SSC CHSL Previous Paper 2 (Held On: 2 Jul 2019 Shift 1) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2019 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Q1. In the sentence identify the segment which contains the grammatical error.

The Public Works Department has propose to construct an elevated corridor which will run parallel to the National highway.

(a) The Public Works Department has propose
(b) to construct an elevated corridor
(c) to the National highway
(d) which will run parallel

Directions

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.

Big Ben is the UK's most iconic symbol. Since 2017, the Elizabeth Tower and the bell inside have been (1) ____ renovation. The structure is 160 years old and (2) __ regular maintenance. (3) __ many years, people had been painting the hands and numbers (4) __ the clock black, but last Thursday, the workers (5) ____ the clock's original colour, Prussian Blue!

Q2. Select the most appropriate option for blank No. 1.

(a) undertaking
(b) understanding
(c) undergoing
(d) undermining

Q3. Select the most appropriate option for blank No. 2.

(a) was needing
(b) needs
(c) is needed
(d) has needed

Q4. Select the most appropriate option for blank No. 3.

(a) For
(b) In
(c) Before
(d) About

Q5. Select the most appropriate option for blank No. 4.

(a) to
(b) for
(c) at
(d) of

Q6. Select the most appropriate option for blank No. 5.

(a) invented
(b) discovered
(c) imparted
(d) concealed

Q7. Select the correct passive form of the given sentence.

The gardener has mowed the lawn.

(a) The lawn has been mowed by the gardener.
(b) The gardener has been mowed by the lawn.
(c) The lawn is mowed by the gardener.
(d) The lawn was mowed by the gardener.

Q8. 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.

Oh, what a lovely necklace! You need no buy such an expensive gift.

(a) No improvement
(b) didn't need to buying
(c) needn't have bought
(d) hadn't needed to buy

Q9. Select the most appropriate word to fill in the blank.

People's will and determination can help them _____ most of the challenges of life.

(a) overcome
(b) overview
(c) overdo
(d) overvalue

Q10. Select the wrongly spelt word.

(a) assuredly
(b) assure
(c) assurable
(d) assurence

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

A group of singers in a church

(a) band
(b) troop
(c) choir
(d) host

Q12. Select the correct indirect form of the given sentence.

Mrs. Gupta said to me, "Why are these boys standing in the sun?"

(a) Mrs. Gupta asked me why those boys were standing in the sun.
(b) Mrs. Gupta said to me that why are these boys standing in the sun.
(c) Mrs. Gupta asked me why were these boys standing in the sun.
(d) Mrs. Gupta told me why those boys are standing in the sun.

Q13. Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order.

A. Most of them are in jail because of their circumstances.
B. Not all prisoners are hardcore criminals.
C. So, they deserve a chance to rehabilitate themselves.
D. Therefore, learning a trade would help them reintegrate with society.

(a) ABCD

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(b) DCBA
(c) BDCA
(d) BACD

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

A. He often asked questions which were strange and witty.
B. Emperor Akbar was in the habit of putting riddles and puzzles to his courtiers.
C. Once he asked a strange question that confused everyone.
D. It took much wisdom to answer these questions.

(a) BACD
(b) ABCD
(c) CABD
(d) BADC

Q15. In the sentence identify the segment which contains the grammatical error.

I visited my friend to whom I had made an appointment.

(a) I visited my friend
(b) to whom
(c) I had made
(d) an appointment

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

SUCCINCT

(a) curt
(b) pithy
(c) lengthy
(d) terse

Q17. 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.

I hope never to have another so experience as I had in Puri during Cyclone Fani.

(a) as experience as
(b) No improvement
(c) such experience as
(d) same experience as

Q18. Select the most appropriate antonym of the given word.

EXOTIC

(a) colourful
(b) ordinary
(c) alien
(d) curious

Q19. Select the most appropriate synonym of the given word.

HIND

(a) near
(b) rear
(c) front
(d) first

Q20. Select the wrongly spelt word.

(a) Barrier
(b) Berry
(c) Berrel

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(d) Barren

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

to air dirty linen in public

(a) to stand up and fight
(b) to discuss private affairs in public
(c) to hang out clothes in the open
(d) to continue to complain

Q22. Select the most appropriate synonym of the given word.

INNUENDO

(a) verification
(b) evidence
(c) implication
(d) proof

Q23. Select the word which means the same as the group of words given.

One who does not tire easily

(a) indefatigable
(b) indelible
(c) infallible
(d) inevitable

Q24. Select the most appropriate word to fill in the blank.

In spite of being born in an _____ family, he chose to fight all odds and emerged as a notable statesman.

(a) immaculate
(b) intelligent
(c) impeccable
(d) impoverished

Q25. Select the most appropriate meaning of the given idiom.

throw in the towel

(a) face the situation
(b) think of a solution
(c) drop something
(d) admit defeat

GENERAL INTELLIGENCE

Q26. 'Cardiologist' is related to 'Heart' in the same way as 'Chiropractor' is related to '_____'.

(a) Skin
(b) Chest
(c) Foot
(d) Joints

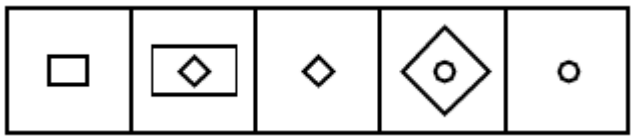
Q27. Select the word-pair in which the two words are related in the same way as are the two words in the following word-pair.

Spoke : Wheel

(a) Square : Side
(b) Printer : Computer
(c) Tree : Branch
(d) Word : Sentence

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Q28. Select the figure that will come next in the following figure series.



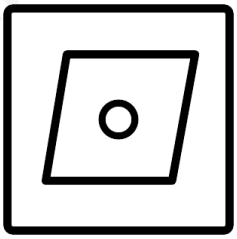
(a)



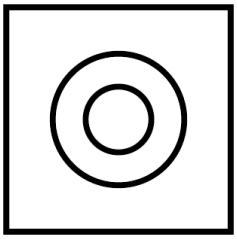
(b)



(c)



(d)



Q29. If MASTER is coded as 26138402536 and GOVIND is coded as 142254481288, then how will BACKSPACE be coded as?

(a) 5172339317125
(b) 5172933373215
(c) 4172393337125
(d) 4162238321625

Q30. Three of the following four words are alike in a certain way and one is different. Pick the odd word out.

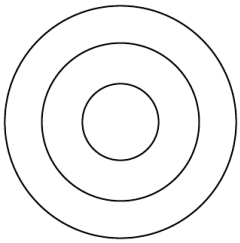
(a) Suitcase
(b) Purse
(c) Bag
(d) Carpet

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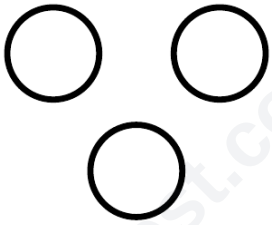
Q31. Select the Venn diagram that best illustrates the relationship between the following classes.

Raw material, Labourers, Machines.

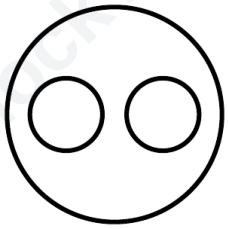
(a)



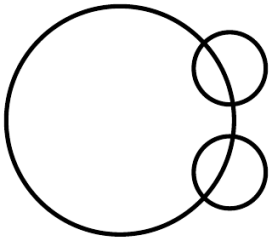
(b)



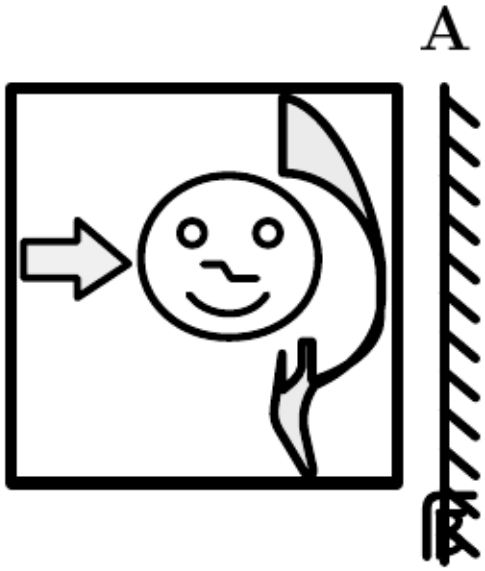
(c)



(d)

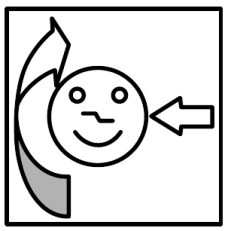


Q32. Select the correct mirror image of the given figure when the mirror is placed to the right of the figure.

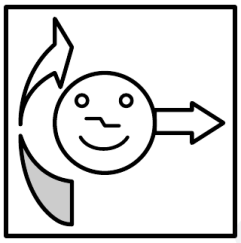


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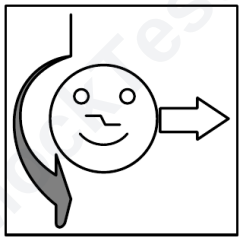
(a)



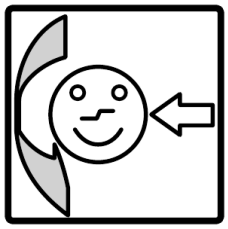
(b)



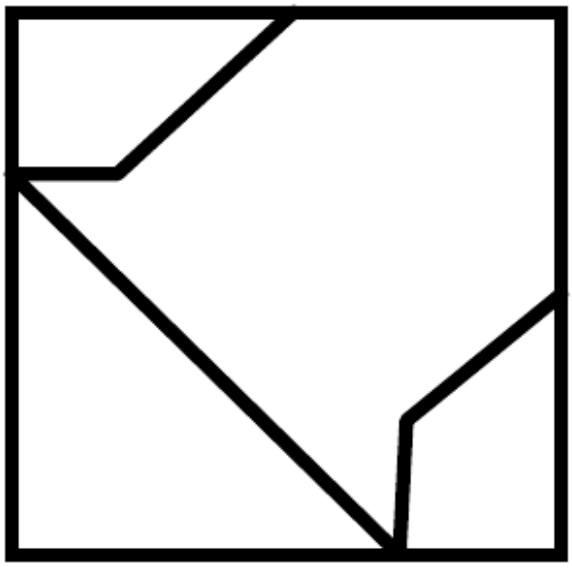
(c)



(d)

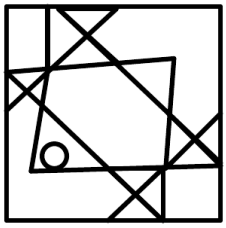


Q33. Select the option in which the given figure is embedded.

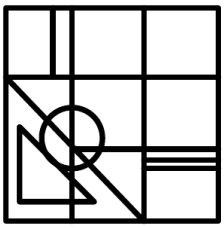


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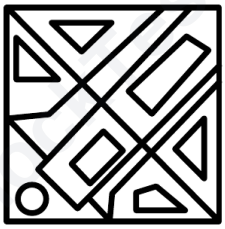
(a)



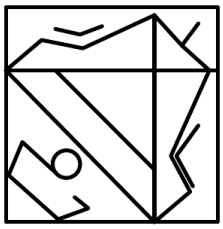
(b)



(c)



(d)



Q34. Three statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

Some essays are poems.

Some poems are directors.

All directors are singers.

Conclusions:

I. Some directors are poems.

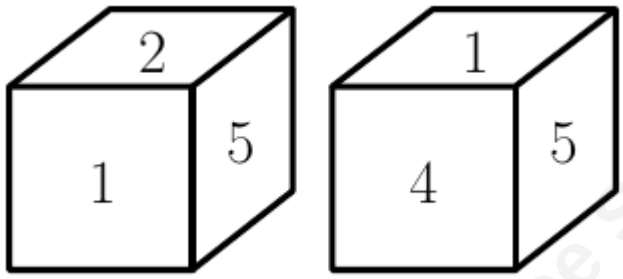
II. Some singers are essays.

III. Some singers are poems.

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

Q35. Two different positions of the same dice are shown. Find the number opposite to the face having 4.

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

Q36. Rahul has Rs. 340 in the denominations of Rs. 2 notes, Rs. 5 notes and Rs. 10 notes. The number of notes of each denomination is equal. What is the total number of notes that Rahul has?

(a) 60
(b) 80
(c) 40
(d) 20

Q37. Select the set in which the numbers are related in the same way as are the numbers of the following set.

(5, 2, 30)

(a) (4, 3, 28)
(b) (5, 1, 29)
(c) (7, 8, 114)
(d) (9, 2, 87)

Q38. Select the combination of letters that when sequentially placed in the gaps of the given letter series will complete the series.

ab_ba_babd_acb_bdba_b

(a) cdabc
(b) dcabc
(c) dcbac
(d) acbcd

Q39. Three of the following four numbers are alike in a certain way and one is different. Pick the number that is different from the rest.

(a) 9368
(b) 4147
(c) 7298
(d) 8205

Q40. Which two signs should be interchanged in the following equation to make it correct?

24 ÷ 2 + 13 – 54 × 2 = 34

(a) • and ÷
(b) × and ÷
(c) • and ×
(d) • and ×

Q41. Which number will replace the question mark (?) in the following series?

5, 9, 18, 43, 92, 213, 382, ?

(a) 328
(b) 671
(c) 617

(d) 382

Q42. Select the option that is related to the third number in the same way as the second number is related to the first number.

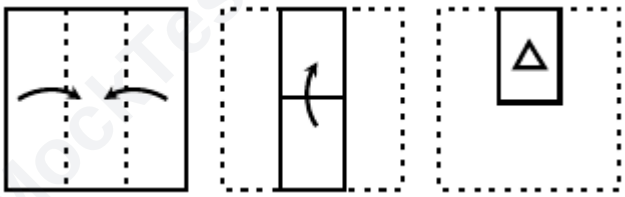
54 : 41 :: 32 : ____

(a) 13
(b) 29
(c) 11
(d) 17

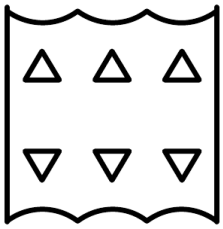
Q43. In a family of 5 members, X is the sister of Y. M has two children and he is the son of E, who is the father-in-law of H. H has only one son. Y is not the grand-daughter of E. How is X related to E?

(a) Grand-daughter
(b) Grandson
(c) Daughter
(d) Sister

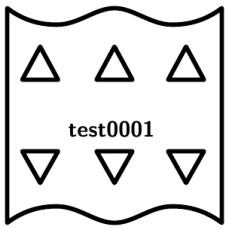
Q44. A paper is folded and cut as shown in the following figures. How will it open when unfold?



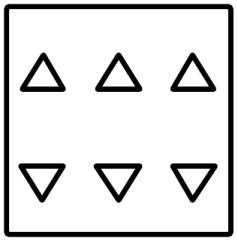
(a)



(b)

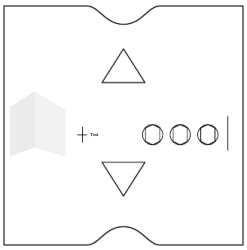


(c)



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(d)



Q45. In a code language, PERMUTATION is written as IBKFRMXMFLG. How will PUBLICSECTOR be written as in that language?

(a) IRVEFVLBVMLK
(b) ICUFEVLBVMLJ
(c) ICUFEVLBVNLK
(d) IRUEFVLBVMLK

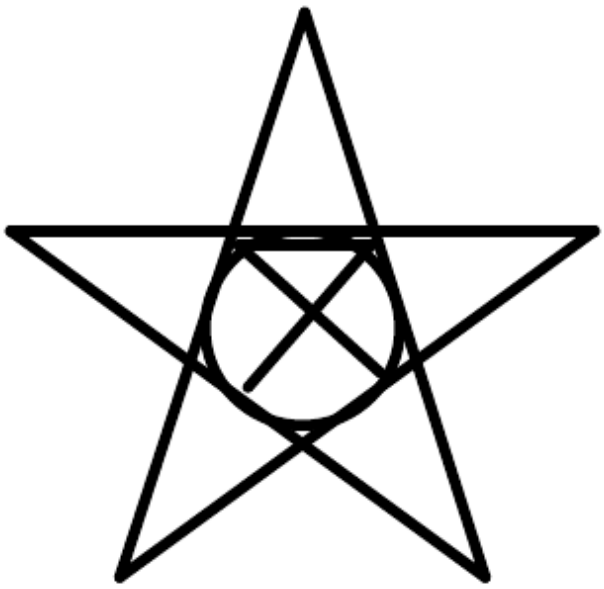
Q46. Three of the following four letter-clusters are alike in a certain way and one is different. Pick the odd one out.

(a) CXGT
(b) LOPK
(c) MNQJ
(d) GSVE

Q47. Select the set in which the numbers are related in the same way as are the numbers of the following set.
(4, 10, 23)

(a) (7, 23, 49)
(b) (4, 12, 21)
(c) (3, 7, 18)
(d) (2, 6, 15)

Q48. How many triangles are present in the following figure?



(a) 12
(b) 14
(c) 10
(d) 13

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Q49. 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.

MARKET : IEONCV :: THERMO : _____

(a) JKCTKQ
(b) PLDSKQ
(c) PLBUKQ
(d) JLZUKQ

Q50. Arrange the following words in a logical and meaningful order.

1) Promotion
2) Application
3) Job appointment
4) Written test
5) Merit list

(a) 4, 2, 5, 3, 1
(b) 3, 2, 4, 1, 5
(c) 2, 4, 5, 3, 1
(d) 2, 5, 4, 3, 1

QUANTITATIVE APTITUDE

Q51. If the eight -digit number 342x 18y6 is divided by 72, then what is the value of √(9x + y), for the largest value of y?

(a) 2√7
(b) 8
(c) 4√7
(d) 6

Q52. Two circles of radii 15 cm and 12 cm intersect each other, and the length of their common chord is 18 cm. What is the distance (in cm) between their centers?

(a) 18 + √7
(b) 12 + 3√7
(c) 12 + 2√7
(d) 15 + √7

Q53. Two concentric circles are of radii 15 cm and 9 cm. What is the length of the chord of the largest circle which is tangent to the smaller circle?

(a) 18 cm
(b) 25 cm
(c) 24 cm
(d) 20 cm

Q54. If 30 persons take 10 days to complete a certain work working 8 hours a day, then 40 persons should work how many hours a day so that the work is completed in 6 days?

(a) 12
(b) 8
(c) 6
(d) 10

Q55. If $a + b + c = 5$, $a^2 + b^2 + c^2 = 27$ and $a^3 + b^3 + c^3 = 125$, then the value of 4abc is:

(a) 20
(b) 15
(c) -20
(d) -15

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Q56. A person sold an article at a loss of 8%. Had he sold it at a gain of 10.5%, he would have received Rs. 37 more. What is the cost price of the article?

(a) Rs. 200
(b) Rs. 210
(c) Rs. 240
(d) Rs. 250

Q57. If $3\sqrt{3}\,x^3 - 2\sqrt{2}\,y^3 = (\sqrt{3}\,x - \sqrt{2}\,y)(Ax^2 - Bxy + Cy^2)$, then the value of $(A^2 + B^2 + C^2)$ is:

(a) 17
(b) 10
(c) 1
(d) 19

Q58. If $\cot\theta = 1/(\sqrt{3})$, then the value of $(2 - \sin^2\theta)/(1 - \cos^2\theta) + (\text{cosec}^2\theta + \sec\theta)$ is:

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

Q59. In ΔABC, AB = 7 cm, BC = 24 cm and AC = 25 cm. If G is the centroid of the triangle, then what is the length (in cm) of BG?

(a) 81/3
(b) 82/3
(c) 9
(d) 10

Q60. If $\cos^2\theta - \sin^2\theta - 3\cos\theta + 2 = 0$, $0° < \theta < 90°$, then what is the value of $4\,\text{cosec}\theta + \cot\theta$?

(a) $3\sqrt{3}$
(b) 3
(c) 4
(d) $4\sqrt{3}$

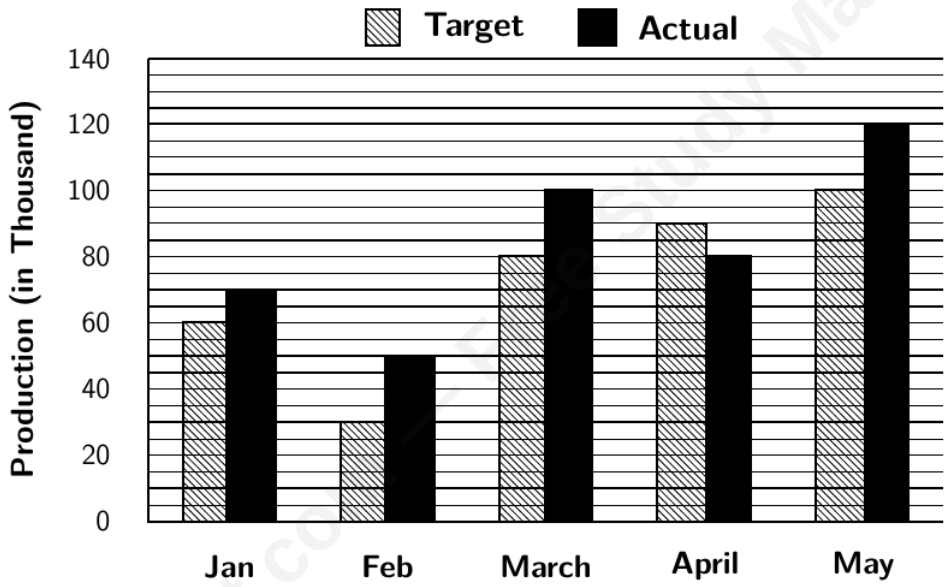
Q61. The simple interest on a certain sum for 3 ½ years at 10% per annum is Rs. 2,940. What will be the compound interest on the same sum for 2 ½ years at the same rate when interest is compounded yearly (nearest to rupee)?

(a) Rs. 2,327
(b) Rs. 2,272
(c) Rs. 2,227
(d) Rs. 2,372

Directions

Directions: The given Bar Graph presents the Target and Actual production of AC Machines (numbers in thousand) of a factory over five months.

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Q62. The ratio of the combined target production of AC Machines In January and April to that of the combined actual production of AC Machine in March and April was:

(a) 3 : 2
(b) 2 : 3
(c) 4 : 5
(d) 5 : 6

Q63. The actual production of AC Machines in April was what percentage more than the average target production of AC Machines over five months?

(a) 10%
(b) 111/9%
(c) 101/9%
(d) 9%

Q64. The total target production of AC Machines in February, April and May was what percentage less than the total actual production of AC Machines over all the five months (correct to one decimal place)?

(a) 47.1%
(b) 46.8%
(c) 47.6%
(d) 46.2%

Q65. In which month the actual production of AC Machines was 25% more than the target production?

(a) March
(b) May
(c) January
(d) February

Q66. A is 20% more than B, B is 25% more than C, C is 60% less than D and D is 20% more than E. Based on the above information, which of the following is true?

(a) C is 24% less than A
(b) A is 40% less than D
(c) E is 28% more than A
(d) D is 60% less than B

Q67. Two trains of same length are running on parallel tracks in the same direction at 54 km/h and 42 km/h respectively. The faster train passes the other train in 60 seconds. What is the length (in metres) of each train?

(a) 100
(b) 81
(c) 90
(d) 210

Q68. $((\sec\theta + \tan\theta)(1 - \sin\theta))/(\text{cosec}\theta\,(1 + \cos\theta)(\text{cosec}\,\theta - \cot\theta))$ is equal to

(a) $\sin\theta$
(b) $\text{cosec}\,\theta$
(c) $\cos\theta$
(d) $\sec\theta$

Q69. If $a^2 + 4b^2 + 49c^2 + 18 = 2(2b + 28c - a)$, then the value of $(3a + 2b + 7c)$ is:

(a) 1
(b) 0
(c) 2
(d) 3

Q70. A ΔABC, D and E are the points on sides AB and AC, respectively, such that DE || BC. If DE : BC is 3 : 5, then (Area of ΔADE): (Area of quadrilateral DECB) is:

(a) 5 : 8
(b) 3 : 4
(c) 9 : 16
(d) 9 : 25

Q71. The value of $(3 \div \{5 - 5 \div (6 - 7) \times 8 + 9\})/(4 + 4 \times 4 \div 4 \text{ of } 4)$ is:

(a) 1/3
(b) 1/18
(c) 1/90
(d) 1/45

Q72. The volume of a right circular cone is 924 cm^3. If its height is 18 cm, then the area of its base (in cm^2) is:

(a) 198
(b) 132
(c) 176
(d) 154

Q73. The ratio of the incomes of A and B is 2 : 3 and that of their expenditure is 1 : 2. If 90% of B's expenditure is equal to the income of A, then what is the ratio of the savings of A and B?

(a) 9 : 8
(b) 8 : 7
(c) 3 : 2
(d) 1 : 1

Q74. After allowing a discount of 10% on the marked price of an article, it is sold for Rs. 360. Had the discount not been given, the profit would have been 25%. What is the cost price of the article?

(a) 320
(b) 325
(c) 350
(d) 360

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Q75. There are 90 students in a class, out of which 70% are from village A and others are from village B. The average score of students from village B in a test is 20% more than that from village A. If the average score of all the students is 53, then what is the average score of the students from village B?

(a) 50
(b) 60
(c) 54
(d) 64

GENERAL AWARENESS

Q76. Who is the director of the film 'PM Narendra Modi'?

(a) Tigmanshu Dhulia
(b) Hansal Mehta
(c) Omung Kumar
(d) Rakeysh Omprakash Mehra

Q77. Who among the following is the author of 'Kamayani', the epic poem that is considered as one of the greatest literary works in Hindi?

(a) Jaishankar Prasad
(b) Mohan Rakesh
(c) Premchand
(d) Ramdhari Singh Dinkar

Q78. Panchavati, a key part of the Valmiki Ramayana is located in which state of India?

(a) Uttarakhand
(b) Maharashtra
(c) Tamil Nadu
(d) Uttar Pradesh

Q79. Which of the following states shares the longest boundary with China?

(a) Arunachal Pradesh
(b) Himachal Pradesh
(c) Uttarakhand
(d) Sikkim

Q80. Which of the following metals has an ore named Galena?

(a) Nickel
(b) Iron
(c) Lead
(d) Copper

Q81. Which of the following political parties was NOT an ally of the BJP-led NDA in 2019 Lok Sabha elections?

(a) AIADMK
(b) Asom Gana Parishad
(c) Shiromani Akali Dal
(d) DMK

Q82. In June 2019, PepsiCo India proposed to invest $70 million to build a food manufacturing plant in:

(a) Madhya Pradesh
(b) Gujarat
(c) Maharashtra
(d) Uttar Pradesh

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Q83. The Bhupen Hazarika Setu, also called Dhola–Sadiya Bridge which connects Assam and _____.

(a) Meghalaya
(b) Sikkim
(c) West Bengal
(d) Arunachal Pradesh

Q84. During the passage of the Royal Titles Act 1876, the office of the British Prime Minister was occupied by:

(a) John Russell
(b) William Ewart Gladstone
(c) Arthur Balfour
(d) Benjamin Disraeli

Q85. In which year was Google incorporated as a private company?

(a) 2002
(b) 1998
(c) 2005
(d) 2000

Q86. On the occasion of 'World No Tobacco Day' on 31 May, which state banned e-cigarettes?

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

Q87. Which of the following states separates Nepal from Bhutan?

(a) Sikkim
(b) Bihar
(c) Assam
(d) Odisha

Q88. In the new Union cabinet of 2019, the portfolio of Micro, Small and Medium Enterprises was allocated to:

(a) Ramvilas Paswan
(b) Narendra Singh Tomar
(c) Nitin Jairam Gadkari
(d) Sadananda Gowda

Q89. The joint process of vapourisation and condensation is called:

(a) Crystallisation
(b) Sublimation
(c) Distillation
(d) Chromatography

Q90. Who was the captain of the Indian women's Kabaddi team that won silver at the 2018 Asian Games?

(a) Shalini Pathak
(b) Ritu Negi
(c) Manpreet Kaur
(d) Payel Chowdhury

Q91. What is the full form of GSTIN in relation to GST?

(a) Goods and Services Taxation Income Number
(b) Goods and Services Tax Identification Note
(c) Goods and Services Tax Information Number
(d) Goods and Services Tax Identification Number

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Q92. A region of computer memory where frequently accessed data can be stored for rapid access is called:

(a) Cache
(b) Token
(c) Cookie
(d) Plug-in

Q93. Paan Singh Tomar, who was a seven-time national champion, was associated with which of the following sports?

(a) Shotput
(b) Steeplechase
(c) Swimming
(d) Hockey

Q94. Who among the following won a silver medal in the equestrian event at the 2018 Asian Games?

(a) Rakesh Kumar
(b) Jitender Singh
(c) Ashish Malik
(d) Fouaad Mirza

Q95. Who among the following is the 2019 winner of the $100,000 Nine Dots Prize?

(a) Annie Zaidi
(b) Chetan Bhagat
(c) Arundhati Roy
(d) Shashi Tharoor

Q96. Which of the following terms refers to the running down or payment of a loan in instalments?

(a) Credit creation
(b) Discounted cashflow
(c) Amortisation
(d) Backwardation

Q97. Which of the following are the highest-frequency electro magnetic waves?

(a) Microwaves
(b) Radio Waves
(c) Ultraviolet Rays
(d) Gamma Rays

Q98. Rani-ki-Vav (the Queen’s Stepwell), which is in the UNESCO World Heritage List, is located in:

(a) Gujarat
(b) Madhya Pradesh
(c) Uttar Pradesh
(d) Rajasthan

Q99. Who among the following was the first Sayyid ruler of Delhi?

(a) Khizr Khan
(b) Mubārak Shah
(c) Muhammad Shah
(d) Alam Shah

Q100. In May 2019, the Government of India approved a new scheme which assures minimum monthly pension to all shopkeepers, retail traders and self employed persons after attaining the age of 60 years. How much is the pension amount?

(a) Rs. 5,000
(b) Rs. 3,000
(c) Rs. 7,000
(d) Rs. 10,000

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ANSWER KEY

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

SOLUTIONS

Q1. Answer: (a) The Public Works Department has propose

The correct answer is option 1) i.e. The Public Works Department has proposed.

• The given sentence is in present perfect tense and in present perfect tense third form of verb is used.

• Hence, 'proposed' will be used in place of 'propose'.

• So, the correct sentence will be: The Public Works Department has proposed to construct an elevated corridor which will run parallel to the National highway.

Q2. Answer: (c) undergoing

The correct answer is option 3) i.e. undergoing.

• undergo means experience or be subjected to something. It fits the context of the given sentence and sentence means that Elizabeth tower is subjected to renovation i.e. renovation is going on there.

• undertake: promise to do a particular thing.

• undermine: lessen the effectiveness, power, or ability of something.

Q3. Answer: (b) needs

The correct answer is option 4) i.e needs.

Key Points

• Reading the above sentence we find that it is in the present tense.

• Therefore the option should be filled with a present tense verb.

• Out of the given options only needs is the only present tense verb.

• 'Was' and 'Has' denote the past continuous tense and present perfect tense respectively and 'Is' needed is not appropriate here as it gives rise to active-passive conflict. We need a sentence in the active voice here, not one in a passive voice.

• Therefore needs is the correct answer.

Additional Information

• Let's see some more examples of present tenses:

• Bill writes the letters.

• Lisa has been living in this area for twenty years.

• I write articles on different topics.

Q4. Answer: (a) For

The correct answer is option 1) i.e. For.

• For is used to show the duration of time.

• In the given sentence it is being said that the structure needed maintenance for many years.

• All other words do not fit in the context of the sentence.

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Q5. Answer: (d) of

The correct answer is option 4) i.e of.

• 'of' is used to show the possession or to show that something belongs to something or someone.

• In the given sentence it is being showed that hands and numbers belong to the clock.

• Hence, 'of' will be used here.

Q6. Answer: (b) discovered

The correct answer is option 2) i.e. discovered.

• discover means to find out something that already exists. It fits in the context of the given sentence. Hence, it will be used in the blank.

• invent: create or design (something that has not existed before).

• impart:

1. to give, convey, or grant from or as if from a store. For example- her experience imparted authority to her word/ the flavor imparted by herbs.

2. to communicate the knowledge of : DISCLOSE. For example- imparted my scheme to no one

• conceal: to hide something.

Q7. Answer: (a) The lawn has been mowed by the gardener.

The correct answer is option 1) i.e. the lawn has been mowed by the gardener.

• The given sentence is in the present perfect tense and while making the passive voice of perfect tenses, 'been' is used.

• While making the passive voice the object of the sentence is made the subject and vice versa.

• All these conditions are satisfied by option 1) and it will be the correct answer.

Q8. Answer: (c) needn’t have bought

The correct answer is option 3) i.e. needn't have bought.

• The given sentence implies that the necklace is very expensive and you should not have bought it. Only option 3) coveys the same sense. Hence, it is the correct answer.

• Option 2) is wrong because 'to buying' has been used here which is wrong.

• Option 4) too, does not make sense.

Q9. Answer: (a) overcome

The correct answer is option 1) i.e. overcome.

• overcome: succeed in dealing with (a problem or difficulty). It fits in the context of the given sentence, hence, it will be the correct answer.

• overview: give a general review or summary of.

• overvalue: overestimate the importance of.

Q10. Answer: (d) assurence

The correct answer is option 4).

Key Points

• The word "assurence" is incorrectly spelt. The correct spelling is 'assurance'. It means a positive declaration intended to give confidence; a promise.

• Let us look at the meanings of all the words:

• Assure (verb): to give someone confidence or certainty about something.

• Example: "I assure you that I will be there on time."

• Assuredly (adverb): without a doubt; certainly.

• Example: "I am assuredly going to win this race."

• Assurable (adjective): able to be assured.

• Example: "The outcome of the election is not assurable at this point."

• Assurance (noun): a promise or guarantee that something will happen.

• Example: "The insurance company gave us an assurance that they would cover our losses."

• Hence option 4 is correct.

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Q11. Answer: (c) choir

• The correct answer is Option 3.
• The meaning of the given words:
• Band: A group of musicians.
• Troop: A collection of people, a number; a multitude.
• Choir: group of singers in a church
• Host: One who receives or entertains a guest.

Q12. Answer: (a) Mrs. Gupta asked me why those boys were standing in the sun.

The correct answer is Option 1.
• Since this is an interrogative sentence, 'said to' will be converted into asked.
• present tense will be converted into past tense and interrogative sentence will be converted into assertive sentence.
• And 'these' will be converted into 'those'.
• All these conditions are satisfied in the option 1), hence, it is the correct answer.

Q13. Answer: (d) BACD

• The correct answer is Option 4 in which the sentences are arranged in a correct sequence.
• The sentence after rearrangement is 'Not all prisoners are hardcore criminals most of them are in jail because of their circumstances. So, they deserve a chance to rehabilitate themselves. Therefore, learning a trade would help them reintegrate with society'.

Q14. Answer: (d) BADC

The correct answer is Option 4. i.e. BADC in which the sentences are arranged in a correct sequence.

Q15. Answer: (b) to whom

• The correct answer is Option 2.
• The error lies in wrong usage of the preposition 'to'. The correct preposition to be used here is 'with'.

Q16. Answer: (c) lengthy

• The correct answer is Option 3.
• The meaning of the given words:
• Succinct: Brief and to the point.
• Curt: Brief or terse, short or concise
• Pithy: Concise and meaningful.
• Lengthy: Having length, overextended.
• Terse: Brief, concise, to the point.
• Therefore, the correct answer is Option 3 'lengthy'. All other options are synonyms of the given word.

Q17. Answer: (c) such experience as

• The correct answer is Option 3.
• In the above sentence, it is talking about an incident which has already been taken place. So we can mention the incident as 'such' which is in option 3.

Q18. Answer: (b) ordinary

• The correct answer is Option 2.
• The meaning of the given word:
• Exotic: Foreign, non-native to the ecosystem, especially in an exciting way.
• Therefore, among the given options the antonym for the given word would be 'ordinary'.

Q19. Answer: (b) rear

The correct answer is "rear".

Key Points

• Hind is an adjective that means situated at the back or rear of something.
• For example, “The hind legs of a horse are stronger than the front legs”.
• Rear means situated at the back or behind.

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• From the above explanation it is clear the both words are synonyms to each other.

Therefore, the correct answer is "Option 2".

Additional Information

• Option 1 (near) means close to or not far away in distance, time, or degree.

• Option 3 (front) means situated at or near the front.

• Option 4 (first) means coming before all others in time or order; earliest; 1st.

Q20. Answer: (c) Berrel

The correct answer is Option 3.

Key Points

• The correct spelling of the word 'berrel' is 'barrel' which means a round vessel or cask.

• Meaning of the other words present in the option are:

• Barrier: A barrier is something such as a rule, law, or policy that makes it difficult or impossible for something to happen or be achieved.

• Berry: Berries are small, round fruit that grows on a bush or a tree.

• Barren: A barren landscape is dry and bare, and has very few plants and no trees.

Q21. Answer: (b) to discuss private affairs in public

The correct answer is option 2 i.e. to discuss private affairs in public.

The meaning of the given idiom is.

to air dirty linen in public- discussing or arguing about unpleasant or private things in front of other people.

So, the chosen option is correct.

Q22. Answer: (c) implication

The correct answer is option 3 i.e. implication.

innuendo- an allusive or oblique remark or hint, typically a suggestive or disparaging one.

verification- the process of establishing the truth, accuracy, or validity of something.

evidence- the available body of facts or information indicating whether a belief or proposition is true or valid.

implication- the conclusion that can be drawn from something although it is not explicitly stated.

proof- evidence or argument establishing a fact or the truth of a statement.

Two bolden part is the synonym of each other.

Q23. Answer: (a) indefatigable

The correct answer is option 1 i.e. indefatigable.

indefatigable- (of a person or their efforts) persisting tirelessly.

indelible- (of ink or a pen) making marks that cannot be removed.

infallible- incapable of making mistakes or being wrong.

inevitable- certain to happen; unavoidable.

Q24. Answer: (d) impoverished

The correct answer is- impoverished.

Key Points

• immaculate- perfectly clean, neat, or tidy.

• intelligent- having or showing intelligence, especially of a high level.

• impeccable- in accordance with the highest standards; faultless.

• impoverished- (of a person or area) made poor.

• It is clearly said in the given sentence that he fought all odds that he took birth in the poor family.

Only option 4 fits the sentence grammatically and contextually.

Q25. Answer: (d) admit defeat

The correct answer is option is 4 i.e. admit defeat.

The meaning of the given idiom is -

(of boxers or their seconds) throw a towel (or sponge) into the ring as a token of defeat.

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Q26. Answer: (d) Joints

Cardiologist is a doctor who treats ailments related to heart

Similarly,

Chiropractor is a healthcare professional whose practice involves the treatment of ailments related to joints.

Hence, 'Chiropractor' is related to Joints'.

Q27. Answer: (d) Word : Sentence

A bunch of Spokes makes a wheel.

Similarly,

A group of words makes a sentence.

Hence, “word : sentence” is the correct answer.

Q28. Answer: (b) [figure]

Given series:

The shapes in images A and C are combined to create the shape in B. Also, in B, we can see that the shape in C is inserted inside the shape in A, i.e., A is the outer figure and C is the inner figure.

Note that the outer figure is not the same as the inner figure.

Similarly,

when we combine C and E, we get the shape in D. Here C is the outer figure and E is the inner figure.

Now, to maintain the pattern of the series, the next image must be a combination of the shape in E (circle) and another shape (which is not a circle) such that the shape in A will form the outer figure.

Hence, the image in option 2 is the correct answer.

Q29. Answer: (d) 4162238321625

The pattern followed here is:

Square of positional values of Vowels is taken and for consonants, positional value is doubled.

Similarly,

Hence, 4162238321625 is the correct answer.

Q30. Answer: (d) Carpet

Suitcase, purse, and bag are examples of utility bags whereas carpet is not.

Hence, “carpet” is the correct answer.

Q31. Answer: (b) [figure]

The Venn diagram that best illustrates the relationship between raw material, labourers and machines:

Hence, the figure in option 2 is the correct answer.

Q32. Answer: (d) [figure]

In the question figure, the small arrow is pointing towards the right. Thus, in the answer figure, it should be pointing towards the left.

Therefore, options 2 and 3 get eliminated.

Also, the large arrow in the question figure is pointing downwards. Since the mirror is placed at the right of the question figure, there will be no change in the direction of this arrow.

Therefore, option 1 also gets eliminated.

Hence, the figure in option 4 is the correct answer.

Q33. Answer: (a) [figure]

Given below is the figure in which the question figure is embedded.

Hence, the figure in option 1 is the correct answer.

Q34. Answer: (d) Only conclusions I and III follow.

The least possible Venn diagram is shown below:

I. Some directors are poems → True (as some poems are directors)

II. Some singers are essays → False (it is possible but not definite).

III. Some singers are poems → True (Some poems are directors and All directors are singers. This would mean that some poems are singers.)

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Note: Some A are B => Some B are A.

Hence, “only conclusions I and III follow” is the correct answer.

Q35. Answer: (d) 2

If two elements are the same on two different positions of the same dice, then the remaining elements visible on that dice are opposite to each other i.e. 2 will be opposite to 4.

Alternately,

The faces containing the numbers 1 and 5 are adjacent to the face containing 2 as well as the face containing 4.

Therefore, the face containing 2 is opposite to the face having 4.

Hence, “2” is the correct answer.

Q36. Answer: (a) 60

Let the number of notes of each denomination be ‘x’.

Total number of notes with Rahul = x + x + x = 3x

Therefore, total amount with Rahul = 2x + 5x + 10x = 17x

Thus, we have 17x = 340 and x = 20

Therefore, total number of notes is 20 × 3 = 60

Hence, 60 is the correct answer.

Q37. Answer: (c) (7, 8, 114)

The pattern followed here is:

(5, 2, 30) → $(5)^2 + (2)^2 + 1 = 25 + 4 + 1 = 30$

Similarly,

1) (4, 3, 28) → $(4)^2 + (3)^2 + 1 = 16 + 9 + 1 = 26 \neq 28$

2) (5, 1, 29) → $(5)^2 + (1)^2 + 1 = 25 + 1 + 1 = 27 \neq 29$

3) (7, 8, 114) → $(7)^2 + (8)^2 + 1 = 49 + 64 + 1 = 114$

4) (9, 2, 87) → $(9)^2 + (2)^2 + 1 = 81 + 4 + 1 = 86 \neq 87$

Hence, “(7, 8, 114)” is the correct answer.

Q38. Answer: (c) dcbac

1) abcbadb - abdaacb - bbdbacb → doesn’t follow any pattern

2) abdbacb - abdaacb - bbdbacb → doesn’t follow any pattern

3) abdbacb - abdbacb - abdbacb → follows a pattern i.e. abdbacb

4) ababacb - abdbacb - cbdbadb → doesn’t follow any pattern

Hence, “dcbac” is the correct answer.

Q39. Answer: (c) 7298

The pattern is as follows:

1) 9368 = 9 × 8 = 72 → 72 ÷ 2 = 36

2) 4147 = 4 × 7 = 28 → 28 ÷ 2 = 14

3) 7298 = 7 × 8 = 56 → 56 ÷ 2 = 28 ≠ 29

4) 8205 = 8 × 5 = 40 → 40 ÷ 2 = 20

Hence, “7298” is the correct answer.

Q40. Answer: (b) × and ÷

1) – and ÷

Given statement: 24 ÷ 2 + 13 – 54 × 2 = 34

On interchanging the above signs

24 – 2 + 13 ÷ 54 × 2

= 24 – 2 + 0.24 × 2

= 24 – 2 + 0.48

= 24.48 – 2 = 22.48 ≠ 34

2) × and ÷

Given statements: 24 ÷ 2 + 13 – 54 × 2 = 34

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On interchanging the above signs

24 × 2 + 13 – 54 ÷ 2

= 24 × 2 + 13 – 27

= 48 + 13 – 27

= 61 – 27 = 34

3) + and ×

Given statements: 24 ÷ 2 + 13 – 54 × 2 = 34

On interchanging the above signs

24 ÷ 2 × 13 – 54 + 2

= 12 × 13 – 54 + 2

= 156 – 54 + 2

= 158 – 54 = 104 ≠ 34

4) – and ×

Given statements: 24 ÷ 2 + 13 – 54 × 2 = 34

On interchanging the above signs

24 ÷ 2 + 13 × 54 − 2

= 12 + 13 × 54 – 2

= 12 + 702 – 2

= 714 – 2 = 712 ≠ 34

Hence, “× and ÷” is the correct answer.

Q41. Answer: (b) 671

The pattern followed here is:

The next number is the sum of its previous number and the square of a prime number. The consecutive prime numbers are in increasing order.

Hence, “671” is the correct answer.

Q42. Answer: (a) 13

The pattern followed here is:

The sum of squares of both the digits is written on the right side.

54 : 41 = $(5)^2 + (4)^2 = 25 + 16 = 41$

Similarly,

32 : ? = $(3)^2 + (2)^2 = 9 + 4 = 13$

Hence, “13” is the correct answer.

Q43. Answer: (a) Grand-daughter

Using the symbols in the below table, we can draw the following family tree:

1) M has two children and he is the son of E.

2) E is the father-in-law of H

3) The family has 5 members.

4) H has only one son.

5) Y is not the grand-daughter of E.

Hence, X is the grand-daughter of E.

Q44. Answer: (a) [figure]

When we unfold the paper, we get the following figure:

Hence, the figure in option 1 is the correct answer.

Q45. Answer: (d) IRUEFVLBVMLK

The pattern followed here is:

For Vowels: Positional value of vowel - 3

For Consonants: Positional value of consonant - 7

Similarly,

Hence, “IRUEFVLBVMLK” is the correct answer.

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Q46. Answer: (d) GSVE

The pattern followed here is:

Difference of 4 between alternate letters

Hence, “GSVE” is the odd one among the given options.

Alternate Solution:

1) CX and GT are reverse letter-pairs (opposite positional values)

2) LO and PK are reverse letter-pairs

3) MN and QJ are reverse letter-pairs

4) VE is a reverse letter-pair but GS is not.

Hence, “GSVE” is the odd one among the given options.

Q47. Answer: (d) (2, 6, 15)

The pattern followed here is:

(4, 10, 23) = (4, (4 × 2 + 2) = 10, (10 × 2 + 3) = 23)

Similarly,

(2, 6, 15) = (2, (2 × 2 + 2) = 6, (6 × 2 + 3) = 15)

Hence, (2, 6, 15) is the correct answer.

Q48. Answer: (d) 13

Given below is a diagram which shows the total number of triangles:

AJB, BCD, DEF, FGH, HIJ, KLM, KLO, MOL, BIE, GCJ, ADG, EHA, ICF.

Hence, there are 13 triangles.

Alternate Solution:

Hence, there are 13 triangles.

Q49. Answer: (c) PLBUKQ

The pattern followed here is:

Similarly,

Hence, “PLBUKQ” is the correct answer.

Q50. Answer: (c) 2, 4, 5, 3, 1

Given below are the steps of a job recruitment process:

2) Application

4) Written test

5) Merit list

3) Job appointment

1) Promotion

Hence, “2, 4, 5, 3, 1” is the correct logical order.

Q51. Answer: (d) 6

For a number to be divisible by 72, it has to be divisible by 8 and 9.

For a number to be divisible by 8, the last three digits of the number should be divisible by 8.

For maximum value of y

y = 9

Now, the number will be

342x 1896

For a number to be divisible by 9 the sum of all the digits should be divisible by 9

=> 3 + 4 + 2 + x + 1 + 8 + 9 + 6 = 33 + x should be divisible by 9.

=> For x = 3, the sum of the digits will be 36 and will be divisible by 9.

Therefore √(9x + y) = √((9 × 3) + 9) = √36 = 6

Q52. Answer: (b) 12 + 3√7

Let O and O’ be the center of the circle and PQ be the length of the common chord.

OP = 15, O’P = 12

PM = ½ PQ (as perpendicular from the center of the circle to a chord bisects the chord)

PM = ½ 18

PM = 9

By applying Pythagoras theorem in PMO:

$OM^2 = OP^2 – PM^2$

$= 15^2 - 9^2$

= 225 – 81

= 144

OM = √144 = 12

By applying Pythagoras theorem in PMO':

$O'M^2 = O'P^2 – PM^2$

$= 12^2 - 9^2$

= 144 – 81

= 63

O'M = √63

O'M = 3√7

OO' = OM + O'M

= 12 + 3√7

Therefore The distance between their centers = 12 + 3√7

Q53. Answer: (c) 24 cm

Let O be the center of the circle, AB be the chord of the largest circle and C be the point on the smaller circle through which the chord passes.

AO = 15 cm and OC = 9 cm

Applying Pythagoras theorem in AOC:

$AC^2 = AO^2 – OC^2$

$AC^2 = 15^2 - 9^2$

$AC^2 = 225 – 81$

$AC^2 = 144$

AC = 12 cm

Now, AB = 2AC (A perpendicular drawn from the center of the circle to the chord bisects the chord)

Therefore AB = 2 × 12 = 24 cm

Q54. Answer: (d) 10

Men1 Days1 Hours1 = Men2 Days2 Hours2

30 × 10 × 8 = 40 × 6 × Hours2

Hours2= 10

40 people should work 10 hours a day to complete the work in 6 days.

Q55. Answer: (c) -20

We have,

$(a + b + c)^2 = 5^2$

$a^2 + b^2 + c^2 + 2(ab + bc + ca) = 25$

$27 + 2(ab + bc + ca) = 25$

$2(ab + bc + ca) = -2$

$(ab + bc + ca) = -1$

Now,

$a^3 + b^3 + c^3 – 3abc = (a + b + c)(a^2 + b^2 + c^2 – ab – bc – ca)$

$a^3 + b^3 + c^3 – 3abc = (a + b + c)[a^2 + b^2 + c^2 –(ab + bc + ca)]$

$125 – 3abc = 5 \times [27 – (-1)]$

$125 – 3abc = 5 \times 28$

$125 – 140 = 3abc$

$3abc = -15$

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abc = -5

Therefore 4abc = - 5 × 4 = -20

Q56. Answer: (a) Rs. 200

Formula used:

Loss = C.P - S.P

S.P = [(100 - Loss%)/100] × C.P

Calculation:

Let the cost price of an article be x

If he sells the article at 8% loss, SP of article = [(100 – 8)/100] x

= 0.92x

If he sells the article at 10.5% profit, SP of article = [(100 + 10.5)/100] x =

= 1.105x

Difference in SP = 1.105x – 0.92x = 0.185x = Rs. 37

=> x = 37/0.185 = 200

Therefore C.P of the article is Rs. 200.

Q57. Answer: (d) 19

$3\sqrt{3}x^3 - 2\sqrt{2}y^3 = (\sqrt{3}x)^3 - (\sqrt{2}y)^3 = (\sqrt{3}x - \sqrt{2}y)(3x^2 + \sqrt{6}xy + 2y^2)$

Comparing with

$3\sqrt{3}x^3 - 2\sqrt{2}y^3 = (\sqrt{3}x - \sqrt{2}y)(Ax^2 - Bxy + Cy^2)$

A = 3, B = -√6, C = 2

$(A^2 + B^2 + C^2) = [3^2 + (-\sqrt{6})^2 + 2^2] = 9 + 6 + 4 = 19$

Q58. Answer: (b) 5

$\cot\theta = 1/(\sqrt{3})$

$\Rightarrow \theta = 60°$

$\Rightarrow (2 - \sin^2\theta)/(1 - \cos^2\theta) + (\text{cosec}^2\theta + \sec\theta)$

$= (2 - \sin^2 60°)/(\sin^2 60°) + (\text{cosec}^2 60° + \sec 60°)$

$= 2/(\sin^2 60°) - (\sin^2 60°)/(\sin^2 60°) + (\text{cosec}^2 60° + \sec 60°)$

$= 2\,\text{cosec}^2\,60° - 1 + \text{cosec}2\,60° + \sec 60$

$= 3\,\text{cosec}^2\,60° + \sec 60° - 1$

$= 3(4/3) + 2 - 1$

$= 4 + 2 - 1$

$= 5$

Q59. Answer: (a) 81/3

Given:

AB = 7 cm, BC = 24 cm and AC = 25 cm

Calculations:

In ΔABC, $AC^2 = AB^2 + BC^2$

ΔABC is right angled triangle at B

Let the coordinates of B = (0, 0)

Coordinates of A = (0, 7) and Coordinates of C = (24, 0)

Centroid (G) of ΔABC = ((0 + 0 + 24)/3, (7 + 0 + 0)/3)

=> Centroid (G) of ΔABC = (8, 7/3)

By distance formula:

$BG^2 = (8 - 0)^2 + (7/3 - 0)^2$

$\Rightarrow BG^2 = 64 + 49/9$

=> BG2 = 625/9

=> BG = 25/3 = 81/3

Therefore BG is 81/3

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Q60. Answer: (a) 3√3

Given: $\cos^2\theta - \sin^2\theta - 3\cos\theta + 2 = 0$

$\Rightarrow \cos^2\theta - (1 - \cos^2\theta) - 3\cos\theta + 2 = 0$

$\Rightarrow \cos^2\theta - 1 + \cos^2\theta - 3\cos\theta + 2 = 0$

$\Rightarrow 2\cos^2\theta - 3\cos\theta + 1 = 0$

$\Rightarrow 2\cos^2\theta - 2\cos\theta - \cos\theta + 1 = 0$

$\Rightarrow 2\cos\theta(\cos\theta - 1) - 1(\cos\theta - 1) = 0$

$\Rightarrow (2\cos\theta - 1)(\cos\theta - 1) = 0$

$\Rightarrow \cos\theta = ½$ or $\cos\theta = 1$

$\cos\theta = 1$ is not possible as $\theta < 90°$

$\Rightarrow \cos\theta = ½$

$\Rightarrow \theta = 60°$

Now, $4\,\text{cosec}\,\theta + \cot\theta = 4\,\text{cosec}60° + \cot60°$

$\Rightarrow 4\,\text{cosec}\,\theta + \cot\theta = 4 \times 2/\sqrt{3} + 1/\sqrt{3} = 9/\sqrt{3} = 3\sqrt{3}$

Q61. Answer: (b) Rs. 2,272

S.I. = PRT/100

$\Rightarrow 2940 = (P \times 10 \times 7/2)/100$

$\Rightarrow$ P = Rs. 8400

Now, C.I. on Rs.8400 for first year at 10% rate of interest = $10/100 \times 8400$ = Rs. 840

$\Rightarrow$ Principal for second year = 8400 + 840 = Rs. 9240

C.I. at 10% for second year = $10/100 \times 9240$ = Rs. 924

$\Rightarrow$ Principal for last 6 months = 8400 + 840 + 924 = Rs. 10164

As we have to calculate interest for six months, rate of interest = 10/2 = 5%

C.I. at 5% for last 6 months = $5/100 \times 10164 = 508.2$

$\Rightarrow$ Total compound interest for 2.5 years = 840 + 924 + 508.2 = Rs. 2272.2 ≈ Rs. 2272

Q62. Answer: (d) 5 : 6

Combined target production of AC Machines In January and April = 60000 + 90000 = 150000

Combined actual production of AC Machine in March and April = 100000 + 80000 = 180000

Therefore The ratio of the combined target production of AC Machines In January and April to that of the combined actual production of AC Machine in March and April is = 150000 : 180000 = 5 : 6

Q63. Answer: (b) 111/9%

The average target production of AC Machines over five months = (60 + 30 + 80 + 90 + 100)/5

= 72

The actual production of AC machines in April exceeds the average target production of AC Machines over five months by 80 – 72 = 8

$\Rightarrow 8/72 \times 100 = 100/9$

= 111/9%

Therefore The actual production of AC machines in April exceeds the average target production of AC Machines over five months by 111/9%

Q64. Answer: (c) 47.6%

The total target production of AC Machines in February, April and May = 30 + 90 + 100 = 220

The total actual production of AC Machines over all the five months = 70 + 50 + 100 + 80 + 120 = 420

Hence,

$(420 - 220)/420 \times 100 = 47.6\%$

Therefore The total target production of AC Machines in February, April and May was what 47.6% less than the total actual production of AC Machines over all the five months

Q65. Answer: (a) March

In January,

$(70 – 60)/60 \times 100 = 16.66\%$

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In February,
(50 – 30)/30 × 100 = 66.66%
In March,
(100 – 80)/80 × 100 = 25%
Therefore In March the actual production of AC Machines was 25% more than the target.

Q66. Answer: (b) A is 40% less than D

Let E = 100
=> D = (100 + 20)/100 × 100 = 120
=> C = (100 – 60)/100 × 120 = 48
=> B = (100 + 25)/100 × 48 = 60
=> A = (100 + 20)/100 × 60 = 72
Checking option 1:
(72 – 48)/72 × 100 = 33.33%
Hence option 1 is incorrect.
Checking option 2:
(120 – 72)/120 × 100 = 40%
Hence option 2 is correct
Checking option 3:
(100 – 72)/72 × 100 = 38.88%
Hence option C is incorrect.
Checking option 4:
It can be clearly seen that D is greater than B.
Hence option D is incorrect.
Therefore Only option 2 is correct

Q67. Answer: (a) 100

Relative speed of fastest train = 54 – 42 = 12 km/hr = 12 × 5/18 = 10/3 m/s.
Let the length of the train be x metre.
As both the trains are running on parallel tracks in same direction, the distance covered by the fastest train will be x + x = 2x
We have,
Distance/Time = Speed
2x/60 = 10/3
x = 100 metre
Therefore The length of each train = 100 metre.

Q68. Answer: (c) cos θ

Given: ((sec θ + tan θ)(1 - sin θ))/(cosec θ (1 + cos θ)(cosec θ - cot θ))
=> (1/cos θ + sin θ /cos θ)(1 - sin θ)/(cosec θ (1 + cos θ)(1/sin θ - cos θ /sin θ))
=> (1 + sin θ)/(cos θ)(1 - sin θ)/(cosec θ (1 + cos θ)((1 - cosθ))/(sin θ))
=> [(1 – sin² θ)/cos θ]/ [cosec θ (1 – cos² θ)/sin θ]
=> (cos²θ/cos θ)/(cosec θ × sin² θ /sin θ)
=> cos θ/cosec θ × sin θ
=> cos θ (cosec θ × sin θ = 1)

Q69. Answer: (c) 2

$a^2 + 4b^2 + 49c^2 + 18 = 2 (2b + 28c – a)$
=> $a^2 + 4b^2 + 49c^2 + 18 = 4b + 56c – 2a$
=> $(a^2 + 2a + 1) + (4b^2 – 4b + 1) + (49c^2 – 56c + 16) = 1 + 1 + 16 – 18$
=> $(a + 1)^2 + (2b – 1)^2 + (7c – 4)^2 = 0$
=> a + 1 = 0, 2b – 1 = 0, 7c – 4 = 0
=> a = -1, b = ½, c = 4/7
(3a + 2b + 7c) = (3 × (-1) + 2 × (1/2) + 7 × (4/7)) = -3 + 1 + 4 = 2

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Q70. Answer: (c) 9 : 16

By Thales' intercept theorem:

DE/BC = AD/AB = AE/AC = 3/5

Hence ratio of sides of ADE and ABC = 3 : 5

=> Ratio of sides of ADE and ABC = $3^2 : 5^2 = 9 : 25$

Let the area of ADE = 9x and area of ABC = 25x

Area of trapezium DECB = Area of ABC – Area of ABC = 25x – 9x = 16x

Therefore Area of ΔADE : Area of quadrilateral DECB = 9x : 16x = 9 : 16

Q71. Answer: (c) 1/90

(3 ÷ {5 - 5 ÷ (6 - 7) × 8 + 9})/(4 + 4 × 4 ÷ 4 of 4)

= (3 ÷ {5 - 5 ÷ (- 1) × 8 + 9})/(4 + 4 × 4 ÷ 16)

= (3 ÷ {5 + 5 × 8 + 9})/(4 + 4 × 1/4)

= (3 ÷ {5 + 40 + 9})/(4 + 1)

= (3 ÷ {54})/5

= (1/18)/5

= 1/90

Q72. Answer: (d) 154

Volume of a right circular cone = $1/3\ \pi r^2 h$

$924 = 1/3\ \pi r^2 \times 18$

$(924 \times 3)/18 = \pi r^2$

$\pi r^2 = 154$

Therefore Area of the base of a right circular cone = $\pi r^2 = 154$

Q73. Answer: (b) 8 : 7

Let the income of A be 2x and income of B be 3x and their expenditure be y and 2y respectively.

90% of B's expenditure is equal to the income of A.

=> 90/100 × 2y = 2x

=> 9y = 10x

=> y = 10x/9

Savings of A = Income – Expenditure

= 2x – y

= 2x – 10x/9

= 8x/9

Savings of B = Income – Expenditure

= 3x – 2y

= 3x – 2 × 10x/9

= 7x/9

Therefore The ratio of the savings of A and B = 8x/9 : 7x/9 = 8 : 7

Q74. Answer: (a) 320

MP × 90/100 = 360

MP = 400

Had the discount not been given the selling price would have been MP.

=> CP × 125/100 = 400

Therefore CP = 320

Q75. Answer: (b) 60

Students from village A = 70/100 × 90 = 63

Students from village B = 90-63 = 27

Let the average score of students from village A = x

=> Average score of students from village B = 1.2 x

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=> Average score of all the students = [63 x + 27(1.2 x)]/90 = 53

=> x = 50 and 1.2 x = 1.2 × 50 = 60

Therefore The average score of the students from village B = 60

Q76. Answer: (c) Omung Kumar

The correct answer is option 3) i.e. Omung Kumar.

• PM Narendra Modi biopic is directed by Omung Kumar.

• The film chronicles Narendra Modi's life and events leading up to his swearing-in ceremony as the Prime Minister of India in 2014.

• Vivek Anand Oberoi essays the role of PM Modi.

Q77. Answer: (a) Jaishankar Prasad

The correct answer is option 1) i.e. Jaishankar Prasad.

• Kamayani is an allegorical epic poem that dramatizes the tradition, culture, and philosophy of India.

• The poem deals with diverse subjects but the central theme is the development of human culture.

• It depicts the interplay of human emotions, thoughts, and actions by taking mythological metaphors.

• The epic poem, written in two volumes and spread over 280 pages, along with other works of Prasad, has been donated to the National archives by his great-grandson.

• One of the greatest of Hindi literary works of Hindi writer and poet Jai Shankar Prasad - is now in the private collection of National Archives in Delhi.

Q78. Answer: (b) Maharashtra

The correct answer is option 2) i.e. Maharashtra.

• Panchavati, or modern-day Nashik, is a city that is entirely in the state of Maharashtra.

• Nashik is located 2,300 ft above sea level.

• It is very crucial among the places visited by Lord Rama as it is where the crucial phase of his exile occurs.

• The entire Aranya Kanda of Ramayana is set in Panchavati.

• Nashik is a city at the foothills of the Western Ghats in the northwest region of Maharashtra along the banks of river Godavari.

Q79. Answer: (a) Arunachal Pradesh

The correct answer is option 1) i.e. Arunachal Pradhesh.

• This state is the most northeastern one of India.

• China and Arunachal Pradesh share a border, which is called McMahon Line.

• Also, the Republic of China claims a large part of the state.

• It is even referred to as "South Tibet" by the People's Republic of China.

• The state also borders Bhutan, Myanmar, Assam, and Nagaland.

Q80. Answer: (c) Lead

The correct answer is option 3 i.e. Lead.

• Galena is the primary ore mineral of lead.

• It is found in ore veins with sphalerite, pyrite, chalcopyrite, tennantite-tetrahedrite, etc. as well as in sedimentary rocks where it may replace carbonate beds or be deposited in pore spaces.

• Galena, also called lead glance, is the natural mineral form of lead (II) sulphide.

• It is the most important ore of lead and an important source of silver.

• The crystals are bright when fresh but often tarnish after exposure to air.

Q81. Answer: (d) DMK

The correct answer is option 4) i.e. DMK.

• DMK was an ally of the United Progressive Alliance headed by The Congress.

• DMK along with UPA won 38 of 39 seats in the Lok Sabha elections in Tamil Nadu in 2019.

• DMK abbreviated as Dravida Munnetra Kazhagam was founded by C N Annadurai in 1949.

• It's party headquarters is located in Chennai, Tamilnadu.

• DMK President - M K Stalin.

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Q82. Answer: (d) Uttar Pradesh

The correct answer is option 4) i.e. Uttar Pradesh.

• Snacks and beverages major PepsiCo India proposed to invest USD 70 million to build a food manufacturing plant in Uttar Pradesh.

• PepsiCo, which entered India in 1989, has grown to become one of the largest MNC food and beverage businesses in the country.

• American global beverage firm, which aims to invest USD 2.1 billion in India by 2022, said the investment is a part of its strategy to expand capacity in the country's growing packaged foods market.

• PepsiCo's global chairman and CEO - Ramon Laguarta

Q83. Answer: (d) Arunachal Pradesh

The correct answer is option 4) i.e. Arunachal Pradesh.

• Prime Minister Narendra Modi inaugurated the Dhola-Sadiya Bridge in Assam, which is India's longest river bridge.

• Spanning 9.15 km, the bridge is built across the Lohit river, which is a tributary of the Brahmaputra.

• It will connect Assam and eastern Arunachal Pradesh. The total length of the project, including the approach roads on each side, is 28.50 km.

• It is 3.55 km longer than the Bandra-Worli sea link in Mumbai. The sea link is the second-longest river bridge in the country.

Q84. Answer: (d) Benjamin Disraeli

The correct answer is option 4) i.e. Benjamin Disraeli.

• The Royal Titles Act 1876 was an Act of the Parliament of the United Kingdom which officially recognized Queen Victoria as “Empress of India”.

• The act was passed with the understanding that the British imperial should be used only in India.

• Thus, the Queen began to use it in her signature in 1878 and in 1893 it appeared on the British coins.

Q85. Answer: (b) 1998

The correct answer is option 2) i.e. 1998.

• Google was incorporated as a privately-held company on September 4, 1998, by founders Larry Page and Sergey Brin.

• The original name for the search engine they collaborated on was BackRub, but they changed it to Google in 1997.

• The name is a play on "googol," which is the mathematical term for the number 1 followed by 100 zeros.

• It represented the seemingly infinite amount of information they were trying to organize.

Q86. Answer: (d) Rajasthan

The correct answer is option 4) i.e. Rajasthan.

• On the occasion of World No Tobacco Day on May 31, Rajasthan Chief Minister Ashok Gehlot banned the sale of e-cigarettes in the state.

• Smoking kills over one million people in India annually and is the fourth leading cause of non-communicable diseases (NCD) such as cancer and heart diseases, which account for 53 per cent of all deaths in India.

• The government also banned the online or offline sales, storage, production, distribution and advertisement of e-cigarettes in the state.

Q87. Answer: (a) Sikkim

The correct answer is option 1) i.e. Sikkim.

Key Points

• Nepal and Bhutan are both landlocked, separated only by Sikkim.

• Both countries are bordered by India and the People's Republic of China.

• India has 15,106.7 Km of land border and a coastline of 7,516.6 Km including island territories.

• The length(in km) of our land borders with neighboring countries is as under:

Bangladesh - 4096.7, China - 3488, Pakistan - 3323, Nepal - 1751, Myanmar -1643, Bhutan - 699, Afghanistan -106.

Q88. Answer: (c) Nitin Jairam Gadkari

The correct answer is option 3) i.e. Nitin Jairam Gadkari.

• Union Minister - Shri Nitin Jairam Gadkari

• Minister of State - Shri Pratap Chandra Sarangi

• In the manufacturing sector:

• Micro Enterprises Does not exceed twenty-five lakh rupees
• Small Enterprises More than twenty-five lakh rupees but does not exceed five crore rupees
• Medium Enterprises More than five crore rupees but does not exceed ten crore rupees.
• In services sector:
• Micro Enterprises Does not exceed ten lakh rupees
• Small Enterprises More than ten lakh rupees but does not exceed two crore rupees
• Medium Enterprises More than two crore rupees but does not exceed five crore rupees

Q89. Answer: (c) Distillation

The correct answer is option 3) i.e. Distillation.

Key Points

• Distillation is a process involving the conversion of a liquid into a vapor that is subsequently condensed back to liquid form.
• In distillation both vaporization and Condensation take place.
• Distillation is used in the separation of two or more liquids having different boiling points, as in the separation of gasoline, kerosene, and lubricating oil from crude oil.
• Vaporization is the conversion of a substance from the liquid or solid phase into the gaseous (vapor) phase.
• Condensation is the deposition of a liquid or a solid from its vapor, generally upon a surface that is cooler than the adjacent gas.
• Sublimation is the transition of a substance directly from the solid to the gas state, without passing through the liquid state.
• Crystallization is the (natural or artificial) process by which solid forms, where the atoms or molecules are highly organized into a structure known as a crystal.
• Chromatography is a technique for the separation of a mixture by passing it in solution or suspension through a medium in which the components move at different rates.

Q90. Answer: (d) Payel Chowdhury

The correct answer is option 4) Payel Chowdury.

• Payel chowdury was the Captain of the Indian Women's Kabbadi team.
• India women lost 24-27 to Iran in the final of women's kabaddi in Jakarta.
• This is the first time since 1990 that India have not won a gold medal in kabaddi at the Asian Games.
• Their silver medal came after the men's kabaddi team settled for a bronze for the first time since kabaddi was included in the multi-sport event.

Q91. Answer: (d) Goods and Services Tax Identification Number

The correct answer is option 4) i.e. Goods and Services Tax Identification Number.

• GSTIN or Goods and Services Tax Identification Number is a unique 15-digit number
• In this, the first two digits denote the state code while the next 10 digits denote the PAN of business entity/proprietor.
• The 14th digit is "Z" by default while the last digit is the check code (can be a number or an alphabet).

Q92. Answer: (a) Cache

The correct answer is option 1) i.e. Cache.

Key Points

• The basic purpose of cache memory is to store program instructions that are frequently re-referenced by software during operation.
• Fast access to these instructions increases the overall speed of the software program.
• Cache memory is not associated with ROM, rather it is called as CPU or Random access memory which a computer microprocessor can access more quickly than a regular RAM.
• This memory is typically integrated directly with the CPU chip or placed on a separate chip that has a separate bus interconnect with the CPU.

Q93. Answer: (b) Steeplechase

The correct answer is option 2) i.e. Steeplechase.

• Paan Singh Tomar (1932 – October 1, 1981) was an Indian athlete and a seven-time national steeplechase champion during the 1950s and 1960s.
• He represented India at the 1958 Asian Games in Tokyo, Japan.
• Tomar also served in the Indian Army.
• After premature retirement from the army he settled back in his native village. Later he gained notoriety as a Chambal Valley

dacoit.

• A biopic, Paan Singh Tomar, was released in 2012 to much critical acclaim. It was written by Sanjay Chouhan, directed by Tigmanshu Dhulia and starred Irrfan Khan as Paan Singh Tomar and Mahie Gill as his wife.

Q94. Answer: (d) Fouaad Mirza

The correct answer is option 4) i.e. Fouaad Mirza.

• India's Fouaad Mirza won a silver medal at the Equestrian Jumping Final at the Asian Games 2018 in Jakarta.

• His valiant effort also helped the Indian team bag silver in the same event.

• Mirza scored 26.40 points behind Japanese gold medallist Yoshiaka Oiwa, who scored 22.70. China's Alex Tian Hua finished third with 27.10 points.

• Mirza became the first Indian to win an Asian Games individual medal in the equestrian event in 36 years.

• Raghubir Singh, Ghulam Mohammed Khan, and Prahlad Singh had won the gold, silver and bronze in the 1982 Asian Games in Delhi.

Q95. Answer: (a) Annie Zaidi

The correct answer is option 1) i.e. Annie Zaidi.

• Indian playwright and journalist Annie Zaidi was announced the winner of the 2019 Nine Dots Prize for her essay 'Bread, Cement, Cactus'.

• The Nine Dots Prize is a book prize for creative thinking that tackles contemporary societal issues.

• Zaidi’s book based on her Nine Dots Prize-winning essay will be published by Cambridge University Press in May 2020.

Q96. Answer: (c) Amortisation

The correct answer is option 3) i.e. Amortisation.

• Amortization can refer to the process of paying off debt over time in regular installments of interest and principal sufficient to repay the loan in full by its maturity date.

• Amortization schedules are used by lenders, such as financial institutions, to present a loan repayment schedule based on a specific maturity date.

• Credit money represents the total amount of money that is owed to banks by borrowers. A bank creates credit money when generating a bank deposit that is a consequence of fulfilling a loan agreement, extending an overdraft facility, or purchasing assets.

• Backwardation is when the current price of an underlying asset is higher than the prices trading in the futures market.

Q97. Answer: (d) Gamma Rays

CONCEPT:

Electromagnetic spectrum:

• It is a collection of a range of different waves in sequential order from radio to gamma electromagnetic waves.

• Frequency (ν) = speed of light (c)/wavelength (λ)

Microwaves:

• They come in the range of 1mm to 1 meter and of the frequency range between 300 MHz to 300 GHz.

• Microwaves are generally used in Radars, Transmission towers, Microwave Ovens, etc.

• These waves are micro not in terms of wavelength but micro from radio waves with greater frequency.

Ultra-Violet:

• UV light is electromagnetic radiation with a wavelength shorter than that of visible light in the range of 10 nm to 400 nm.

• UV can have effects on biological matter causing cancers and a lot more.

• Most of the UV rays are absorbed by the ozone (O3) layer in the upper atmosphere (15-30 km above).

Gamma rays:

• Gamma rays have the littlest wavelengths and therefore the most energy of any wave within the spectrum.

v=c/n

Where v = speed of light in a medium, c = speed of light and n = refractive index in the medium.

Radio waves:

• The lowest frequency portion comes in radio waves generally, has wavelengths range between 1mm to 100km or frequencies between 300 GHz to 3 kHz.

• There are several subcategories in between these waves like AM and FM radio.

EXPLANATION:

• From the above figure, it is clear that Gamma-ray is the highest-frequency electromagnetic waves. Therefore option 4 is correct.

• Gamma rays are produced in the disintegration of radioactive atomic nuclei and in the decay of certain subatomic particles.

• Gamma-ray photons, like their X-ray counterparts, are a form of ionizing radiation; when they pass through matter, they usually deposit their energy by liberating electrons from atoms and molecules.

Q98. Answer: (a) Gujarat

The correct answer is option 1) i.e. Gujarat.

• Rani-ki-Vav, on the banks of the Saraswati River, was initially built as a memorial to a king in the 11th century AD.

• Stepwells are a distinctive form of subterranean water resource and storage systems on the Indian subcontinent and have been constructed since the 3rd millennium BC.

• They evolved over time from what was basically a pit in sandy soil towards elaborate multi-storey works of art and architecture.

• Rani-ki-Vav was built at the height of craftsmens' ability in stepwell construction and the Maru-Gurjara architectural style, reflecting mastery of this complex technique and great beauty of detail and proportions.

• The well is located at the westernmost end of the property and consists of a shaft 10 m in diameter and 30 m deep.

Q99. Answer: (a) Khizr Khan

The correct answer is Khizr khan.

Key Points

• Sayyid dynasty(1414–51), rulers of India's Delhi sultanate as successors of the Tughluq dynasty until displaced by the Afghan Lodīs.

• This family claimed to be sayyids or descendants of the Prophet Muhammad.

• The first Sayyid ruler of Delhi was Khizr Khan (reigned 1414–21), who had been the governor of Punjab.

• Khizr's successor, Mubārak Shah, had some success, but, after the latter's assassination in 1434, his two successors, Muhammad Shah and ?Ālam Shah, proved incapable.

• In 1451 Bahlūl Lodī, already ruler of Punjab seized Delhi and inaugurated the Lodi, the last dynasty of the Delhi sultanate.

Q100. Answer: (b) Rs. 3,000

The correct answer is option 2) i.e. Rs. 3,000

• Under this scheme, all shopkeepers, retail traders and self-employed persons are assured a minimum monthly pension of Rs. 3,000/- month after attaining the age of 60 years.

• All small shopkeepers and self-employed persons as well as the retail traders with GST turnover below Rs. 1.5 crore and age between 18-40 years, can enroll for this scheme.

• The scheme would benefit more than 3 crore small shopkeepers and traders.

• The scheme is based on self-declaration as no documents are required except Aadhaar and bank account.

• Interested persons can enroll themselves through more than 3,25,000 Common Service Centres spread across the country.

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