct answer is "has retained".

Key Points

• The given sentence is in the present perfect tense. The present perfect is formed using has/have + past participle.
• The pronoun 'it' will take a singular verb.
• Let us explore the given options:
• Has retained is in the present perfect form and the verb 'has' is a singular form of the verb.
• Will retained is in future tense and also the form of the verb 'retained' used with it is incorrect.
• Retained is the past form of the verb.
• Have retained is in the present perfect form but the verb 'have' is a plural form of the verb.
• Hence, the correct answer is option 1.

Q10. Answer: (a) Crafty

The solution is in Hindi. Read it online.

Q11. Answer: (a) Integrate

The correct answer is "Integrate".

Key Points

• Let us explore the given options:
• Integrate means combine (one thing) with another to form a whole.
• Scatter means a small, dispersed amount of something.
• Disjoin means separate or disunite.
• Create means bring (something) into existence.
• Hence, the correct answer is option 1.

Q12. Answer: (b) Bold

The correct answer is "Bold".

Key Points

• The word 'Timid' means lacking in courage or self-confidence.
• The antonyms of the word 'Timid' are "bold, daring, gutsy".
• From the antonym of the given word, we can say that the word 'Bold' is opposite in meaning.
• The word 'Bold' means (of a person, action, or idea) showing a willingness to take risks; confident and courageous.

Hence, the correct answer is option 2. Let's see the meaning of other given options-

WORDS	MEANING
Dubious	hesitating or doubting
Sincere	free from pretence or deceit; proceeding from genuine feelings
Punctual	happening or doing something at the agreed or proper time

Additional Information

• The synonyms of the word 'Timid' are "scary, shy, fearful".
• Example of 'Timid' in a sentence:
• Afterwards, the Wildcat players said they felt nervous and came out timid, tight.

Q13. Answer: (b) Untiring

The correct answer is "Untiring".

Key Points

• The word 'Diligent' means involved in often constant activity.
• The synonyms of the word 'Diligent' are "untiring, hard-working, active".
• From the synonym of the given word, we can say that the word 'Untiring' is the same in meaning.

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• The word 'Untiring' means (of a person or their actions) continuing at the same rate without loss of vigour.

Hence, the correct answer is option 2. Let's see the meaning of other given options-

WORDS	MEANING
Lethargic	affected by lethargy; sluggish and apathetic
Inattentive	not paying attention to something
Weary	feeling or showing extreme tiredness

Additional Information

• The antonyms of the word 'Diligent' are "inactive, unbusy, unoccupied".

• Example of 'Diligent' in a sentence:

• Such incentives attract the lazy and mediocre and repel the talented or diligent.

Q14. Answer: (d) DCBA

The correct answer is "DCBA".

Key Points

• The sentence 'D' is independent of any other sentences as it is giving general information about Johny's "car accident". Hence, 'D' is the first part.

• The phrase "damaged car" in the sentence 'C' refers back to the 'car accident' mentioned in the sentence 'D'. Hence, 'C' follows 'D'.

• The phrase 'travel to office by the metro train' in the sentence 'B' refers back to the phrase 'car to the garage for repairs' mentioned in the sentence 'C'. Hence, 'B' follows 'C'.

• The 'metro train' in the sentence 'B' is linked with the 'metro station' mentioned in the sentence 'A'. Hence, 'A' follows 'B'.

After rearranging the sentences: Johnny had a car accident. He sent his damaged car to the garage for repairs. He decided to travel to the office by the metro train. At the metro station, he noticed a homeless man.

Important Points

• Important Rules to Solve the Para Jumbles:

• Read the sentences attentively and try to comprehend the idea or theme of the sentence and eliminate the irrelevant options.

• Try to identify the opening (independent sentence) and closing sentences (concluding sentence).

• Try to identify the mandatory pairs. Two sentences can be connected through various connectors and other determinants.

Q15. Answer: (a) ACDB

The correct answer is "ACDB".

Key Points

• The sentence 'A' is independent of any other sentences as it is giving general information about "a boy". Hence, 'A' is the first part.

• The verb "tending" in the sentence 'C' refers back to the verb 'tended' mentioned in the sentence 'A'. Hence, 'C' follows 'A'.

• The noun 'boredom' in the sentence 'D' refers back to 'boring' mentioned in the sentence 'C'. Hence, 'D' follows 'C'.

• The verb 'talked' in the sentence 'B' refers back to 'talking' mentioned in the sentence 'D'. Hence, 'B' follows 'D'.

After rearranging the sentences: A boy tended his master’s dogs near a pond. Soon he found the tending and his life there very boring. However, he realized that the way he talked to them never made them happy. All he could do to kill the boredom was by talking to the dogs.

Important Points

• Important Rules to Solve the Para Jumbles:

• Read the sentences attentively and try to comprehend the idea or theme of the sentence and eliminate the irrelevant options.

• Try to identify the opening (independent sentence) and closing sentences (concluding sentence).

• Try to identify the mandatory pairs. Two sentences can be connected through various connectors and other determinants.

Q16. Answer: (d) Enthusiastic

The correct answer is "Enthusiastic".

Key Points

• The word 'Disillusioned' means as in frustrated, disappointed.

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• The antonyms of the word 'Disillusioned' are "enthusiastic, happy, joyful".
• From the antonym of the given word, we can say that the word 'Enthusiastic' is opposite in meaning.
• The word 'Enthusiastic' means having or showing intense and eager enjoyment, interest, or approval.
Hence, the correct answer is option 4. Let's see the meaning of other given options-

WORDS	MEANING
Embittered	angry or resentful at having been treated unfairly
Disappointed	sad or displeased because someone or something has failed to fulfil one's hopes or expectations
Soured	make or become unpleasant, acrimonious, or difficult

Additional Information
• The synonyms of the word 'Disillusioned' are "disappointed, frustrated, unfulfilled".
• Example of 'Disillusioned' in a sentence:
• Machado said he grew disillusioned by the college recruiting process early on.

Q17. Answer: (b) Providance

The correct answer is "Providance".
Key Points
• The correct spelling should be Providence.
• Let us explore the given options:
• Consequence means a result or effect, typically one that is unwelcome or unpleasant.
• Providance is wrongly spelt as it doesn't have any existence or meaning.
• A musician is a person who plays a musical instrument, especially as a profession, or is musically talented.
• Fixation means an obsessive interest in or feeling about someone or something.
• Hence, the correct answer is option 2.
Additional Information
• If we replace 'a' by 'e' in the second option, it becomes 'Providence' which means timely preparation for future eventualities.

Q18. Answer: (c) severe

The correct answer is "severe".
Key Points
• In the given sentence, an adjective should be used to describe the noun 'punishment'.
• Let us explore the given options:
• The adjective 'much' means a large quantity, extent, or degree.
• The adverb 'too' means to a higher degree than is desirable, permissible, or possible; excessively.
• The adjective 'severe' means (of punishment of a person) strict or harsh.
• The adjective 'many' means a large number of.
• Hence, the correct answer is option 3.
Complete Sentence: There should be severe punishment for rule-breakers.

Q19. Answer: (d) handing to us.

The correct answer is "handing to us".
Key Points
• In the given sentence, the use of the form of the verb 'handing' is incorrect.
• The given sentence is in the passive voice as in the passive voice, there are only the verb and the object, no subject to be mentioned.
• We form the passive with be + past participle (third form of the verb).
• Therefore, the present participle form 'handing' should be replaced by the past participle form 'handed'.
• Hence, the correct answer is option 4.
Correct Sentence: Our twenty-first-century society expects all relevant information to simply be handed to us.

Q20. Answer: (d) Vishnu said that he was going to the theatre that evening.

The correct answer is Vishnu said that he was going to the theatre that evening.

Key Points

• The given sentence is a direct speech.

• The basic rules for changing or converting direct speech into indirect speech:

• The commas and inverted commas are removed.

• The second person 'I' will be changed into 'He'. The pronoun 'this' becomes 'that'.

• The present continuous tense format 'Subject + am + V1 + ing + Object' will be changed into the past continuous tense format 'Subject + was + V1 + ing + Object'.

• From the following rules, we get the correct sentence as- option 4*.*

Additional Information

• The following table will enable us to know how tense changes into Indirect speech:

Direct Speech	Indirect Speech
Present simple (Subject +V1st + Object)	Past simple (Subject +V2 + Object)
Present continuous (Subject +is/am/are+V1 +ing+ Object)	Past Continuous (Subject +was/were+V1 +ing+ Object)
Present perfect (Subject + has/have+V3+Object)	Past perfect (Subject+had+V3+Object)
Past simple (Subject+V2+Object)	Past perfect (Subject+had+V3+Object)
Past Continuous (Subject +was/were+V1 +ing+ Object)	Past perfect continuous (Subject +had been+V1 +ing+ Object)
Future simple (Subject+ will/shall+V1+object)	Present Conditional (Subject+ would+V1+object)
Future Continuous (Subject +will/shall+be+V1 +ing+ Object)	Conditional Continuous (Subject +would+be+V1 +ing+ Object)

Q21. Answer: (d) Respectfull

The wrongly spelt word is 'Respectfull'.

Key Points

• Let us explore the given options:

• Subtle means (especially of a change or distinction), so delicate or precise as to be difficult to analyse or describe.

• Esteem means respect and admiration.

• Mimic means imitate (someone or their actions or words), especially in order to entertain or ridicule.

• Respectfull is wrongly spelt as it doesn't have any existence or meaning. Respectful is the correct spelling.

• Hence, the correct answer is option 4.

Important Points

• If we remove one 'l' from the fourth option, it becomes 'Respectful' which means feeling or showing deference and respect.

Q22. Answer: (c) Embezzle

The correct answer is "Embezzle".

Key Points

• Let us explore the given options:

• Overcharge means a charge (someone) too high a price for goods or service.

• Raid means a surprise visit by police to arrest suspects or seize illicit goods.

• Embezzle means steal or misappropriate money placed in one's trust or belonging to the organization for which one works.

• Manipulate means control or influence (a person or situation) cleverly or unscrupulously.

• Hence, the correct answer is option 3.

Q23. Answer: (d) to the training

The correct answer is "to the training".

Key Points

• In the given sentence, the use of the preposition 'to' is incorrect.

• The preposition 'to' is used for showing the purpose of an action.

• The preposition 'for' should be used instead of 'to'.

• The preposition 'for' is used for saying who or what is intended to receive something or get the benefit of it.

• Hence, the correct answer is option 4.

Correct Sentence: Behaviour modification techniques are often used for the training of police dogs.

Additional Information

• Use 'to' when the reason or purpose is a verb. Use 'for' when the reason or purpose is a noun.

Q24. Answer: (d) My bike was repaired by the mechanic.

The correct answer is "My bike was repaired by the mechanic".

Key Points

• In Active Voice, a sentence emphasizes the subject, performing an action.

• In Passive Voice, a sentence emphasizes the action or the object of the sentence.

• The given sentence is in the active voice and 'The mechanic' is the subject and 'my bike' is the object.

• When we convert this sentence into passive voice, the subject 'The mechanic' of the active voice becomes the object and the object 'my bike' becomes the subject.

• The passive format "was + V3" should be used.

• This is the active and passive voice rule for the past simple tense.

• Hence, the correct answer is option 4.

Additional Information

• Verbs of passive format have a different set of tenses (*V3 - Past participle or Third form of the Verb) as given below in the table:

TENSE	ACTIVE	PASSIVE	PASSIVE CONVERSION
Present Simple	He plays football	am/is/are + V3	Football is played by him
Present Continuous	He is playing football	am/is/are + being +V3	Football is being played by him
Present Perfect	He has played football	Has/have + been+ V3	Football has been played by him
Present Perfect Continuous	He has been playing football	Not used and unusual.	Not used and unusual
Past Simple	He played football	Was/were + V3	Football was played by him
Past Continuous	He was playing football	Was/were + being + V3	Football was being played by him
Past Perfect	He had played football	Had + been + V3	Football had been played by him
Past Perfect Continuous	He had been playing football	Not used and unusual	Not used and unusual
Future Simple	He will play football	Will + be + V3	Football will be played by him
Future Continuous	He will be playing football	Not used and unusual	Not used and unusual
Future Perfect	He will have played football	Will have been + V3	Football will have been played by him
Future Perfect Continuous	He will have been playing football	Not used and unusual	Not used and unusual

Q25. Answer: (d) As long as

The correct answer is "as long as".

Key Points

• In the given underlined segment, the use of "So much as" is incorrect as "so...as" can only be used with negative like 'not'.

• We use not + so + adjective/adverb + as to make comparisons, meaning not to the same degree.

• But we use as + adjective/adverb + as to make comparisons when the things we are comparing are equal in some way.

• We use "as long as" to refer to the intended duration of a plan or idea, most commonly referring to the future. We always use the present simple to refer to the future after "as long as".

• Hence, the correct answer is option 4.

Correct Sentence: As long as you behave like this, the decision of the management against you cannot be revoked.

Additional Information

• We can use "as...as" for both negative and positive, "so...as" can only be used with negative.

Q26. Answer: (a) aacbacabbc

The pattern followed is,

The set of letters 'abaacbc' is repeated.

Hence, "aacbacabbc" is the correct answer.

Q27. Answer: (b) [figure]

The given figure is embedded in,

Hence, option 2 is the correct answer.

Q28. Answer: (b) 35,000

Given,

Let the salary of Arvind per month = x

He gives half of his salary to his wife, remaining salary = x - x/2

He spends Rs. 2,500 on his personal expenses, remaining salary = x - x/2 - 2500

The saving he manages per month is 3/7 of his monthly salary,3 /7 th of his salary.

So,

x - x/2 - 2500 = (3/7)x

x - 5000 = (6/7)x

(1/7)x = 5000

x = 35000

Hence, "35,000" is the correct answer.

Q29. Answer: (a) 6

The number on the face opposite to '3' is odd.

'1' is opposite to '3'

'4' is opposite to '5'

And,

'2' is opposite to '6'

Hence, "6" is the correct answer.

Q30. Answer: (b) Only conclusions II and III follows.

Conclusion I: This does not follow, because it is mentioned in the third statement that everyone plays either hockey or badminton.

Conclusion II: This follows, because it is mentioned in the statements that few girls don't play badminton, so they play hockey.

Conclusion III: This follows, because it is mentioned that everyone plays either hockey or badminton.

Hence, only conclusions II and III follows.

Q31. Answer: (c) 320 : 480

The pattern followed is,

Option 1 → 28 : 70 → 28 × 2.5 = 70

Option 2 → 120 : 300 → 120 × 2.5 = 300

Option 3 → 320 : 480 → 320 × 2.5 = 800, not 480

Option 4 → 16 : 40 → 16 × 2.5 = 40

All follow the same pattern, except '320 : 480'

Hence, "320 : 480" is different from the rest.

Q32. Answer: (c) [figure]

The correct mirror image of the given figure when the mirror is placed to the right side of the figure is,

Hence, option 3 is the correct answer.

Q33. Answer: (a) IV, I, II, III

Hexagon comes first in the order.

Hexagon is followed by Heptagon.

Heptagon is followed by Octagon.

Octagon is followed by Nonagon.

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The correct order is,
Hexagon (IV) → Heptagon (I) → Octagon (II) → Nonagon (III)
Hence, option 1 is the correct answer.

Q34. Answer: (d) [figure]

The paper when unfolded will look like,
Hence, option 4 is the correct answer.

Q35. Answer: (d) 2

The pattern followed here is:
The third number is the subtraction of the first and second number,
|7 - 2| = 5
The fourth number is the subtraction of second and third numbers,
|7 - 5| = 2
The fifth number is the subtraction of a third and fourth number
|5 - 2| = 3
The sixth number is the subtraction of the fourth and fifth number,
|3 - 2| = 1
similarly,
The seventh number is the subtraction of the fifth and sixth numbers,
|3 - 1| = 2
Hence, 2 is the correct answer.

Q36. Answer: (c) 18 × 5 - 36 ÷ 2 + 6

The original equation is,
36 × 5 - 18 ÷ 6 + 2 = 78
Verifying the options using BODMAS rule,
Option 1 → 5 × 6 - 36 ÷ 18 + 2
Using BODMAS rule,
5 × 6 – 2 + 2 = 78
30 – 2 + 2 is not equal to 78
Option 2 → 36 × 2 - 18 ÷ 6 + 5
Using BODMAS rule,
36 × 2 – 3 + 5 = 78
72 – 3 + 5 is not equal to 78
Option 3 → 18 × 5 - 36 ÷ 2 + 6
Using BODMAS rule,
18 × 5 – 18 + 6 = 78
90 – 18 + 6 = 78
96 – 18 = 78
78 = 78
Option 4 → 5 × 2 - 18 ÷ 6 + 36
Using BODMAS rule,
5 × 2 – 3 + 36 = 78
10 – 3 + 36 is not equal to 78
Hence, option is the correct answer.

Q37. Answer: (c) Maternal uncle

Drawing the diagram,
B is the maternal uncle of D.
Hence, “maternal uncle” is the correct answer.

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Q38. Answer: (b) Rs 390

Let, Man spend fare for auto rickshaw = a ------(i)

Then, Man spend fare for Bus = 10a + 60 Rs ------(ii)

Total amount spent by him = 13a ------(iii)

According to question,

Eq (i) + Eq (ii) = Eq(iii)

a + 10a + 60 = 13a

2a = 60

a = 30

Man spend fare for auto rickshaw = 30 Rs

Man spend fare for Bus = 300 + 60 = 360 Rs

Total amount of money was spent on Bus as well as Auto rickshaw by the man = 360 + 30 = 390 Rs

Hence, 390 is the correct answer.

Q39. Answer: (c) 10 : 9

The pattern followed here is:

42 - 18 = 24

if we interchange unit digit and ten's digit then we obtain 42, which is first term of analogy.

Similarly,

10 - 9 = 01

if we interchange unit digit and ten's digit then we obtain 10, which is first term of analogy.

Q40. Answer: (a) Gobi : Asia

Sahara desert is in Africa.

Similarly,

Gobi desert is in Asia.

Desert	Continent
Thar	Asia
Gibson	Australia
Sandy	Australia

Hence, “Gobi: Asia” is the correct answer.

Q41. Answer: (a) 18

The number of squares in the given figure are,

Hence, “18” is the correct answer.

Q42. Answer: (d) 1044

The pattern followed is,

Letter	B	L	I	N	K
Place value	2	12	9	14	11

BLINK = 2 + 12 + 9 + 14 + 11 = 48

BLINK is coded as 2226, 22 + 26 = 48

For ALL

Letter	A	L	L
Place value	1	12	12

ALL = 1 + 12 + 12 = 25

ALL is coded as 1312, 13 + 12 = 25

Similarly,

For EYES,

Letter	E	Y	E	S
Place value	5	25	5	19

EYES = 5 + 25 + 5 + 19 =54

EYES is coded as 1044 = 10 + 44 = 54

Hence, “1044” is the correct answer.

Q43. Answer: (d) [figure]

The pattern followed is,

The painted face and the faces which are underlined are moving clockwise by two and three places respectively.

The figure which will come next in the pattern is,

Hence, option 4 is the correct answer.

Q44. Answer: (d) [figure]

Sydney is in Australia.

And,

Amsterdam is the capital of Netherlands.

The correct Venn diagram is,

Hence, option 4 is the correct answer.

Q45. Answer: (d) (4, 12, 132)

The pattern followed here is:

(3, 6, 30)

$3^2 - 3 = 6$ and $6^2 - 6 = 30$

Similarly in option 4 following same pattern,

42 - 4 = 12 and 122 - 12 = 132

Hence, (4 12 132) is the correct answer.

Q46. Answer: (c) 49

The pattern followed is,

Hence, “49” is the correct answer.

Q47. Answer: (a) WCXIP

The pattern followed is,

Similarly,

Hence, “WCXIP” is the correct answer.

Q48. Answer: (a) WRUIEU

The pattern followed is,

=> Reveres letter - 1 positional value of alphabets.

T	R	A	I	N
Reveres letter - 1 positional value of alphabets				
F	H	Y	Q	L

Similarly,

C	H	E	Q	U	E
Reveres letter - 1 positional value of alphabets					
W	R	U	I	E	U

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Hence, “WRUIEU” is the correct answer.

Q49. Answer: (b) MQS

The pattern followed is,
Sum of positional value of 1st and 2nd alphabet = Positional value of 3rd alphabet.
J(10) + P(16) = Z(26)
M(13) + Q(17) = S(19)
D(4) + L(12) = P(16)
F(6) + H(8) = N(14)
All follow the same pattern, except ‘MQS’.
Hence, “MQS” is the odd letter cluster.

Q50. Answer: (a) Astronomy

Pythagoras discovered the Pythagorean theorem in geometry.
Similarly,
Kepler is a German astronomer.
Hence, “astronomy” is the correct answer.

Q51. Answer: (d) Rs.13,120

Given:
P = Rs. 8,000
SI = 8%
T = 8 years
Formula:
SI = (P × r × t)/100
where P → Principal
r → rate of interest
t → time period
Amount = S.I. + P
Calculation:
SI = (8000 × 8 × 8)/100
=> SI = 5120
Therefore A = P + SI = 8,000 + 5120 = 13,120
Shortcut TrickLet P = 100%
then interest for 8 years = 8 + 8 =64 %
So, Amount = 100 + 64% = 164%
=> 100% = 8000
=> 164% = (8000/100) × 164 = Rs. 13120

Q52. Answer: (a) 4

Given:
When an integer n is divided by 5, the remainder is 3.
Formula:
Dividend = Divisor × Quotient + Remainder
Calculation:
Let quotient be q, then
n = 5q + 3
Multiply by 8 in equation (1)
=> 8n = 40q + 24
=> 8n = 40q + 20 + 4
=> 8n = 5 × (8q + 4) + 4
Therefore Now we can say remainder is 4.
Let n be 8. [Satisfied the given condition]

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Now, 8n = 8 × 8 = 64

When we divide 64 by 5, we will have 4 as the remainder.

Q53. Answer: (d) B

Given:

Salary of A = 12,000

Tax of A = 450

Salary of B = 18,000

Tax of B = 950

Salary of C = 15000

Tax of C = 550

Salary of D = 16,000

Tax of D = 600

Formula:

x as a percentage of y = (x/y) × 100

Calculation:

Tax percentage of A = (450/12000) × 100 = 3.75%

Tax percentage of B = (950/18000) × 100 = 5.2%

Tax percentage of C = (550/15000) × 100 = 3.66%

Tax percentage of D = (600/16000) × 100 = 3.75%

Therefore We can say the tax as a percentage of salary is highest in case of B.

Q54. Answer: (a) 407

Given:

The sum of two numbers = 11

The sum of their squares = 65

Formula:

(x + y)2 = x2 + y2 + 2xy

x3 + y3 = (x + y) [(x + y)2 - 3xy]

Calculation:

Let two numbers be x and y.

x + y = 11

x2 + y2 = 65

=> $(x + y)^2 = x^2 + y^2 + 2xy$

=> $11^2 = 65 + 2xy$

=> 2xy = 121 - 65

=> xy = 56/2

=> xy = 28

$x^3 + y^3 = (x + y) [(x + y)^2 - 3xy]$

=> $x^3 + y^3 = 11 (11^2 - 3 \times 28)$

=> $x^3 + y^3 = 11 \times (121 - 84)$

=> $x^3 + y^3 = 11 \times 37$

Therefore $x^3 + y^3 = 407$

Shortcut TrickLet two numbers are x and y.

x + y = 11

x2 + y2 = 65

Put x = 7 and y = 4, then the condition is satisfied.

x3 + y3

=> 73 + 43

=> 343 + 64

=> 407

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Q55. Answer: (b) Rs. 11,635

Given:

Loss% = 20%

SP of the article = Rs. 7160

Formula:

CP = 100 × [100/(100 - Loss%)]

CP = 100 × [(100 + Profit%)/100]

Calculation:

CP of the article = 7160 × (100/80) = Rs. 8950

Therefore New SP of the article = 8950 × (130/100) = 11,635

Q56. Answer: (c) 1

Given:

sin2 45° + cos2 45°

Formula:

sin2 A + cos2 A = 1

Calculation:

Therefore sin2 45° + cos2 45° = 1

Alternate Method

sin45° = cos 45° = 1/√2

Therefore sin2 45° + cos2 45° = $(1/\sqrt{2})^2 + (1/\sqrt{2})^2 = 1/2 + 1/2 = 1$

Q57. Answer: (c) 12/35

Given:

sin x = 12/37

Formula:

$(\text{Hypotenuse})^2 = (\text{Base})^2 + (\text{Perpendicular})^2$

sin x = P/H

tan x = P/B

where, Hypotenuse = H, Base = B and Perpendicular = P

Calculation:

sin x = 12/37

=> P/H = 12/37

Hence, P = 12 and H = 37

Now,

$37^2 = 12^2 + B^2$

$\Rightarrow 1369 = 144 + B^2$

$\Rightarrow B^2 = 1369 - 144$

$\Rightarrow B = \sqrt{1225}$

$\Rightarrow B = 35$

Therefore tan x = 12/35

Q58. Answer: (b) 72

Given:

2x + y = 6

xy = 4

Formula:

(x + y)2 = x2 + y2 + 2xy

x3 + y3 = (x + y) (x^2 + y2 - xy)

Calculation:

2x + y = 6

xy = 4

=> (2x + y)2 = 4x2 + y2 + 4xy

=> 62 = $4x^2 + y^2 + 4 \times 4$

=> $4x^2 + y^2 = 36 - 16$

=> $4x^2 + y^2 = 20$

Now,

(2x)3 + y3 = (2x + y) ($4x^2$ + y2 - 2xy)

=> 8x3 + y3 = 6 (20 - 2 × 4)

=> 8x3 + y3 = 6 × (20 - 8)

=> 8x3 + y3 = 6 × 12

Therefore 8x3 + y3 = 72

Shortcut Trick

2x + y = 6

xy = 4

Put x = 1 and y = 4, then condition is satisfied.

8x3 + y3

=> 8 × 13 + 43

=> 8 + 64

=> 72

Q59. Answer: (c) 17 cm

Shortcut Trick

If the area of a new circle is equal to the sum of the areas of two circles with radii r1 and r2, the radius R of the new circle is simply given by the Pythagorean relation: R = $\sqrt{(r1^2 + r2^2)}$.

Given, r1 = 15 cm and r2 = 8 cm.

R = $\sqrt{(15^2 + 8^2)}$

R = $\sqrt{(225 + 64)} = \sqrt{289}$

R = 17 cm.

Therefore The correct answer is 17 cm.

Alternate Method

Given:

Radius of the first circle (r1) = 15 cm

Radius of the second circle (r2) = 8 cm

Formula Used:

Area of a circle = πr^2

Calculations:

Let the radius of the larger circle be R.

=> Area of new circle = Area of first circle + Area of second circle

=> $\pi R^2 = \pi(r1)^2 + \pi(r2)^2$

=> $\pi R^2 = \pi \times (15^2 + 8^2)$

=> $R^2 = 225 + 64$

=> $R^2 = 289$

=> R = $\sqrt{289}$

=> R = 17 cm

Therefore The correct answer is 17 cm.

Additional Information

Pythagorean Triplets

Three positive integers a, b, and c that satisfy $a^2 + b^2 = c^2$ form a Pythagorean triplet. Common examples are (3, 4, 5), (5, 12, 13), (8, 15, 17), and (7, 24, 25). Spotting these saves calculation time.

Circumference Sum Relation

If the circumference of a circle equals the sum of the circumferences of two circles with radii r1 and r2, then the radius R of the new circle follows a direct linear addition: R = r1 + r2.

Area of Semicircle and Quadrant

Area of a Semicircle = ½ πr^2 and its Perimeter = πr + 2r. Area of a Quadrant = ¼ πr^2 and its Perimeter = $\pi r/2$ + 2r.

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Q60. Answer: (c) 24 cm

Given:

Two concentric circle are of radii 13 cm and 5 cm respectively.

Formula:

Hypotensue² = Base² + Perpendicular²

Calculation:

See the figure PQ touches the smaller circle and OM is perpendicular to QP which divides the PQ into two equal parts.

OM = 5 (radius of smaller circle)

OP = 13 (radius of bigger circle)

In right angled Δ OPM

$(OP)^2 = (OM)^2 + (PM)^2$

$\Rightarrow 13^2 = 5^2 + (PM)^2$

$\Rightarrow (PM)^2 = 169 - 25$

$\Rightarrow PM = \sqrt{144}$

$\Rightarrow PM = 12$

Now,

PQ = 2PM

$\Rightarrow PQ = 2 \times 12$

$\Rightarrow PQ = 24$ cm

Therefore The length of the chord which touches the smaller circle is 24 cm.

Q61. Answer: (c) 14.5 cm

Given:

The lengths of the two sides forming the right angle of a right-angled triangle are 21 cm and 20 cm

Formula:

Hypotenuse² = Base² + Perpendicular²

Circum-radius of the right-angled triangle = Hypotenuse/2

Calculation:

Base = 21 cm and Perpendicular = 20 cm

$\Rightarrow (\text{Hypotenuse})^2 = 21^2 + 20^2$

$\Rightarrow 441 + 400$

$\Rightarrow 841$

$\Rightarrow (\text{Hypotenuse}) = \sqrt{841} = 29$

Therefore Circum-radius of the right-angled triangle = 29/2 = 14.5 cm

Q62. Answer: (d) C

Givne:

Salary of A = 12,000

Expenditure of A = 6,000

Salary of B = 18,000

Expenditure of B = 7,500

Salary of C = 15000

Expenditure of C = 5,550

Salary of D = 16,000

Expenditure of D = 6,000

Formula:

x as a percentage of y = (x/y) × 100

Calculation:

Expenditure percentage of A = (6000/12000) × 100 = 50%

Expenditure percentage of B = (7500/18000) × 100 = 41.67%

Expenditure percentage of C = (5550/15000) × 100 = 37%

Expenditure percentage of D = (6000/16000) × 100 = 37.5%

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Therefore We can say the expenditure as a percentage of salary is the least for C.

Q63. Answer: (c) 16 cm

Calculation:

l and m are two tangent which are parallel and P and Q is the diameter.

PQ = 2 × 8 = 16 cm

Therefore The distance between two parallel is 16 cm.

Q64. Answer: (b) Rs. 2,990

Given:

SP of the fan = Rs. 3250

Discount = 8%

Formula:

SP = MP × (100 - Discount%)/100

Calculation:

SP of the fan = 3250 × (92/100)

Therefore SP of the fan = Rs. 2,990.

Q65. Answer: (d) 6√105

Shortcut Trick

For a triangle with sides 11 cm, 12 cm, and 13 cm:

Calculate Semi-perimeter (s) = (11 + 12 + 13) ÷ 2 = 18 cm.

Apply Heron's Formula: Area = √[s(s − a)(s − b)(s − c)]

Area = √[18 × (18 − 11) × (18 − 12) × (18 − 13)] = √[18 × 7 × 6 × 5]

Area = √[3780] = 6√105 cm².

Therefore The correct answer is 6√105 cm².

Alternate Method

Given:

Sides of the triangle: a = 11 cm, b = 12 cm, c = 13 cm.

Formula Used:

Semi-perimeter (s) = (a + b + c) ÷ 2

Area of triangle = √[s(s − a)(s − b)(s − c)]

Calculations:

=> s = (11 + 12 + 13) ÷ 2

=> s = 36 ÷ 2 = 18 cm

=> Area = √[18 × (18 − 11) × (18 − 12) × (18 − 13)]

=> Area = √[18 × 7 × 6 × 5]

=> Area = √[3 × 6 × 7 × 6 × 5]

=> Area = 6 × √[3 × 7 × 5]

=> Area = 6√105 cm²

Therefore The correct answer is 6√105 cm².

Additional Information

Heron's Formula

Used to find the area of a scalene triangle when all three sides are known: Area = √[s(s−a)(s−b)(s−c)].

Equilateral Triangle Area

If all sides are equal to 'a', the area is given by (√3 ÷ 4) × a².

Right-Angled Triangle

Area = (1 ÷ 2) × Base × Height. Also, Pythagoras theorem applies: a² + b² = c².

Q66. Answer: (c) 28

Given:

Sum of three numbers = 79

Ratio of the first number of the second number = 4 : 7

Ratio of the second number of the third number = 4 : 5

Calculation:

Ratio of the first number of the second number = 4x : 7x ---- (1)

Ratio of the second number of the third number = 4x : 5x ---- (2)

Multiply by 4 in equation (1) and multiply by 7 in equation (2), we get

Ratio of the first, second and third number = 16x : 28x : 35x

According to the question

16x + 28x + 35x = 79

=> 79x = 79

=> x = 79/79

=> x = 1

Therefore Second number = 28.

Q67. Answer: (b) C

Given:

Salary of A = 12,000

Savings of A = 5,550

Salary of B = 18,000

Savings of B = 9,550

Salary of C = 15000

Savings of C = 89,00

Salary of D = 16,000

Savings of D = 9,400

Formula:

x as a percentage of y = (x/y) × 100

Calculation:

Savings percentage of A = (5550/12000) × 100 = 46.25%

Savings percentage of B = (9550/18000) × 100 = 53.05%

Savings percentage of C = (8900/15000) × 100 = 59.34%

Savings percentage of D = (9400/16000) × 100 = 58.75%

Therefore We can say the savings as a percentage of salary is highest in case of C.

Q68. Answer: (a) 15

Given:

Shyam can complete a task in 12 days 10 hors a day.

Formula:

M1 × T1 × D1 = M2 × T2 × D2

Calculation:

M1 = 1 man, T1 = 10 hrs, D1 = 12 days, M2 = 1 man, D2 = 8 days

According to the formula

1 × 10 × 12 = 1 × T2 × 8

=> T2 = 120/8

Therefore T2 = 15 hrs.

Q69. Answer: (d) C

Given:

Salary of A = 12,000

Tax of A = 450

Salary of B = 18,000

Tax of B = 950

Salary of C = 15000

Tax of C = 550

Salary of D = 16,000

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Tax of D = 600

Formula:

x as a percentage of y = (x/y) × 100

Calculation:

Tax percentage of A = (450/12000) × 100 = 3.75%

Tax percentage of B = (950/18000) × 100 = 5.28%

Tax percentage of C = (550/15000) × 100 = 3.66%

Tax percentage of D = (600/16000) × 100 = 3.75%

Therefore We can say the tax as a percentage of salary is least in case of C.

Q70. Answer: (c) 37 years

Shortcut Trick

Present average of Husband, Wife, and Child = 26 + 3 = 29 years

Present total age of Husband, Wife, and Child = 29 × 3 = 87 years

Present average of Wife and Child = 20 + 5 = 25 years

Present total age of Wife and Child = 25 × 2 = 50 years

Present age of Husband = 87 − 50 = 37 years

Therefore The correct answer is 37 years.

Alternate Method

Given:

Average age of Husband (H), Wife (W), and Child (C) 3 years ago = 26 years

Average age of Wife (W) and Child (C) 5 years ago = 20 years

Formula: Total Age = Average Age × Number of Persons

=> Total age of (H + W + C) 3 years ago = 26 × 3 = 78 years

=> Present total age of (H + W + C) = 78 + (3 persons × 3 years) = 78 + 9 = 87 years

=> Total age of (W + C) 5 years ago = 20 × 2 = 40 years

=> Present total age of (W + C) = 40 + (2 persons × 5 years) = 40 + 10 = 50 years

=> Present age of Husband = (Present total of H, W, C) − (Present total of W, C)

=> Present age of Husband = 87 − 50 = 37 years

Therefore The correct answer is 37 years.

Additional Information

Effect of Time on Average Age

If the present average age of a group of n people is A, then after k years, their average age will be A + k, and k years ago, it was A − k.

Sum of Ages

The total sum of ages of n people increases by n × k after k years, as each individual's age increases by k.

Finding Age of a New Member

Age of new member = (New Average × New Strength) − (Old Average × Old Strength).

Q71. Answer: (c) 108

Given:

Length of train = 350 m

Length of bridge = 250 m

Train crosses the bridge in 20 sec

Formula:

Speed = Distance/Time

1 km/hr. = 5/18 m/sec

Calculation:

Let speed of train be x km/hr, then

x × (5/18) = (350 + 250)/20

=> x = 30 × (18/5)

=> x = 108 km/hr.

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Therefore Speed of train is 108 km/hr.

Q72. Answer: (b) 6

Given:

$x^2 + 1/x^2 = 38$

Formula:

$(x - 1/x)^2 = x^2 + 1/x^2 - 2$

$| x | = x$

$| -x | = x$

Calculation:

According to the formula

(x - 1/x)2 = x2 + 1/x2 - 2

=> $(x - 1/x)^2 = 38 - 2$

=> $(x - 1/x) = \sqrt{36}$

=> (x - 1/x) = 6

Now,

$| x - 1/x | = | 6 | = 6$

Shortcut TrickIf $x^2 + 1/(x^2) = a$, then $x - 1/x = \sqrt{a - 2}$~

So, if $x^2+1/(x^2)=38$, then $x - 1/x = \sqrt{38 - 2}$~ $= \sqrt{36} = 6$

=> $| x - 1/x | = | 6 | = 6$

Q73. Answer: (a) (-1)/41

Given:

$\tan \theta = 20/21$

Formula:

If x/y = a/b, then

Dividendo and Componendo

$(x + y)/(x - y) = (a + b)/(a - b)$

Calculation:

$\tan \theta = 20/21$

=> $\sin \theta/\cos\theta = 20/21$

Dividendo and Componendo

=> $(\sin \theta + \cos \theta)/(\sin \theta - \cos \theta) = (20 + 21)/(20 - 21)$

=> $(\sin \theta + \cos \theta)/(\sin \theta - \cos \theta) = 41/(-1)$

Therefore $(\sin \theta - \cos \theta)/(\sin \theta + \cos \theta) = -1/41$

Q74. Answer: (c) 0

Follow the BODMAS rule to solve this question, as per the order given below,

[0.9 - {2.3 - 3.2 - (7.1 - 5.4 - 3.5)}]

=> [0.9 - {2.3 - 3.2 - (-1.8)}]

=> [0.9 - {2.3 - 3.2 + 1.8}]

=> [0.9 - {4.1 - 3.2}]

=> [0.9 - 0.9]

=> 0.

Q75. Answer: (b) 11 : 15

Given:

22% of x = 30% of y

Formula:

x% of y = y × (x/100)

Calculation:

22% of x = 30% of y

=> x × (22/100) = y × (30/100)

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=> x/y = 30/22

=> y/x = 22/30

Therefore y : x = 11 : 15

Q76. Answer: (b) Mumtaz Mahal

The Correct Answer is Mumtaz Mahal.

Key Points

• It was built by Mughal Emperor Shah Jahan in memory of his wife Mumtaz Mahal with construction starting in 1632 AD and completed in 1648 AD,

• It Comprises the mosque, the guest house, and the main gateway on the south, the outer courtyard, and its cloisters were added subsequently and completed in 1653 AD.

• Mumtaz Mahal was born Arjumand Banu Begum in Agra to a family of Persian nobility.

• She was the daughter of Abul-Hasan Asaf Khan, a wealthy Persian noble who held high office in the Mughal Empire, and the niece of Empress Nur Jahan, the chief wife of Emperor Jahangir and the power behind the emperor.

• She was married at the age of 19, on 30 April 1612 to Prince Khurram later known by the name Shah Jahan, who conferred upon her the title "Mumtaz Mahal", although betrothed to Shah Jahan since 1607.

• Mumtaz Mahal died in 1631 in Burhanpur, during the birth of her fourteenth child, named Gauhar Ara Begum.

• Shah Jahan built the Taj Mahal as a tomb for her, which is considered to be a monument of undying love.

Additional Information

Jahanara:-

• Jahanara Begum was a Mughal princess and the Padshah Begum of the Mughal Empire from 1631 to 1681.

• She was the eldest child of Shah Jahan and his wife, Mumtaz Mahal. Often referred to simply as Begum Sahib, she was the elder sister of the crown prince, Dara Shikoh, and Emperor Aurangzeb.

Roshanara:-

• Roshanara Begum was a Mughal princess and the second daughter of Shah Jahan and his wife, Mumtaz Mahal.

• Roshanara was a brilliant woman and a talented poet.

• After Aurangzeb's accession to the throne in 1658, Roshanara was given the title of Padshah Begum by her brother and became the First Lady of the Mughal Empire, when she became a powerful political figure.

Noor Jahan:-

• Noor Jahan was known by her honorific title Malika-e-Tarannum (the queen of melody), was a Pakistani playback singer and actress who worked first in British India and then in Pakistan.

• She was renowned as one of the greatest and most influential singers of all time especially throughout South Asia and was given the honorific title of Malika-e-Tarannum in Pakistan.

Q77. Answer: (b) Amjad Ali

The Correct Answer is Amjad Ali.

Key Points

• Amjad Ali Khan is an Indian classical sarod player, best known for his clear and fast ekhara taans.

• He was born into a classical musical family and has performed internationally since the 1960s.

• He was awarded India's second-highest civilian honour Padma Vibhushan in 2001.

Additional Information

Swapan Chowdhury:-

• Pandit Swapan Chaudhuri is an Indian tabla player and is considered to be one of the all-time great masters of the instrument.

• He received the American Academy of Artists Award and was a nominee for the Percussive Arts Society Hall of Fame.

• In 1996, Swapan Chaudhuri received the Sangeet Natak Academy Award from the President of India, the highest awards for Classical Music in India. In 2019, he received the Padma Shri, one of India's highest honour from the Indian government.

Zakir Hussain:-

• Zakir Hussain is an Indian tabla virtuoso, composer, percussionist, music producer, film actor.

• He was awarded the Padma Shri in 1988, and the Padma Bhushan in 2002, by the Government of India presented by President Abdul Kalam.

• He was also awarded the Sangeet Natak Akademi Award in 1990, given by the Sangeet Natak Academy.

Q78. Answer: (d) Jharkhand

The Correct Answer is Jharkhand.

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Key Points

• Among the tribal people of Jharkhand, Bhagta Parab is best known as the worship of Budha Baba.

• After worship in the evening, devotees take part in dynamic and vigorous Chhau dance with lots of gymnastic actions and masks.

Additional Information

• Bhagoria is an important tribal festival of Madhya Pradesh.

• Nagoba Jatara is a Hindu tribal festival held in Adilabad district, Telangana.

• The Hornbill Festival is held every year in Nagaland.

• Lavani is a folk dance of Maharashtra.

• 'Aadi Mahotsav', a National Tribal Festival is being organised from 16th to 30th November 2018 in New Delhi by the Ministry of Tribal Affairs.

Q79. Answer: (a) August 1942

The Correct Answer is August 1942.

Key Points

• At Bombay during the All-India Congress Committee session on 8 August 1942, the Mohandas Karamchand Gandhiji launched the 'Quit India' movement.

• After that on subsequent next day, Gandhiji, Nehruji, and few other leaders of the Indian National Congress were arrested by the British Country Government. Disorderly and non-violent demonstrations materialized throughout the country within the coming days.

• And within the middle of 1942, Japanese troops were approaching the borders of India. The pressure was mounting from China, the US, and Britain to resolve the problem of the long-run status of India before the tip of the war.

• Again on March 1942, the Prime Minister dispatched Sir Stafford Cripps, a member of the War Cabinet, to India to debate the land Government's Draft Declaration.

• This draft granted India Dominion status after the war but otherwise conceded few changes to the land Government Act of 1935. This draft was unacceptable to the Congress Working Committee who rejected it. The failure of the Cripps Mission further estranged the Congress and also the British Government.

Q80. Answer: (d) Pakistan

The Correct Answer is Pakistan.

Key Points

• Gujarat shares its border with Pakistan.

• The state is bounded primarily by Pakistan to the northwest and by the Indian states of Rajasthan to the north, Madhya Pradesh to the east, and Maharashtra to the southeast.

• Gujarat also shares a small segment of its southeastern border with the Indian union territory of Dadra and Nagar Haveli, and, together with the Arabian Sea, it surrounds the territory of Daman and Diu.

• Indian states/UTs that share borders with Pakistan are Jammu and Kashmir, Rajasthan, Gujarat, and Punjab.

Additional Information

Country	Indian State Borders
Bangladesh	West Bengal, Meghalaya, Tripura, Assam, Mizoram
Bhutan	Assam, West Bengal, Sikkim, Arunachal Pradesh
Nepal	Uttarakhand, Uttar Pradesh, Bihar, West Bengal, Sikkim

Q81. Answer: (a) pyruvate

The correct answer is pyruvate.

• One molecule of glucose is converted into two molecules of pyruvate, two hydrogen ions, and two molecules of water. Through this process, the high energy molecules of ATP and NADH are synthesized.

• The overall process is called Glycolysis.

• Glycolysis can be considered as a two-part process. Firstly, energy is consumed to generate high energy intermediates, which then go on to release their energy during the second phase:

• The energy investment phase – requires two ADP molecules to produce high energy intermediates.

• The energy pay-out phase – The intermediate is metabolized, producing four ATP molecules and two NADH molecules.

• The overall reaction of glycolysis which occurs in the cytoplasm is represented simply as:

• C6H12O6 + 2 NAD^+ + 2 ADP + 2 P → 2 (CH3(C=O)COOH)+ 2 ATP + 2 NADH + 2 H^+ ; where

• C6H12O6 = Glucose

• NAD = Nicotinamide Adenine Dinucleotide

• ADP = Adenosine Diphosphate

• Pyruvic acid = CH3(C=O)COOH

• ATP = Adenosine Triphosphate

• NADH = Nicotinamide Adenine Dinucleotide Hydride

Q82. Answer: (c) SUMAN Scheme – Free medicines to pregnant women

The correct answer is SUMAN Scheme – Free medicines to pregnant women.

• Surakshit Matritva Aashwasan (SUMAN) to provide quality healthcare at zero cost to pregnant women, new mothers, and newborns. Union Health and Family Welfare Minister Dr. Harsh Vardhan launched the SUMAN scheme on 10 October 2019, during the 13th Conference of Central Council of Health and Family Welfare in New Delhi.

• ASHA is one of the key components of the National Rural Health Mission which provides every village in the country with a trained female community health activist Accredited Social Health Activist (ASHA). Selected from the village itself and accountable to it, the ASHA will be trained to work as an interface between the community and the public health system.

• The scheme was originally started in 2005 as the National Rural Health Mission and was relaunched as the National Health Mission in 2013 which also included the National Urban Health Mission.

• SAGARMALA Scheme was launched in 2015 with the following objectives:

• Reducing the cost of transporting domestic cargo through optimizing the modal mix

• Lowering logistics cost of bulk commodities by locating future industrial capacities near the coast

• Improving export competitiveness by developing port proximate discrete manufacturing clusters

• Optimizing time/cost of EXIM container movement

• Pradhan Mantri Ujjwala Yojana is a scheme of the Ministry of Petroleum & Natural Gas for providing LPG connections to families from Below Poverty Line (BPL) households.

• Pradhan Mantri Ujjwala Yojana was launched by Prime Minister of India Narendra Modi on 1 May 2016 to distribute 50 million LPG connections to Below Poverty Line (BPL) families.

Q83. Answer: (b) Major Dhyan Chand Singh

The correct answer is Major Dhyan Chand Singh.

• National Sports Day of India is celebrated on 29 August every year to commemorate the birth anniversary of hockey wizard Major Dhyan Chand.

• The President gives away sport-related awards such as the Rajiv Gandhi Khel Ratna, Arjuna Award and Dronacharya Award on this day at the Rashtrapati Bhavan, New Delhi, India.

• Major Dhyan Chand was known for his extraordinary goal-scoring capabilities. Known as the Wizard or the Magician of hockey for his superb ball control. Major Dhyan Chand played internationally from 1926 to 1949.

• He won three Olympic gold medals in field hockey in the following events:

• 1928 Amsterdam

• 1932 Los Angeles

• 1936 Berlin

• His influence and talent extended beyond his personal Olympic victories, as India won the field hockey event in seven out of eight Olympics from 1928 to 1964.

• He scored 570 goals in 185 matches according to his autobiography, Goal.

• The Government of India awarded Major Dhyan Chand India's third highest civilian honour of Padma Bhushan in 1956.

• Government of India has issued a commemorative postage stamp and a First Day Cover in honour of Dhyan Chand. He remains the only Indian hockey player to have a stamp in his honour.

• The National Stadium, Delhi was renamed Dhyan Chand National Stadium in 2002 in his honour.

Q84. Answer: (c) production possibility curve

The correct answer is the production possibility curve.

• In macroeconomics, the transformation curve is defined as the maximum amount of one commodity X obtainable for any given amount of another commodity Y, and vice versa.

• This concept is basically the same as the production-possibility frontier studied in microeconomics. In this case, however, the transformation curve shows the trade-off (or opportunity cost) for a country when deciding to produce one commodity or good instead of some other.

• The production possibility frontier (PPF) is a curve that illustrates the variations in the amounts that can be produced of two products if both depend upon the same finite resource for their manufacture.

• PPF also plays a crucial role in economics. It can be used to demonstrate the point that any nation's economy reaches its greatest level of efficiency when it produces only what it is best qualified to produce and trades with other nations for the rest of what it needs.

• So the transformation curve can also be referred to as the production possibility frontier PPF or the production possibility curve.

Q85. Answer: (d) Kapil Dev – 1983

The correct answer is Kapil Dev – 1983.

• Captain of the Indian cricket team, Kapil Dev lifted the World Cup in 1983 defeating the West Indies team.

• India shocked the world under the charismatic captaincy of Kapil Dev, who took the catch of Clive Lloyd that changed the game in India's favour.

• The rest three options are not matched correctly. Please check the table to know about all the winning teams and their captains of the International Men's Cricket World Cup since 1983.

• Men's Cricket World Cup winners since 1983:

Year	Winning Team	Captain Of the winning Team
1983	India	Kapil Dev
1987	Australia	Alan Border
1992	Pakistan	Imran Khan
1996	Sri Lanka	Arjuna Ranatunga
1999	Australia	Steve Waugh
2003	Australia	Ricky Ponting
2007	Australia	Ricky Ponting
2011	India	Mahendra Singh Dhoni
2015	Australia	Michael Clarke
2019	England	Eoin Morgan

Q86. Answer: (a) It is unable to permit legitimate communication to pass.

The correct answer is It is unable to permit legitimate communication to pass.

• A firewall is a network security device/software that monitors incoming and outgoing network traffic and permits or blocks data packets based on a set of security rules. Its purpose is to establish a barrier between your internal network and incoming traffic from external sources (such as the internet) in order to block malicious traffic like viruses and hackers.

• A legitimate or genuine content can always pass through the firewall depending on the permission set by the firewall.

• Firewalls filter traffic coming from unsecured or suspicious sources to prevent attacks and carefully analyze incoming traffic based on pre-established rules.

• Firewalls guard traffic at a computer’s entry point called ports, which is where information is exchanged with external devices.

• Firewalls can either be software or hardware, though it’s best to have both.

• A software firewall is a program installed on each computer and regulates traffic through port numbers and applications, and pre-defined rules, while a physical firewall is a piece of equipment installed between your network and gateway.

Q87. Answer: (a) B.R. Ambedkar

The correct answer is B.R. Ambedkar.

• B.R. Ambedkar was the chairman of the drafting committee of the Constituent Assembly.

• On 9 December 1946, the Constituent Assembly sat for the first time. In the span of 2 years,11 months and 18 days, it completed its task of framing the Indian Constitution.

• During this period the Constituent Assembly had 11 sessions and sat for a total of 166 days.

• On 26 November 1949 the Constituent Assembly adopted the Constitution of India which came into force on 26 January 1950.

• Important Committees of the Constituent Assembly and their Chairman:

Committee	Chairman
Committee on the Rules of Procedure	Rajendra Prasad

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Steering Committee	Rajendra Prasad
Finance and Staff Committee	Rajendra Prasad
Credential Committee	Alladi Krishnaswami Ayyar
House Committee	B. Pattabhi Sitaramayya
Order of Business Committee	K.M. Munshi
Ad hoc Committee on the National Flag	Rajendra Prasad
Committee on the Functions of the Constituent Assembly	G.V. Mavalankar
States Committee	Jawaharlal Nehru
Advisory Committee on Fundamental Rights, Minorities and Tribal and Excluded Areas	Vallabhbhai Patel
Minorities Sub-Committee	H.C. Mookherjee
Fundamental Rights Sub-Committee	J.B. Kripalani
North-East Frontier Tribal Areas and Assam Excluded & Partially Excluded Areas Sub-Committee	Gopinath Bardoloi
Excluded and Partially Excluded Areas (Other than those in Assam) Sub-Committee	A.V. Thakkar
Union Powers Committee	Jawaharlal Nehru
Union Constitution Committee	Jawaharlal Nehru
Drafting Committee	B.R. Ambedkar

Q88. Answer: (b) Sunk cost

The correct answer is Sunk cost.

• A sunk cost refers to money that has already been spent and which cannot be recovered. Sunk costs are those which have already been incurred and which are unrecoverable.

• For example, a manufacturing firm may have a number of sunk costs, such as the cost of machinery, equipment, and the lease expense on the factory.

• In business, sunk costs are typically not included in consideration when making future decisions, as they are seen as irrelevant to current and future budgetary concerns.

Additional Information

• Imputed cost or opportunity cost is the cost incurred during the period when an asset is employed for a particular use, rather than redirecting the asset to a different use. This amount is the incremental difference between the two options.

• The imputed cost can be understood from the following example- suppose a company has a pile of cash that earns only 150 basis points or 1.5 per cent in a money market account. Meanwhile, alternative risk-free securities are yielding 2%. The imputed cost is 50 basis points or 0.5 per cent, the foregone amount that the company would be earning if it invested the cash in the higher-yielding securities.

• Replacement cost is a term referring to the amount of money a business must currently spend to replace an essential asset like a real estate property, investment security, or another item, with one of the same or higher value.

Q89. Answer: (b) Barack Obama

The correct answer is Barack Obama.

• The Norwegian Nobel Committee decided that the Nobel Peace Prize for 2009 should be awarded to President Barack Obama for his extraordinary efforts to strengthen international diplomacy and cooperation between people.

• The Committee has also attached special importance to Obama’s vision of and work for a world without nuclear weapons.

• Obama became the fourth President of the United States to have won the Nobel Peace Prize.

• Other American Presidents who won the Noble Peace Prize are:

• Theodore Roosevelt: 1906

• Woodrow Wilson: 1919

• Jimmy Carter: 2002

• Barak Obama is an American politician and attorney who served as the 44th president of the United States from 2009 to 2017.

He was the first African-American president of the United States of America.

Q90. Answer: (c) Gravity

The correct answer is Gravity.

• Gravity is the force by which a planet or other body draws objects toward its center.

• The force of gravity keeps all of the planets in orbit around the sun.

• Anything that has mass also has gravity. Objects with more mass have more gravity. Gravity also gets weaker with distance. So, the closer objects are to each other, the stronger their gravitational pull is.

• Earth's gravity comes from all its mass.

• All its mass makes a combined gravitational pull on all the mass in an object in its gravitational area.

• This gravitational pull causes an object to come back to earth if we throw it up in the air.

• We experience weight because for the same reason. And if we were on a planet with less mass than Earth, we would weigh less than we do on earth. That's the reason why our weight on the moon becomes 1/6th of our weight on earth.

• The planets revolve around the sun because of the gravitational force between the sun and the planet.

Additional Information

• Thrust:

• The force acting perpendicular to the surface of the object is called thrust.

• When any object is put into the water then the object will replace the water the same as its volume and the cause of which there is a force acting upwards, to balance this weight is called the thrust force.

• The effect of thrust is more on the smaller surface area than the thrust acting on a larger surface area.

• Thrust Force (FT) = Pressure (P) × Area (A)

• Resistance:

• The resistance of a metal conductor is always directly proportional to its length as the longer the conductor, the more will be its resistance.

• Resistance = Resistivity × Length / Area

Q91. Answer: (b) A, B and C

The correct answer is A, B, and C.

• There are following four biodiversity hotspots in India:

• The Himalayas:

• Includes the entire Indian Himalayan region (and that falling in Pakistan, Tibet, Nepal, Bhutan, China, and Myanmar).

• These Himalayan Mountains are the highest in the world and abode to some of the highest peaks of the world including Mount Everest and K2. Some of the major rivers in the world originate from the Himalayas.

• There are many endangered species in this region including one-horned rhinoceros, wild Asian water buffalo, and relict dragonfly whose only other species is found in Japan.

• Indo-Burma:

• Includes entire Northeastern India, except Assam and Andaman group of Islands (and Myanmar, Thailand, Vietnam, Laos, Cambodia, and southern China).

• Different species of mammals have been discovered in this region recently including large-antlered muntjac, Annamite Muntjac, grey-shanked douc, leaf deer, saola, and Annamite striped rabbit.

• Other species such as monkeys, langurs, and gibbons too can be found here. Freshwater turtle species are also found in the region.

• The Sundalands:

• Includes Nicobar group of Islands (and Indonesia, Malaysia, Singapore, Brunei, Philippines).

• These islands were declared as the world biosphere reserve in 2013 by the United Nations.

• These islands have rich terrestrial as well as marine ecosystems including mangroves, seagrass beds, and coral reefs. Species such as dolphins, whales, turtles, crocodiles, fishes, prawns, lobsters, and seashells comprise marine biodiversity.

• The Western Ghats and Sri Lanka:

• Includes the entire Western Ghats which comprise Tamil Nadu, Kerala, Karnataka, Goa, Maharashtra, and Gujarat (and Sri Lanka).

• These hills are present along the western edge of peninsular India.

• Since they are situated near the ocean, they are likely to receive a good amount of rainfall. Most of the deciduous, as well as rainforests, are present in this region.

Q92. Answer: (a) Dronacharya Award

The correct answer is Dronacharya Award.

Key Points

• The Dronacharya Award instituted in 1985 for Outstanding Coaches in Sports and Games, are sports coaching honour of the Republic of India. The award is named after Drona, often referred to as "Dronacharya" or "Guru Drona", a character from the Sanskrit epic Mahabharata of ancient India.

• Dronacharya Award for outstanding coaches in Sports and Games 2022 Regular Category: Jiwanjot Singh Teja (Archery), Mohammad Ali Qamar (Boxing), Suma Siddharth Shirur (Para Shooting), Sujeet Maan (Wrestling).

Important Points

• Dronacharya Award (Regular) 2022:

• Jiwanjot Singh Teja- Archery

• Mohammad Ali Qamar- Boxing

• Suma Siddharth Shirur- Para shooting

• Sujeet Maan- Wrestling

Additional Information

Name of India's National Sports Awards	Awarded For
Major Dhyan Chand Khel Ratna Award	Awarded for outstanding performances in sports spanning over a period of four years.
Arjun award	Given out for consistently good performance over a period of four years.
Major Dhyan Chand Award	Presented for good performance and contributing towards the promotion of sports.
Maulana Abul Kalam Azad Trophy	Given to the university for top performance in inter-university tournaments over the last one year.
Rashtriya Khel Protsahan Puruskar	Awarded to organisations and individuals for playing a role in the area of sports promotion and development over the last three years.
Tenzing Norgay National Adventure Award	To recognise outstanding achievements in the field of adventure activities or sports on land, sea and air.

Q93. Answer: (c) Pluto

The correct answer is Pluto.

Key Points

• In 2006 the International Astronomical Union (IAU) redefined the planets to be the bodies in space having the following characteristics:

• It is in orbit around the Sun.

• It has sufficient mass to assume hydrostatic equilibrium (a nearly round shape).

• It has cleared the neighborhood around its orbit.

• Pluto perfectly meets the two of these criteria but fails to fulfill the third.

• In all the billions of years it has lived there, it has not managed to clear its neighborhood.

• Clearing the neighborhood means that the planet has become gravitationally dominant — there are no other bodies of comparable size other than its own satellites or those otherwise under its gravitational influence, in its vicinity in space.

• There are some objects from the Kuiper Belt which is under the area of Pluto's gravitational area but the gravitational pull is not strong enough to pull these objects towards Pluto.

• So from 2006 Pluto is considered a Dwarf Planet, not a planet.

Q94. Answer: (a) M.K. Gandhi

The correct answer is M.K. Gandhi

Key Points

• My Experiments with Truth is the autobiography of Mohandas K. Gandhi, covering his life from early childhood through to his early freedom struggles.

• It was originally written in Gujarati language and was published in weekly instalments in his journal Navjivan from 1925 to 1929.

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• Its English translation also appeared in instalments in his other journal Young India. The translation was done by Mahadev Desai.

• Gandhi in 1888 went to London to study law at the University College, London which is a constituent college of the University of London.

• After that, he moved to South Africa in 1893 and stayed there for 21 years. There he worked for the rights of African people.

• After over 21 years of stay in South Africa, Gandhi returned to India on 9 January 1915 and the same day is celebrated as the Pravasi Bharatiya Divas.

• Mahatma Gandhi actively took part in freedom movements like the Non-Cooperation Movement (1920), Salt Satyagraha (1930), Quit India Movement (1942), and many more.

• He was a follower of satyagraha and non-violence.

• He was assassinated by Nathuram Godse on 30 January 1948.

• A memorial dedicated to Mahatma Gandhi called Raj Ghat is the name of Mahatma Gandhi's Samadhi. It is located next to the sanctity of the river Yamuna.

Q95. Answer: (a) Manoj Mukund Naravane

The correct answer is Manoj Mukund Naravane.

• The Chief of Army Staff (COAS) is mostly the senior-most officer of the Indian Army and military adviser to the Government of the Republic of India and the Ministry of Defence.

• The current COAS is General Manoj Mukund Naravane, PVSM, AVSM, SM, VSM, ADC who took charge on 31 December 2019.

Additional Information

• Gallantry awards and their full names which the COAS is currently decorated with:

• PVSM: stands for Param Vishisht Seva Medal

• AVSM: stands for Ati Vishisht Seva Medal

• SM: stands for Sena Medal

• VSM: stands for Vishisht Seva Medal

• ADC: stands for aide-de-camp (given for service as a personal assistant or secretary to a person of high rank, usually a senior military, police or government officer, or head of state.)

• General Naravane is a Four-Star General of the Indian Army and the 28th Chief of the Army Staff (COAS).

• He took over from General Bipin Rawat after the latter completed his term as the COAS. General Bipin Rawat is currently serving as the Chief of Defence Staff.

• Appointments to the office are made by the Appointments Committee of the Cabinet (ACC).

• The COAS retires upon three years in the office or at the age of 62, whichever is earlier.

Q96. Answer: (c) 1982

The correct answer is 1982.

• The Convention entered into force in India on 1 February 1982.

• The Convention on Wetlands is an intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources.

• The Convention was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975.

• Since then, almost 90% of UN member states, from all the world's geographic regions, have acceded to become Contracting Parties.

• The Ramsar Convention's broad aims are to halt the worldwide loss of wetlands and to conserve, through wise use and management, those that remain. This requires international cooperation, policymaking, capacity building, and technology transfer.

• India currently has designated 96 wetlands covering an area of 15,37,957 hectares under the List of Wetlands of International Importance.

• India added Siliserh Lake in Rajasthan and Kopra reservoir in Chhattisgarh to the List of Wetlands of International Importance.

Q97. Answer: (a) Maharana Pratap

The correct answer is Maharana Pratap.

• The Battle of Haldighati was a battle fought on 18 June 1576 between Maharana Pratap of Mewar, and the Mughal emperor Akbar.

• The site of the battle was a narrow mountain pass at Haldighati near Gogunda in Rajasthan.

• The forces of Maharana Pratap consisted of cavalry and archers and the Mughal emperor Akbar's forces were led by Man Singh I of Amber.

• Technically the battle was won by the Mughals but it was not a true victory because Maharana Pratap was not captured and he

continued his struggle and also took back most of the lost land.

• The name of the Maharana Pratap's horse is Chetak. Although wounded, he carried Maharana Pratap safely away from the battleground, but then died of his wounds.

• In 1582, Maharana Pratap attacked and occupied the Mughal post at Dewair (or Dawer). This led to the automatic liquidation of all 36 Mughal military outposts in Mewar. Maharana Pratap recovered Western Mewar including Kumbhalgarh, Udaipur, and Gogunda. After recovering these areas he also built a new capital, Chavand, near modern Udaipur.

• Finally, in 1597 Mahara Pratap died due to injuries from hunting.

• Basic Information about other Kings given in option:

• Rana Amar Singh: Amar Singh I, the Maharana of Mewar, was the eldest son and successor of Maharana Pratap of Mewar. He became the ruler of Mewar in 1597 after the death of his father Maharana Pratap. He reigned till his death on 26 January 1620. He was the 14th Rana of the Mewar dynasty of Sisodia Rajputs and His capital was Udaipur.

• Maharaja Udai Singh: Udai Singh II was the Maharana of Mewar and the founder of the city of Udaipur, Rajasthan. He was the 12th ruler of the Mewar dynasty. He was the fourth son of Rana Sanga and Rani Karnavati. He was the father of Maharana Pratap. He reigned from 1540 to 1572.

• Raja Mansingh: Raja Man Singh I was the Kachwaha Rajput ruler of Amer, which is presently known as Jaipur in Rajputana. Raja Mansingh was the one who led Akbar's forces in the battle of Haldighati. He was one of the nine gems in Akbar's court. He reigned from 1589 to1614.

Q98. Answer: (c) Alveoli

The correct answer is Alveoli.

• Alveoli is the tiny part inside the lungs where the exchange of oxygen and carbon dioxide actually takes place. Each person has hundreds of millions of alveoli in their lungs.

• The Trachea (windpipe) is the main passage leading from your nose to the lungs.

• The trachea divides into the two main Bronchi (tubes), one for each lung. The bronchi, in turn, subdivide further into bronchioles.

• The smallest section of the bronchi is called Bronchioles, at the end of which are the alveoli (plural of alveolus).

• Every few seconds, with each inhalation, air fills a large portion of the millions of alveoli. In a process called diffusion, oxygen moves from the alveoli to the blood through the capillaries (tiny blood vessels) lining the alveolar walls. Once in the bloodstream, oxygen gets picked up by the hemoglobin in red blood cells. This oxygen-rich blood then flows back to the heart, which pumps it through the arteries to oxygen-hungry tissues throughout the body.

• In the tiny capillaries of the body tissues, oxygen is freed from the hemoglobin and moves into the cells. Carbon dioxide, made by the cells as they do their work, moves out of the cells into the capillaries, where most of it dissolves in the plasma of the blood. Blood rich in carbon dioxide then returns to the heart via the veins. From the heart, this blood is pumped to the lungs, where carbon dioxide passes into the alveoli to be exhaled.

Q99. Answer: (d) April

The correct answer is April.

• Bohag Bihu Or Rongali Bihu is one of the major festivals of Assam.

• Commonly known as Rongali Bihu, it is celebrated in Assam during the middle of the month of April.

• This festival celebrates the onset of the Assamese New Year (around April 15) and the coming of Spring.

• This marks the first day of the Hindu solar calendar and is also observed in Bengal, Manipur, Nepal, Orissa, Punjab, Kerala, and Tamil Nadu though called by different names like Pongal in south India, Baisakhi in north India. This festival celebrated for the whole month.

• The new year of the Assamese calendar usually falls on April 15. The new year starts with the month Bohag. This is the reason why Rongali Bihu is also called Bohag Bihu.

• The word Rongali is derived from Rong which means Happiness and celebrations. So this festival represents the happiness of society.

• On the eve of Rongali Bihu, the womenfolk clean the clothes and prepare special Bihu delicacies like Chira, Pitha, etc. In the rural areas, the menfolk remain busy in collecting necessary items such as Tara Pogha (ropes for the cattle) prepared out of slices of Tara (an indigenous creeper) and vegetables such as raw turmeric, brinjal, gourd, etc for the next day's Garu Bihu.

Q100. Answer: (c) President of India in consultation with senior judges of Supreme Court and High Court

The correct answer is the President of India in consultation with senior judges of Supreme Court and High Court

• The Chief Justice of India (CJI) is appointed by the President of India under clause (2) of Article 124 of the Constitution.

• The chief justice is appointed by the president after consultation with such judges of the Supreme Court and high courts as he deems necessary.

• The other judges are appointed by the president after consultation with the chief justice and such other judges of the Supreme Court and the high courts as he deems necessary. The consultation with the chief justice is obligatory in the case of the

appointment of a judge other than Chief justice.

• The basic procedure to be followed for the appointment of CJI is:

• Appointment to the office of the Chief Justice of India should be of the senior-most Judge of the Supreme Court considered fit to hold the office.

• The Union Minister of Law, Justice and Company Affairs would, at the appropriate time, seek the recommendation of the outgoing Chief Justice of India for the appointment of the next Chief Justice of India.

• Whenever there is any doubt about the fitness of the senior-most Judge to hold the office of the Chief Justice of India, consultation with other Judges as envisaged in Article 124 (2) of the Constitution would be made for the appointment of the next Chief Justice of India.

• After receipt of the recommendation of the Chief Justice of India, the Union Minister of Law, Justice and Company Affairs will put up the recommendation to the Prime Minister who will advise the President in the matter of appointment.

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