SSC CHSL Previous Paper 9 (Held On: 4 July 2019 Shift 2) (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. Select the most appropriate antonym of the given word.

URBAN

(a) Modern
(b) Alien
(c) Rural
(d) Casual

Q2. Select the most appropriate passive form of the given sentence.

How much monthly rent did you pay for the house?

(a) How much monthly rent was paid for the house?
(b) How much monthly rent is being paid for the house?
(c) How much monthly rent was being paid for the house?
(d) How much monthly rent is paid for the house?

Q3. Select the most appropriate indirect form of the given sentence.

She said, "Deepak slipped when he was trying to skate."

(a) She said that Deepak slipped when he was trying to skate.
(b) She said that Deepak was slipping when he was trying to skate.
(c) She said that Deepak has slipped when he was trying to skate.
(d) She said that Deepak had slipped when he was trying to skate.

Q4. Fill in the blank with the most appropriate word.

She kept her clothes neatly arranged in the _____.

(a) Warehouse
(b) Wardrobe
(c) Larder
(d) Godown

Q5. Identify the segment which contains the grammatical error.

The soldiers had no choice when to obey the commander.

(a) when to obey
(b) had no choice
(c) The soldiers
(d) the commander

Q6. Select the correctly spelt word.

(a) genaral
(b) guillty
(c) genuine

(d) generus

Q7. Select the most appropriate meaning of the given idiom.

Head in the clouds

(a) to daydream
(b) to be very tall
(c) to be very lazy
(d) to feel giddy

Q8. Select the most appropriate synonym of the given word.

CANDID

(a) sweet
(b) frank
(c) arrogant
(d) cruel

Q9. Identify the segment which contains the grammatical error.

The number of visitors at the fair were much larger than expected.

(a) The number of
(b) than expected
(c) visitors at the fair
(d) were much larger

Q10. Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order.

A. They have no mind of their own.
B. It is misleading to imagine that computers can think like humans.
C. However, they make it possible for people to accumulate thoughts.
D. They cannot do so.

(a) BDAC
(b) BACD
(c) ACBD
(d) ABCD

Q11. Select the most appropriate synonym of the given word.

SANE

(a) foolish
(b) crazy
(c) sensitive
(d) sensible

Q12. Identify the most appropriate option to substitute the underlined segment. If no substitution is required, select No substitution.

Those who have not received the invitation they should leave.

(a) they should left
(b) he should be leaving
(c) No substitution
(d) should leave

Q13. Select the most appropriate antonym of the given word.

MEAGRE

(a) common
(b) scarce
(c) plentiful
(d) minor

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Q14. Select the most appropriate word for the group of words.

A remedy for all diseases

(a) panacea
(b) antidote
(c) antibiotic
(d) patent

Q15. Fill in the blank with the most appropriate word.

The old man has lost his memory. He is suffering from _____.

(a) acacia.
(b) anaesthesia
(c) amnesia
(d) ambrosia

Q16. Select the wrongly spelt word.

(a) Attendance
(b) Affluence
(c) Alliance
(d) Affilate

Q17. Select the most appropriate meaning of the given idiom.

Green thumb

(a) to have talent in gardening
(b) to be envious
(c) to be angry
(d) to have talent in painting

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.

Agatha Christie is a well known writer of mystery books. The (1) ____ in each of her stories involves everyday characters (2) __ we can relate to. This makes her stories more (3) __ because whatever she writes about can happen (4) __ any of us. What makes her stories more interesting (5) ____ the twist at the end.

Q18. Select the most appropriate option to fill in blank number 1

(a) style
(b) plot
(c) title
(d) ending

Q19. Select the most appropriate option to fill in blank number 2

(a) whose
(b) these
(c) those
(d) that

Q20. Select the most appropriate option to fill in blank number 3

(a) sarcastic
(b) realistic
(c) artistic
(d) exotic

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Q21. Select the most appropriate option to fill in blank number 4

(a) to
(b) on
(c) by
(d) from

Q22. Select the most appropriate option to fill in blank number 5

(a) was
(b) were
(c) are
(d) is

Q23. Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order.

A. Children are the most adversely affected.
B. Their eyesight goes weak from their very childhood.
C. Watching television continuously is very harmful for the eyes.
D. This debilitating effect on eyes results in severe headaches as well.

(a) ABDC
(b) CABD
(c) CBDA
(d) ACBD

Q24. Identify the most appropriate option to substitute the underlined segment. If no substitution is required, select No substitution.

No other man in the city is as rich than he is

(a) so much rich as he
(b) No substitution
(c) as rich as he is
(d) more richer than he

Q25. Select the most appropriate word for the group of words.

That which cannot be heard

(a) inaudible
(b) invisible
(c) incorrigible
(d) incredible

GENERAL INTELLIGENCE

Q26. Select the set in which the numbers are related in the same way as are the numbers of the following set.

8, 6, 28

(a) 7, 2, 45
(b) 6, 4, 30
(c) 10, 5, 85
(d) 12, 6, 98

Q27. In a code language, COLD is written as ALHY. How will IRON be written in the same language?

(a) GOKI
(b) GPKI
(c) FOKI
(d) GUKI

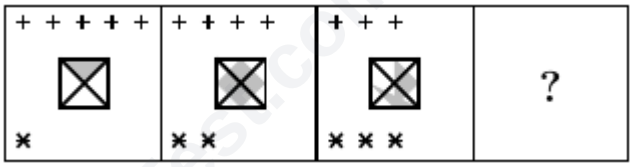
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Q28. Select the correct alternative to indicate the arrangement of the following phrases in a logical and meaningful order.

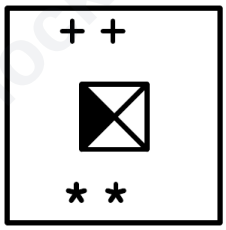
1. world
2. Mumbai
3. Gateway of India
4. Asia
5. Maharashtra
6. India

(a) 3, 2, 5, 6, 1, 4
(b) 3, 2, 6, 5, 4, 1
(c) 3, 2, 5, 4, 6, 1
(d) 3, 2, 5, 6, 4, 1

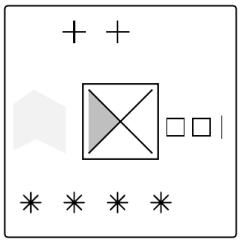
Q29. Select the figure that will come next in the following figure series.



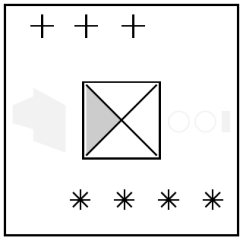
(a)



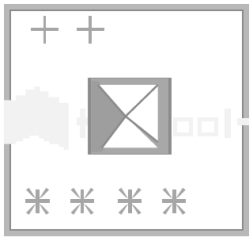
(b)



(c)

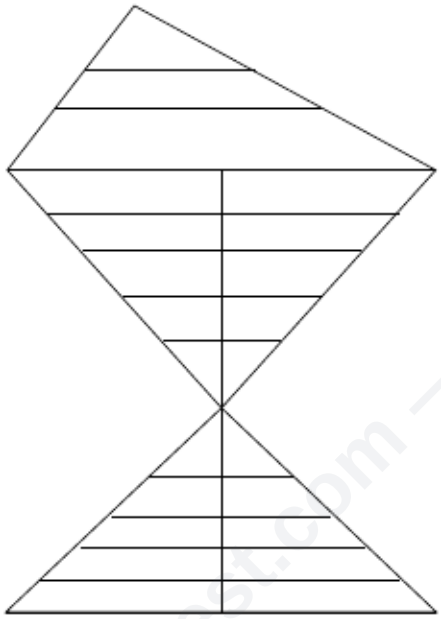


(d)



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Q30. How many triangles are there in the figure given below?



(a) 33
(b) 32
(c) 35
(d) 34

Q31. Which two signs should be interchanged to make the given equation correct?

14 + 4 ÷ 5 - 18 × 2 = 25

(a) ÷ and +
(b) × and ÷
(c) × and -
(d) × and +

Q32. Three of the following four letter-clusters are alike in a certain way and one is different. Pick the odd one out.

(a) DGMJ
(b) PSZV
(c) SVBY
(d) KNTQ

Q33. Which number will replace the question mark (?) in the following series?

7, 11, ?, 31, 47

(a) 29
(b) 55
(c) 5
(d) 19

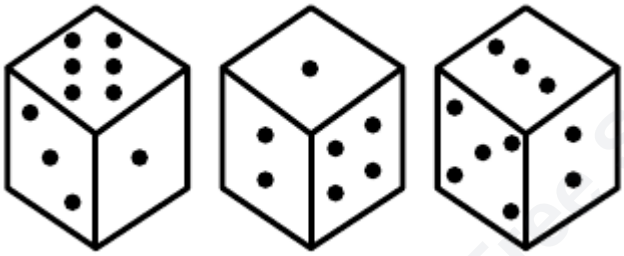
Q34. Select the combination of letters that when sequentially placed in the gaps of the given letter series will complete the series.

U_ _ R P K Q _ U K D _ P K _ R _ K D R _ K _ R

(a) KQPRQUPQ
(b) KDRRUURQ
(c) KDRRQUPQ
(d) KDRRQPPR

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Q35. Three different positions of the same dice, which has one to six dots on its six faces, are shown below. When six dots are at bottom then the number of dots on the top will be:



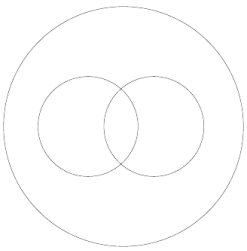
(a) 5
(b) 3
(c) 2
(d) 4

Q36. Rishabh is Namita's only brother. Rishabh's wife, Mridu has a brother Sonu. Illena is Namita's only niece. How is Sonu related to Illena?

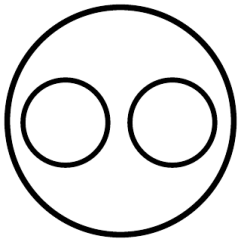
(a) Maternal uncle
(b) Father
(c) Brother
(d) Paternal uncle

Q37. Select the Venn diagram that best illustrates the relationship between the following classes.
Sikkim, Manipur, Imphal

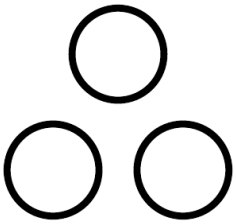
(a)



(b)

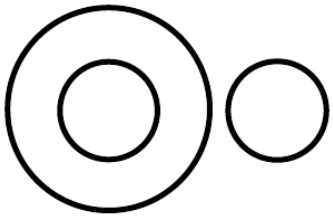


(c)



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(d)



Q38. Three of the following four words are alike in a certain way and one is different. Pick the odd word out.

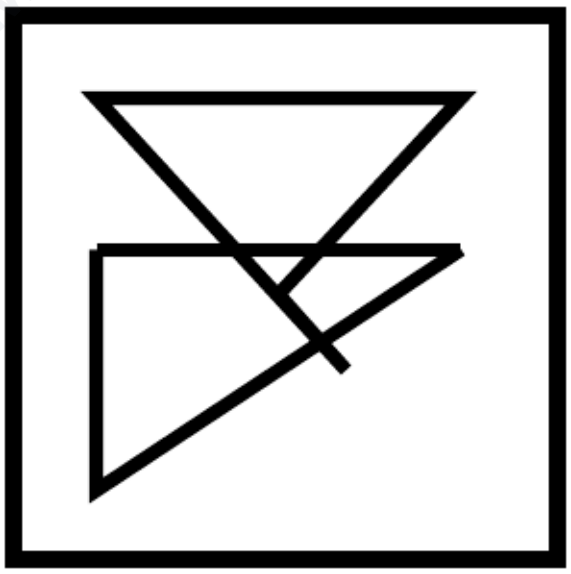
(a) Shirt
(b) Sandals
(c) Slippers
(d) Shoes

Q39. Select the term that will come next in the following series.

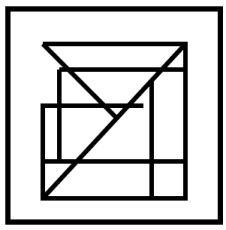
FBA, IGE, LLI, OQM, ?

(a) RVQ
(b) QVQ
(c) RVP
(d) RUP

Q40. Select the option figure which contains figure X embedded in it as its part (Rotation is not allowed)

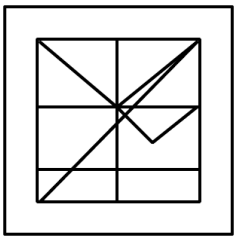


(a)

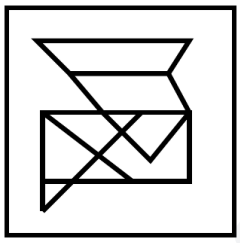


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(b)



(c)



(d)



Q41. In a code language ‘HEDONISM’ is written as ‘QFGJOUKP’. How will ‘PROFITED’ be written as in that language?

(a) HOTSFFVK
(b) HQTRFGVK
(c) GSQRFUK
(d) HQTREGVL

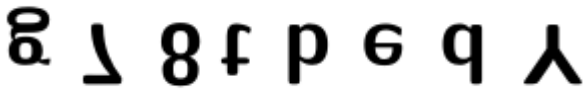
Q42. Two years ago a man was six times as old as his son. In 18 years, he will be twice as old as his son. What are their present ages of the man and his son?

(a) 34 and 9 years
(b) 32 and 7 years
(c) 32 and 13 years
(d) 34 and 7 years

Q43. Select the correct mirror image of the given figure when the mirror is placed to the right of the figure.



(a)



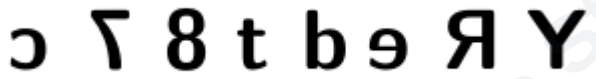
(b)



(c)



(d)



Q44. Select the number-pair in which the two numbers are related in the same way as are the two number of the following number-pair

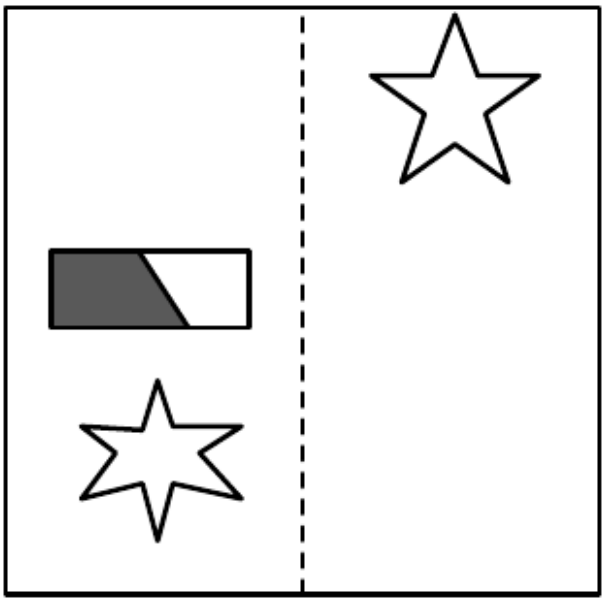
4 : 49

(a) 8 : 144
(b) 6 : 64
(c) 7 : 100
(d) 5 : 82

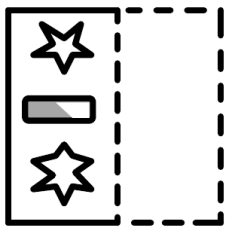
Q45. If 'TRANSFER' is coded as '2018114196518', then how will 'INCLUDED' be coded as in that language?

(a) 91431221454
(b) 18231220454
(c) 91331121454
(d) 81431222353

Q46. A figure of transparent sheet with a pattern is given below. Figure out from among the four options as to how the pattern would appear when the transparent sheet is folded at the dotted line.

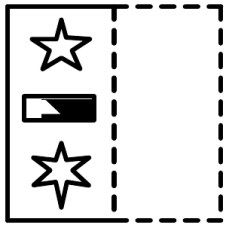


(a)

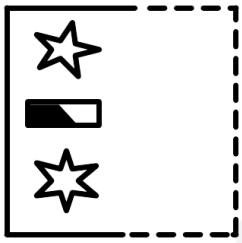


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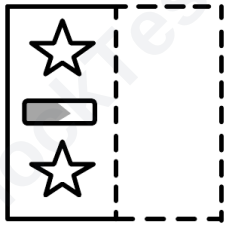
(b)



(c)



(d)



Q47. Which two numbers should be interchanged in the following equation to make it correct?

618 + 37 × 12 - 703 ÷ 14 = 767

(a) 14 and 37
(b) 618 and 14
(c) 703 and 12
(d) 12 and 37

Q48. If ‘E’ is coded as ‘5’ and ‘PEN’ is coded as ‘35’ then how will ‘PAGE’ be coded?

(a) 28
(b) 27
(c) 36
(d) 29

Q49. 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.

Waiter : Serve

(a) Lawyer : Legal
(b) Architect : Fashion
(c) Engineer : Technical
(d) Mechanic : Repair

Q50. 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) 99
(b) 97
(c) 89
(d) 83

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QUANTITATIVE APTITUDE

Q51. A number is increased by 30%, then decreased by 25% and then further increased by 25%. What is the net increase/decrease percent in the number (correct to the nearest integer)?

(a) 22% decrease
(b) 22% increase
(c) 21% decrease
(d) 21% increase

Q52. If a 10-digit number 1220x558y2 is divisible by 88, then the value of (x + y) is:

(a) 9
(b) 7
(c) 15
(d) 11

Q53. 10 years ago, the average age of a family of five members was 38 years. Now, two new members join, whose age difference is 8 years. If the present average age of the family is the same as it was 10 years ago, What is the age (in years) of the new younger member?

(a) 15
(b) 9
(c) 10
(d) 17

Q54. If $(x - 7)^3 + (x - 8)^3 + (x + 6)^3 = 3 (x - 7)(x - 8) (x + 6)$, then what is the value of x?

(a) 6
(b) 8
(c) 10
(d) 3

Q55. If $\cos \theta = 2p/(p^2 + 1)$, then $\sin \theta$ is equal to:

(a) $(p^2 - 1)/(p^2 + 1)$
(b) $2p/(p^2 - 1)$
(c) $(p^2 + 1)/(p^2 - 1)$
(d) $p^2/(p^2 + 1)$

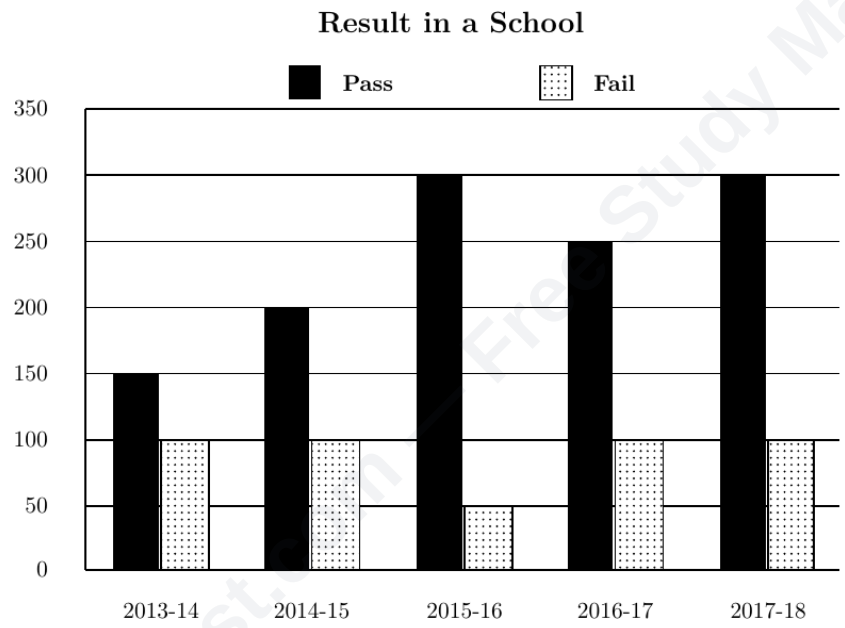
Q56. What is the area of rhombus $(\text{in cm})^2$ whose side is 10 cm and the smaller diagonal is 12 cm?

(a) 120
(b) 192
(c) 96
(d) 50

Directions

Directions: The given Bar Graph presents the results in terms of number of students in school for the five academic years. 2013-2014 to 2017-2018

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Q57. In which year the percentage increase in the total number of students is the highest in comparison to the previous academic year?

(a) 2017 - 2018
(b) 2015 - 2016
(c) 2016 - 2017
(d) 2014 - 2015

Q58. What is the average of failed students in five academic years?

(a) 75
(b) 50
(c) 100
(d) 90

Q59. The difference between the number of students passed and those who failed is the highest in which academic year?

(a) 2015-2016
(b) 2014-2015
(c) 2017-2018
(d) 2016-2017

Q60. What is the approximate parentage of students passed during five academic years (correct to the nearest integer)?

(a) 71%
(b) 78%
(c) 79%
(d) 73%

Q61. The simplified value of 15 of 8 – 6 + [(27 – 3) ÷ 6 - 4] is:

(a) 114
(b) 120
(c) 124
(d) 116

Q62. If $(x - 1/x) = 10$, then $(x^3 - 1/x^3)$ is equal to:

(a) 970
(b) 1000
(c) 1030
(d) 1100

Q63. A, B and C can complete a piece of work in 10, 20 and 60 days respectively. Working together, they can complete the same work in how many days?

(a) 5
(b) 6
(c) 10
(d) 8

Q64. A train covers 360 km at a uniform speed. If the speed had been 10 km/h more, it would have taken 3 hours less for the same journey. What is the speed of the train (in km/h)?

(a) 40
(b) 25
(c) 30
(d) 50

Q65. If $a^2 + b^2 = 88$ and $ab = 6$, $(a > 0, b > 0)$ then what is the value of $(a^3 + b^3)$?

(a) 980
(b) 1180
(c) 820
(d) 1000

Q66. In triangle ABC, D and E are two points on the side AB and AC respectively so that DE || BC and AD/BD = 3/4. The ratio of the area of trapezium DECB to the area of ΔABC is:

(a) 49 : 33
(b) 49 : 40
(c) 40 : 49
(d) 33 : 49

Q67. Rs. 60000 invested at a certain rate for a certain even number of years, compounded annually, grows to Rs. 63,654. To how much amount would it grow if it is invested on compound interrest at the same rate for half the period?

(a) Rs. 61800
(b) Rs. 61809
(c) Rs. 61675
(d) Rs. 61827

Q68. Let ΔABC ∼ ΔQPR and ar (ΔABC) : ar (ΔPQR) = 9 : 4. If AB = 9 cm, BC = 6 cm and AC = 12 cm then QR is equal to:

(a) 8 cm
(b) 12 cm
(c) 9 cm
(d) 16 cm

Q69. There was 29% off on bags. A lady bought a bag and got 12% discount for paying in cash. She paid Rs. 312.40. What is the price tag (in Rs.) on the bag?

(a) 600
(b) 625
(c) 450
(d) 500

Q70. A circle is inscribed in a triangle ABC. It touches sides AB, BC and AC at the points P, Q and R respectively. If BP = 6.5 cm, CQ = 4.5 cm and AR = 5.5 cm, then the perimeter (in cm) of the triangle ΔABC is:

(a) 16.5
(b) 66
(c) 33
(d) 22

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Q71. A man bought 2 articles for Rs. 2650 each. He sold one article at 10% profit and another at 5% profit. The total profit percentage he earned is:

(a) 8%
(b) 8.5%
(c) 7.5%
(d) 10%

Q72. In a ΔABC, the bisectors of angle B and angle C meet at point O within the triangle. If angle A is given, then which among the given options is true?

(a) angle BOC = 90° + (angle A/2)
(b) angle BOC = 180° - (angle A/2)
(c) angle BOC = 90° - (angle A/2)
(d) angle BOC = 180° - (angle A)

Q73. If tan x = cot (65° + 9x), then what is the value of x?

(a) 2.5°
(b) 1.0°
(c) 2.0°
(d) 1.5°

Q74. If x^4 + x^(-4) = 2207, (x > 0) then the value of x + x^(-1) is:

(a) 19
(b) 7
(c) 11
(d) 9

Q75. Two circles of radii 5 cm and 8 cm intersect at the points A and B. If AB = 8 cm and the distance between the centres of two circles is x cm, then the value of x (to the closest integer) is:

(a) 8
(b) 10
(c) 9
(d) 11

GENERAL AWARENESS

Q76. Which of the following instruments is used for the visual examination of eardrum?

(a) Phonograph
(b) Polygraph
(c) Otoscope
(d) Optometer

Q77. The Barabar Caves, the oldest surviving rock-cut caves in India, mostly belong to which of the following periods?

(a) Chola Dynasty
(b) Gupta Empire
(c) Maurya Empire
(d) Chera Dynasty

Q78. Which of the following countries was declared as a malaria-free country in May 2019 by World Health Organization?

(a) India
(b) Nigeria
(c) Madagascar
(d) Argentina

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Q79. Rafael Nadal, one of the top male tennis players in the world hails from which European country?

(a) Spain
(b) Switzerland
(c) Serbia
(d) Austria

Q80. What is the minimum age requirement to become a Member of the Legislative Assembly ?

(a) 32 years
(b) 42 years
(c) 20 years
(d) 25 years

Q81. In which city of India would you find the Swami Vivekananda Airport?

(a) Kanyakumari
(b) Raipur
(c) Ranchi
(d) Durgapur

Q82. Who among the following has the power to promulgate ordinances under Article 123 of the Constitution of India?

(a) The President
(b) The Speaker of the Lok Sabha
(c) The Chairman of the Rajya Sabha
(d) The Attorney-General

Q83. Which one of the following business groups is associated to Carborundum Universal Limited (CUMI), one of the largest abrasive manufacturing companies in India?

(a) Kirloskar Group
(b) Birla Group
(c) Adani Group
(d) Murugappa Group

Q84. In May 2019, who among the following was appointed by the UN Secretary-General as the new Force Commander of the United Nations Mission in South Sudan (UNMISS)?

(a) Lieutenant General Frank Kamanzi
(b) Private Ankush Cheema
(c) Lieutenant General Shailesh Tinaikar
(d) Colonel Amit Gupta

Q85. Which of the following is the largest bone in the human body?

(a) Femur
(b) Incus
(c) Malleus
(d) Stapes

Q86. Which book among the following won the Pulitzer Prize for Fiction 2019?

(a) The Sympathizer
(b) The Overstory
(c) The Underground Railroad
(d) Less

Q87. Albert Einstein was awarded the Nobel Prize in Physics in the year _____.

(a) 1934
(b) 1921
(c) 1924
(d) 1920

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Q88. Who amongst the following established an institution named 'Kalashram' for imparting training in dance and associated disciplines?

(a) Shambhu Maharaj
(b) Pandit Birju Maharaj
(c) Sitara Devi
(d) Lachhu Maharaj

Q89. Bugyals are high altitude meadows and pastures in the Himalayan slopes. In which state would you find them most?

(a) Assam
(b) Tamil Nadu
(c) Sikkim
(d) Uttarakhand

Q90. When is 'International Dance Day' celebrated by the International Theatre Institute (ITI), the main partner for performing arts of UNESCO?

(a) 7th June
(b) 29th April
(c) 23rd March
(d) 8th May

Q91. During the reign of which of the following kings did Chinese traveller Xuanzang visit India?

(a) Harshavardhana
(b) Prabhakara Vardhana
(c) Chandragupta Maurya
(d) Ashoka

Q92. According to Global Peace Index 2019, which one of the following is the most peaceful country?

(a) India
(b) Indonesia
(c) Bhutan
(d) Iceland

Q93. In which of the following states is the Kolleru Lake located?

(a) Kerala
(b) Karnataka
(c) Tamil Nadu
(d) Andhra Pradesh

Q94. Which of the following computers are used in hospitals to measure the heartbeat of patients?

(a) Digital computers
(b) Hybrid computers
(c) Mainframe computers
(d) Analog computers

Q95. Which of the following teams won the UEFA Champions League football trophy at Madrid on 1 June 2019?

(a) Tottenham Hotspur
(b) Manchester United
(c) Liverpool
(d) Real Madrid

Q96. Sanjhi Art is associated to which of the following states of India?

(a) Uttar Pradesh
(b) Rajasthan
(c) West Benga
(d) Gujarat

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Q97. In March 2019, the Reserve Bank of India bought how many USD billions through long-term forex swap auction in a bid to ease liquidity ahead of elections?

(a) USD 5 billion
(b) USD 1 billion
(c) USD 4 billion
(d) USD 2 billion

Q98. With how many states/Union Territories does Uttar Pradesh share its borders?

(a) 7
(b) 8
(c) 9
(d) 6

Q99. Who among the following created the Electronic Discrete Variable Automatic Computer (EDVAC) with a memory to hold both, a stored program as well as data?

(a) Thomas H Flowers
(b) Arthur Samuel
(c) Bletchley Park
(d) John von Neumann

Q100. Where was Khelo India Youth Games 2019 held?

(a) Pune
(b) Ludhiana
(c) Delhi
(d) Noida

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ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) Rural

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

• Urban: relating to a town.
• Rural: relating to a village. Hence, this is the most appropriate antonym of the given word.
• Modern: relating to the present or recent times.
• Alien: belonging to a foreign country.
• Casual: relaxed and unconcerned.

Q2. Answer: (a) How much monthly rent was paid for the house?

The correct answer is option 1) i.e. How much monthly rent was paid for the house?

• While changing the active voice into passive voice the tense remains the same.

• Hence, options 2 and option 4 cannot be the answer.

• Moreover, being is used in continuous tenses, so, option 3) is also wrong.

• Option 1) is correct because it follows all the rules.

Q3. Answer: (a) She said that Deepak slipped when he was trying to skate.

The correct answer is option 1) i.e She said that Deepak slipped when he was trying to skate.

Explanation:

• While changing direct speech into indirect speech change in the tense will not occur when the time clause is mentioned ('when')

• Reporting speech and reported speech are joined with that if the given sentence is a simple sentence.

• These rules are followed in option 1) making it the correct answer.

Additional Information

• In complex sentences, the past simple and past continuous may remain unchanged if the temporal relationship between the events in the clauses is clear from the context. Examples:

• Bill: I was reading a book when I heard the crash.

Bill said that he was reading a book when he heard the crash.

• John: When I got home, I went to bed straight away.

John told me that when he got home he went to bed straight away.

Q4. Answer: (b) Wardrobe

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

• Wardrobe means a large, tall cupboard in which clothes may be hung or stored. This fits in the context of the given sentence. Hence it will be the correct word to fill in the blank.

• Warehouse: a large building where raw materials or manufactured goods may be stored.

• Larder: a room or large cupboard for storing food.

• Godown: a warehouse.

Q5. Answer: (a) when to obey

The correct answer is option 1) i.e. when to obey.

• In the given sentence 'when' will not be used.

• 'But' will be used in place of when to make the sentence contextually and grammatically correct.

• So, the correct sentence will be: The soldiers had no choice but to obey the commander.

Q6. Answer: (c) genuine

The correct answer is Option 3 'genuine' which means authentic, real.

• The correct spelling and meaning of other words:

• General: Normal, representing something by form, group, idea or type.

• Guilty: Responsible for a dishonest act.

• Generous: Noble in behaviour or actions.

Q7. Answer: (a) to daydream

• The correct answer is Option 1.

• The meaning of the given idiom 'HEAD IN THE CLOUDS' is 'Daydreaming or absentminded'.

• Therefore, out of the given options, option 1 i.e. 'to daydream' gives the most appropriate meaning of the given idiom.

Q8. Answer: (b) frank

• The correct answer is Option 2.

• The meaning of the given options:

• Candid: frank, open.

• Sweet: Very pleasing; agreeable.

• Frank: Honest, candid, blunt.

• Arrogant: Having excessive pride in oneself.

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• Cruel: Harsh, severe.
• Therefore, out of given options 'frank' is the most appropriate word.

Q9. Answer: (d) were much larger

• The correct answer is Option 4.
• The error lies in the wrong usage of the Subject-verb agreement.
• Here, the subject is 'number' which is singular must be followed by singular verb 'was' instead of 'were'.
• Therefore, the correct sentence is 'The number of visitors at the fair was much larger than expected'.

Q10. Answer: (a) BDAC

• The correct answer is Option 1.
• The answer does not begin with sentences A & D because they are dependent sentences. In sentence A & D, we do not know what the word 'they' is talking about.
• The answer does not begin with sentence C because a paragraph cannot begin with an adverb.
• Therefore, the first sentence begins with B which says 'it is misleading' which means there is a contradict opinion that computers can think like humans' which is given in sentence D that they cannot do so.
• Sentence A is the third sentence as it is continuing why computers cannot think like humans.
• The concluding opinion is given in sentence C.
• Therefore, the correct sequence BDAC is followed by Option 1.

Q11. Answer: (d) sensible

• The correct answer is Option 4.
• The meaning of the given words:
• Sane: mentally sound, rational, reasonable.
• Foolish: lacking good sense or judgment.
• Crazy: insane, lunatic.
• Sensitive: tender, easily offended, upset or hurt.
• Sensible: Perceptible by mind, reasonable.
• Therefore, out of given options, 'sensible' is the most appropriate word.

Q12. Answer: (d) should leave

• The correct answer is Option 4.
• In the given sentence, 'those' itself indicates the people who have not received the invitation, there is no need of using the pronoun again in the sentence as it becomes superfluous.
• Therefore, the correct sentence is 'Those who have not received the invitation should leave'.

Q13. Answer: (c) plentiful

• The correct answer is Option 3.
• The meaning of the given words:
• Meagre: Having little, deficient or inferior in amount.
• Common: Usual, simple, ordinary.
• Scarce: rare, insufficient.
• Plentiful: Existing in large number, ample.
• Minor: of little significance.
• Therefore, out of given options, 'plentiful' is the antonym of the given words. All other words form synonym of the given word.

Q14. Answer: (a) panacea

• The correct answer is option 1.
• The meaning of the given words:
• Panacea: A remedy to cure all diseases.
• Antidote: A remedy to counteract a poison.
• Antibiotic: substance that destroys or inhibits bacteria
• Patent: A declaration issued by a government to an inventor.
• Therefore, it is obvious that the word 'panacea' gives the most appropriate meaning of the given context.

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Q15. Answer: (c) amnesia

• The correct answer is Option 3.

• As the given sentence is talking about the suffering of an old man & his loss of memory, so the blank should contain the name of a disease.

• The meaning of the given options:

• Acacia: A shrub or tree of the tribe acacieae.

• Anaesthesia: A method preventing sensation.

• Amnesia: loss of memory.

• Ambrosia: Any food with an especially delicious flavor or fragrance.

• Therefore, the most suitable word in the blank is 'Amnesia' which means loss of memory.

Q16. Answer: (d) Affilate

The correct answer is Option 4

Key Points

• The correct spelling is 'Affiliate' which means 'someone or something associated with a larger, related organization'.

• The meaning of the other words:

• Attendance: Count of individuals, frequency of one's presence.

• Affluence: An abundant flow or supply.

• Alliance: The state of uniting.

Hint

• Mnemonics (Memory Aids) for affiliation

look at the letters AFF+ATION... this word rhymes like AFFecTION..... SO YOU JOIN a group or you ASSOCIATE with only people whom you like or you have some kind of affection FOR THEM.

• Mnemonics (Memory Aids) for affluence

sounds like influence. Rich people generally have influence over others, hence affluence can be related to richness. afFLUENCE-fluence resembles something fluent in our mind. someone fluent in something will talk much to show their skill, which is their wealth.

Q17. Answer: (a) to have talent in gardening

• The correct answer is Option 1.

• The meaning of the given idiom 'Green thumb' means to have the ability to grow plants well.

• Therefore, option 1 gives the appropriate meaning of the given idiom.

Q18. Answer: (b) plot

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

• Plot means the main events of a play, novel, film, or similar work, devised and presented by the writer as an interrelated sequence.

• Since the given passage talks about a writer and his books, the word 'plot' is the most appropriate word to be used in the blank.

• Other words do not fit in the context of the given sentence, hence, they will not be used.

Q19. Answer: (d) that

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

• In the given sentence we need a relative pronoun for 'characters'.

• In the given sentence we have only two relative pronouns i.e. whose and that.

• whose is used to show possession and that is used to refer a noun, hence, 'that' will be used here to refer to 'characters'

Q20. Answer: (b) realistic

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

• The given passage says that the stories written by the writer can happen to anyone which means we can relate her stories with real life.

• Hence, realistic is the most appropriate option for blank 3).

• Sarcastic: marked by or given to using irony in order to mock or convey contempt.

• Artistic: having or revealing natural creative skill.

• Exotic: attractive or striking because colourful or out of the ordinary.

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Q21. Answer: (a) to

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

• 'to' is used to indicate a person, place or thing.

• In the given sentence 'to' indicate 'any of us', hence it is the correct word to use in the blank 40.

• On: on is used to show contact. E.g. the book is on the table.

• BY: by is used to show the method of something, like by train, by bus, etc.

Q22. Answer: (d) is

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

• The given sentence is in the present tense, hence, we cannot use was and were.

• The subject of the given sentence is singular i.e. what because the main verb used for what is 'makes'.

• Hence, the auxiliary verb 'is' will be used.

Q23. Answer: (b) CABD

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

• The only independent sentence from the given sentences is 'C', hence, it will be the first sentence.

• Sentence 'A' will follow the sentence 'C' because in the sentence 'C' it is being said that watching television is harmful and the sentence 'A', it is being said that who are most affected by it.

• In the sentence 'B' pronoun 'their' has been used for 'children' hence, sentence 'B' will follow the sentence 'A'.

• so, the last sentence will be 'D'.

• Hence, the correct sequence will be: CABD

Q24. Answer: (c) as rich as he is

The correct answer is option 3) i.e. as rich as he.

• In the given sentence 'as rich than he is' is used which is wrong because we cannot use 'than' with as.

• 'as-as' is used for comparison, hence, 'as rich as he' is the correct answer.

• We cannot use 'so much rich' because so and much both are used for comparison and we cannot use both of them in a sentence.

• more richer is also wrong because both of them are used for comparison.

Q25. Answer: (a) inaudible

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

Let's look at the meaning of the given options-

• Inaudible: that which cannot be heard.

• Invisible: that which cannot be seen.

• Incorrigible: that which cannot be corrected

• Incredible: that which cannot be believed.

Hence from the above-given meanings, we find that the correct answer is option 1 i.e. inaudible

Q26. Answer: (a) 7, 2, 45

The pattern followed here is,

$8^2 = 64$ and $6^2 = 36$

64 - 36 = 28.

Checking each options,

Option 1 →

$7^2 = 49$ and $2^2 = 4$

49 - 4 = 45

Option 2 →

$6^2 = 36$ and $4^2 = 16$

36 - 16 ≠ 30

Option 3 →

$10^2 = 100$ and $5^2 = 25$

100 - 25 ≠ 85

Option 4 →

$12^2 = 144$ and $6^2 = 36$

$144 - 36 \neq 98$

So, except only 7, 2, 45 all do not follow the given series.

Hence, the correct answer is 7, 2, 45

Q27. Answer: (a) GOKI

The pattern followed here is,

Similarly,

Hence, the correct answer is GOKI.

Q28. Answer: (d) 3, 2, 5, 6, 4, 1

The correct order will be,

3.Gateway of India → 2.Mumbai → 5.Maharashtra → 6.India → 4.Asia →1.world.

Hence, the correct answer is 3, 2, 5, 6, 4, 1

Q29. Answer: (d) [figure]

There is an increasing number of (*) in every figure as we move towards the left to right and decreasing of (+) as we move towards the left to right.

The number of "+" symbols is decreasing by 1 in each step.

the number of "*" symbols is increasing by 1 in each step.

And the square is rotating in clockwise direction.

The complete series will be,

Hence, the correct answer is option 4.

Q30. Answer: (a) 33

By counting number of triangles:

Counting All triangles above point I.

ABb,ACa,ADZ,DZI,EYI,FXI,GWI,HVI → 8 Triangles

cZI,dYI,eXI,fWI,gVI, cDI,dEI,eFI,fGI,gHI → 10 Triagles

Below point I,

INP,IMQ,ILR,IKS,IJT → 5 Triangles

IJi,IKj,ILk,IMl,INO,IiT,IjS,IkS,IlQ,IOP → 10 tringles

Total triangles = 8 + 10 + 5 + 10 = 33

Hence, the correct answer is 33.

Q31. Answer: (b) × and ÷

Given expression is

$14 + 4 \div 5 - 18 \times 2$

Option 1 → ÷ and +

So, we get, $14 \div 4 + 5 - 18 \times 2$

$= 7/2 + 5 - 18 \times 2$

$= 7/2 + 5 - 36$

$= -35/2 \neq 25$

Option 2 → × and ÷

So, we get, $14 + 4 \times 5 - 18 \div 2$

$= 14 + 4 \times 5 - 9$

$= 14 + 20 - 9$

$= 34 - 9$

$= 25$

Option 3 → × and -

We get, $14 + 4 \div 5 \times 18 - 2 = 25$

$14 + 0.8 \times 18 - 2$

$14 + 14.4 - 2 \neq 25$

Option 4 → × and +

14 × 4 ÷ 5 - 18 + 2

14 × 0.8 - 18 + 2

11.2 - 18 + 2 ≠ 25

Only option 2 satisfy the given condition.

Hence, the correct answer is × and ÷

Q32. Answer: (b) PSZV

The pattern followed here is,

Except option 2 the gap between the 1^(st) letter and 2^(nd) letter is 3,2^(nd) letter and 3^(rd) letter is 6 and 3^(rd) letter and 4^(th) letter is 3

Hence, the correct answer is PSZV.

Q33. Answer: (d) 19

The pattern followed here is,

Hence, the correct answer is 4.

Q34. Answer: (c) KDRRQUPQ

By checking each options:

1) U K Q R P K Q P U K D R P K Q R U K D R P K Q R → No definite pattern is followed.

2) U K D R P K Q R U K D R P K U R U K D R R K Q R → No definite pattern is followed.

3) U K D R P K Q R/ U K D R P K Q R/ U K D R P K Q R → Definite pattern is followed. (U K D R P K Q R)

4) U K D R P K Q R U K D R P K Q R P K D R P K R R → No definite pattern is followed.

Hence, the correct answer is KDRRQUPQ.

Q35. Answer: (c) 2

Considering the first two positions,

1 is common in two dice positions so by keep 1 as constant term we move clockwise or anticlockwise direction from 1.

We get, 3 is the opposite of 4, 6 is the opposite of 2 and 1 is the opposite of 5.

So, 2 is at the opposite of 6.

Hence, the correct answer is 2.

Q36. Answer: (a) Maternal uncle

We will consider following table for family tree:

The family tree is as shown below:

As Illena is the only daughter of Rishabh and Mridu and Sonu is the brother of Mridu.

So, Sonu is the maternal uncle of Illena.

Hence, the correct answer is Maternal uncle.

Q37. Answer: (d) [figure]

Sikkim is the different state where as imphal is the capital of Manipur.

So, the correct venn diagram is,

Hence, the correct answer is option 4.

Q38. Answer: (a) Shirt

Sandals, Slippers, Shoes are used as footwear.

Hence, the correct answer is shirt.

Q39. Answer: (a) RVQ

The logic is as follows:

Hence, the correct answer is RVQ.

Q40. Answer: (b) [figure]

By observation, we can see that image is embedded as follows,

In option 2 the embedded figure is found.

Hence, the correct answer is option 2.

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Q41. Answer: (b) HQTRFGVK

The logic is as follows:

Similarly,

Hence, the correct answer is HQTRFGVK

Q42. Answer: (b) 32 and 7 years

Let, two years ago the of the boy = X

The age of his father = 6X

So, (6x + 20)/(X + 20) = 2/1

We get,

6x + 20 = 2x + 40;

4x = 20;

X = 5

So, the age of boy is 5 and his father is 30 two years ago.

So, the present age of the son is 5 + 2 = 7 and his father is 30 + 2 = 32

Hence, the correct answer is 32 and 7 years.

Q43. Answer: (d) [figure]

The mirror image would be,

Hence, the correct answer is option 4.

Q44. Answer: (c) 7 : 100

The correct answer is option 3 i.e. 7 : 100

Given series is 4 : 49

i.e. $4 + 3 = 7^2 = 49$

Similarly,

Option 1 →

$8 \rightarrow 8 + 3 = 11^2 = 121 \neq 144$

Option 2 →

$6 \rightarrow 6 + 3 = 9^2 = 81 \neq 64$

Option 3 →

$7 \rightarrow 7 + 3 = 10^2 = 100$;

Option 4 →

$5 \rightarrow 5 + 3 = 8^2 = 64 \neq 82$

Hence, the correct answer is 7 : 100

Q45. Answer: (a) 91431221454

Alphabet and their positional value:

Code for Transfer							
T	R	A	N	S	F	E	R
20	18	1	14	19	6	5	18
Similarly the code for included							
I	N	C	L	U	D	E	D
9	14	3	12	21	4	5	4

Here, all alphabets are taking their own positional value.

Hence, the correct answer is 91431221454.

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Q46. Answer: (d) [figure]

For this question, We are folding the transparent sheet diagonally upside.

After folding in left, the pattern will look like as-

Here, folded image is the same as Option (4).

Hence, Option (4) is correct

Q47. Answer: (a) 14 and 37

Given expression:

618 + 37 × 12 - 703 ÷ 14

Option 1 → 14 and 37

618 + 14 × 12 - 703 ÷ 37

= 618 + 14 × 12 - 19

= 618 + 168 - 19

= 767

option 2 → 618 and 14

14 + 37 × 12 - 703 ÷ 618

14 + 37 × 12 - 1.137

14 + 444 - 1.137 ≠ 767

Option 3 → 703 and 12

618 + 37 × 703 - 12 ÷ 14

618 + 37 × 703 - 0.85

618 + 26011 - 0.86 ≠ 767

Option 4 → 12 and 37

618 + 12 × 37 - 703 ÷ 14

618 + 12 × 37 - 50.214

618 + 444 - 50.214 ≠ 767

We get the answer.

Hence, the correct answer is "14 and 37".

Q48. Answer: (d) 29

positional value of E is 5.

The code for “E” is 5

“PEN” is = 16 + 5 + 14 = 35;

Similarly,

The code for “PAGE” = 16 + 1 + 7 + 5 = 29

Hence, the correct answer is 29.

Q49. Answer: (d) Mechanic : Repair

The pattern followed is:

Waiter : Serve

Waiter is the one serves the food.

Similarly,

A mechanic is the one who repairs vehicle.

Hence, the correct answer is the Mechanic : Repair.

Q50. Answer: (a) 99

97,89 and 83 are prime numbers.

But,

99 is a compound number.

Hence, the correct answer is 99.

Q51. Answer: (b) 22% increase

Net percentage change using formula = x + y + xy/100

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For first two changes,

=> +30 + (-25) + [30 × (-25)]/100 = -2.5%

For further third change,

-2.5 + 25 + [(-2.5) × 25]/100 = 21.875%

=> 22% increase (approx.)

Q52. Answer: (a) 9

Given:

A number 1220x558y2 is divisible by 88

Concept used:

• If a number is divisible by 88 then it must be divisible by 11 & 8

• If a number ABCD is divisible by 11 then (A + C) - (B + D) = 0 or multiple of 11

Calculation:

The difference between the sum of alternative terms should be 0.

=> 1 + 2 + x + 5 + y = 2 + 0 + 5 + 8 + 2

=> x + y = 9

Therefore The correct answer is 9

Q53. Answer: (b) 9

Total age of family 10 years ago = 38 × 5 = 190 years

Total age at present of the family = 38 × 7 = 266 years

Age of 5 members increased = 5 × 10 = 50 years

Difference of total age then and now = 266 – (190 + 50) = 26 (sum of ages of new members)

Let the two members be x and y.

X + y = 26

X – y = 8

On solving two equations,

X = 17 and y = 9

Age of younger member = 9

Q54. Answer: (d) 3

Given:

(x - 7)3 + (x - 8)3 + (x + 6)3 = 3 (x - 7)(x - 8) (x + 6)

Concept used:

If a3 + b3 + c3 = 3abc then a + b + c = 0

Calculation:

Let (x - 7),(x - 8), and (x + 6) be a, b and c respectively

Now the equation can be written as,

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

Using the above concept, we can write,

=> a + b + c = 0

=> (x - 7) + (x - 8) + (x + 6) = 0 [put the values of a, b, c]

=> 3x = 9

=> x = 3

Therefore The value of x is 3

Q55. Answer: (a) $(p^2 - 1)/(p^2 + 1)$

$\cos \theta = 2p/(p^2 + 1)$

On squaring both the side,

=> $\cos^2 \theta = 4p^2/(p^2 + 1)^2$

=> $1 – \sin^2\theta = 4p^2/(p^2 + 1)^2$

=> $\sin^2\theta = 1 - 4p^2/(p^2 + 1)^2$

=> $\sin^2\theta = [(p^2 + 1)^2 - 4p^2]/(p^2 + 1)^2$

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=> $\sin^2\theta = (p^2 - 1)^2 /(p^2 + 1)^2$

=> $\sin \theta = (p^2 - 1)/(p^2 + 1)$.

Alternate Method

$\cos \theta = 2p/(p2 + 1)$

$\cos \theta = 2p/(p2 + 1)$ = Base(B)/Hypotenuse(H)

By Pythagoras theorem

=> $(P)^2 + (B)^2= (H)^2$

=> $(P)^2+ (2p)^2 = (p2 + 1)2$

=> $(P)2 + 4p2 = (p2 + 1)2$

=> $(P)2 = (p2 + 1)2 - 4p^2$

=> $(P)2 = p^4 + 1 + 2p^2 - 4p2$

=> $(P)2 = (p2 - 1)2$

=> $P = p2 - 1$

now,

$\sin \theta$ = Perpendicular(P)/Hypotenuse(H)

=> $\sin \theta = (p2 - 1)(p2 + 1)$

Therefore $\sin \theta = (p2 - 1)(p2 + 1)$

Q56. Answer: (c) 96

There are different ways of doing it, one method is as follows…..

Rhombus ABCD, AB = 10 cm, So BC = 10 cm, as all sides of rhombus are equal.

Diagonal AC = 12 cm

So, area of triangle ABC by Heron's formula

= √{ s(s - a)(s - b)(s - c)}, s is semi perimeter & a, b, c are sides of the triangle

= s = 32/2 = 16

Area = √{16(16 – 10)(16 – 10)(16 – 12)

=> area = $\sqrt{(16 \times 6 \times 6 \times 4)}$

=> area = $\sqrt{(2^2 \times 2^2 \times 2^2 \times 3^2 \times 2^2)}$

=> area = $2 \times 2 \times 2 \times 3 \times 2 = 48$ cm²

=> area (Rhombus ABCD) = $48 \times 2 = 96$ cm²

Alternate Method

Given:

The side of a rhombus is 10 cm and the smaller diagonal is 12 cm

Concept use:

• All sides of a rhombus are equal

• Diagonals of a rhombus bisect each other at a right angle (90°)

• Area of a rhombus = 1/2 × (product of two diagonals)

Calculation:

Let ABCD be the rhombus, where AC and BD be the diagonals intersecting at point O

Here, AC = 12, then OC = 6 and BC = 10

Now, ΔBOC is a right-angle triangle where right angle at O

So, BO = $\sqrt{(10^2 - 6^2)} = 8$

So, BD = $8 \times 2 = 16$ cm

Now, area of the rhombus is $1/2 \times 16 \times 12 = 96$ cm²

Therefore The area of the rhombus is 96 cm2

Q57. Answer: (d) 2014 - 2015

Total number of student in 2013-2014 is (150 + 100) = 250

Total number of student in 2041-20015 is (200 + 100) = 300

Total number of student in 2015-2016 is (300 + 50) = 350

Total number of student in 2016-2017 is (250 + 100) = 350

Total number of student in 2017-2018 is (300 + 100) = 400

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From 2014-15 the increase in number of students = (300 – 250)/250 × 100 = 20%
From 2015-16 the increase in number of students = (350 – 300)/300 × 100 = 16.66%
From 2016-17 the increase in number of students = (350 – 350)/350 × 100 = 0%
From 2017-18 the increase in number of students = (400 – 350)/350 × 100 = 14.28%
Therefore the number of students increasing percentage is maximum for year 2014-15.

Q58. Answer: (d) 90

Number of failed students = 100 + 100 + 50 + 100 + 100 = Rs. 450
Average of failed students in five academic years = 450/5 = Rs. 90

Q59. Answer: (a) 2015-2016

Difference between the number of students passed and those who failed,
In 2013-14, (150 – 100) = 50
In 2014-15, (200 -100) = 100
In 2015-16, (300 -50) = 250
In 2016-17, (250 -100) = 150
In 2017-18, (300 -100) = 200
Therefore In year 2015-16 difference between the number of students passed and those who failed.

Q60. Answer: (d) 73%

Total number of students = (150 + 100) + (200 + 100) + (300 + 50) + (250 + 100) + (300 + 100) = 1650
Total number of students passed = (150 + 200 + 300 + 250 + 300) = 1200
percentage of passed students = 1200/1650 × 100 = 72.72% or 73% (Approximately)

Q61. Answer: (a) 114

Concept use:
Calculation:
=> 15 of 8 – 6 + [(27 – 3) ÷ 6 - 4]
=> 15 of 8 – 6 + [24 ÷ 6 - 4]
=> 15 of 8 – 6 + [4 - 4]
=> 15 of 8 – 6
=> 120 – 6
=> 114
Therefore The correct answer is 114

Q62. Answer: (c) 1030

Given:
$(x - 1/x) = 10$
Calculation:
$(x - 1/x) = 10$ $(x - 1/x) = 10$
on cubing both the side,
=> $(x - 1/x)^3 = 10^3$
=> $(x^3 - 1/x^3 - 3(x \times 1/x)(x – 1/x) = 1000$
=> $(x^3 - 1/x^3) – 3 \times 10 = 1000$
=> $(x^3 - 1/x^3) = 1030$
Alternate Method
Concept used:
If $(x - 1/x) = a$ then $(x3 - 1/x3) = a^3 + 3a$
Calculation:
=> $(x - 1/x) = 10$
=> $(x3 - 1/x3) = 10^3 + 3\times 10$
=> $(x3 - 1/x3) = 1030$
Therefore The correct answer is 1030

Q63. Answer: (b) 6

Given:

A can do the work = 10 days

B can do the work = 20 days

C can do the work = 60 days

Calculation:

One-day work of A = 1/10 days ----(1)

One-day work of B = 1/20 days ----(2)

One-day work of C = 1/60 days ----(3)

Adding equations (1), (2) and (3), we get

One-day work of (A + B + C) = {(1/10) + (1/20) + (1/60)}

=> (A + B + C) = {(6 + 3 + 1)/60}

=> (A + B + C) = 10/60 = 1/6

One-day work of (A + B + C) = 1/6 days

Therefore The total work will be completed in 6 days.

Alternate Method

Total work in units = LCM of the time taken by them individually.

LCM = total work = 60

Efficiency of A = 60/10 = 6 units per day. (Efficiency = total work/time)

Efficiency of B = 60/20 = 3 units per day. (Efficiency = total work/time)

Efficiency of C = 60/60 = 1 unit per day. (Efficiency = total work/time)

Working together they will complete = 60/(6 + 3 + 1) = 6 days.

Q64. Answer: (c) 30

Shortcut Trick

Use the product of speeds formula: Distance = [s1 × s2 ÷ (s2 − s1)] × Time Difference

360 = [v × (v + 10) ÷ 10] × 3

=> 120 × 10 = v(v + 10)

=> 1200 = 30 × 40

Therefore The correct answer is 30 km/h.

Alternate Method

Given: Total Distance = 360 km, Speed increase = 10 km/h, Time decrease = 3 hours.

Formula Used: Time = Distance ÷ Speed

=> Let the original speed be 'v' km/h.

=> Original Time (t1) = 360/v

=> New Time (t2) = 360/(v + 10)

=> Difference: t1 − t2 = 3

=> 360/v − 360/(v + 10) = 3

=> 120/v − 120/(v + 10) = 1

=> 120(v + 10 − v) = v(v + 10)

=> 1200 = v^2 + 10v

=> v^2 + 10v − 1200 = 0

=> (v + 40)(v − 30) = 0

=> Since speed cannot be negative, v = 30 km/h.

Therefore The correct answer is 30 km/h.

Additional Information

Average Speed

For the same distance covered at speeds a and b, Average Speed = 2ab ÷ (a + b).

Relative Speed

When two objects move in the opposite direction, relative speed is (s1 + s2). In the same direction, it is |s1 − s2|.

Speed-Time Relation

If distance is constant, Speed is inversely proportional to Time (s1 × t1 = s2 × t2).

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Q65. Answer: (c) 820

Given:

a2 + b2 = 88 and ab = 6

Concept used:

• (a3 + b3) = (a + b) (a2 – ab + b2)

• (a + b)2 = a2 + b2 + 2ab

Calculation:

$(a + b)^2 = a^2 + b^2 + 2ab$

$\Rightarrow (a + b)^2 = 88 + 2 \times 6 = 100$ (On putting the given values)

$\Rightarrow (a + b) = 10$

Again using formula,

$(a^3 + b^3) = (a + b) (a^2 – ab + b^2)$

$\Rightarrow (a^3 + b^3) = 10 \times (88 - 6) = 820$ (On putting the given as well as derived values)

Q66. Answer: (c) 40 : 49

Draw the following figure,

Using Thale's theorem,

AD/AB = DE/BC = 3/(3 + 4) = 3/7

BC = 2k + 3k + 2k, BD = 4k

Height of trapezium $(h)^2 = (4k)^2 – (2k)^2 = 2\sqrt{3}k$

As the sides of the triangle ABC are same (7k).

Area of equilateral triangle = $\sqrt{3}/4 \times side^2$

$\Rightarrow A_E = (\sqrt{3}/4) \times (7k)^2 = 49(\sqrt{3}/4)k^2$

Area of the trapezium = ½ × perpendicular distance between to parallel lines × sum of the two parallel lines

$A_T = ½ \times 2\sqrt{3}k \times (3k + 7k) = 10\sqrt{3}k^2$

Required ratio = $10\sqrt{3}k^2 : 49(\sqrt{3}/4)k^2 = 40 : 49$.

Q67. Answer: (a) Rs. 61800

The formula for calculating the amount is $A = P(1 + r/100)^n$

where A = Amount, P = Principal, r = Rate of interest in % and n = Number of years

In this case both r and n are not known but P and A are given.

We have $63654 = 60,000 \times (1 + r/100)^n$

Therefore $(1 + r/100)^n = 63654/60000$.

When the period is halved the formula for Amount A1 becomes

A1 = 60000(1 + r/100)^(n/2)

Hence the multiplying factor becomes the square root of the original multiplying factor.

Hence $A1 = 60,000 \times \sqrt{(63654/60,000)}$

A1= 60,000 × 1.03 = 61,800

Q68. Answer: (a) 8 cm

As similarity of triangles ΔABC ~ ΔQPR,

Ratio of area of triangles = ratio of squares of similar sides

$\Rightarrow 9 : 4 = AC^2 : QR^2$

$\Rightarrow 9 : 4 = 12^2 : QR^2$

$\Rightarrow 12 \times 12 \times 4 / 9 = QR^2$

$\Rightarrow QR = 8$ cm.

Q69. Answer: (d) 500

Net discount = 29 + 12 – (12 × 29)/100 = 37.52%

Marked price × (100 – 37.52)/100 = Selling price

Mp × 62.48/100 = 312.40

Mp = Rs. 500

Q70. Answer: (c) 33

Theorem: If from any external point two tangents are drawn on the circle, they are equal in length.

From point C,

CQ = CR = 4.5 cm

From point B,

BQ = BP = 6.5 cm

From point A,

AP = AC = 5.5 cm

Perimeter = AP + PB + BQ + QC + CR + RA

=> 5.5 + 6.5 + 6.5 + 4.5 + 4.5 + 5.5 = 33 cm

Q71. Answer: (c) 7.5%

Total Cost price = 2650 × 2 = Rs.5300

SP of one article = 2650 + 2650 × 10/100 = 2915

SP of the second article = 2650 + 2650 × 5/100 = 2782.5

Total SP = 2915 + 2782.5 = Rs. 5697.5

Profit% = (5697.5 - 5300)/5300 × 100 = 7.5%

Alternate Method

Given:

CP of two articles Rs. 2650 each and sold one article at 10% profit and another at 5% profit.

Concept used:

• 10% = 1/10

• 5% = 1/20

Calculation:

1st article sold at a profit of 10%, CP = 10 and SP = 11

2nd article sold at a profit of 5%, CP = 20 and SP = 21

Now, according to the question CP of two articles are same,

	CP	SP
1st Article × 2	20	22
2nd Article	20	21
Total	40	43

So, CP = 40 and SP =43

=> Profit = (43 - 40)/40 × 100 = 7.5%

Therefore The correct answer is 7.5%

Q72. Answer: (a) angle BOC = 90° + (angle A/2)

From the above figure,

angle BOC = 90° + (angle A/2)

Q73. Answer: (a) 2.5°

We can write it as,

tan x = tan [90° - (65° + 9x)

x = 25 - 9x

10x = 25

x = 2.5°

Q74. Answer: (b) 7

x^4 + 1/x^4 = 2207

On adding 2 on both the sides,

x^4 + 1/x^4 + 2 = 2209

$(x^2 + 1/x^2)^2 = (47)^2$

$x^2 + 1/x^2 = 47$

On adding 2 on both the sides,

$x^2 + 1/x^2 + 2 = 49$

$(x + 1/x) = \sqrt{49}$

Therefore The value of x + x^(-1) will be 7.

Q75. Answer: (b) 10

Let O and O' be the senter of the circle and AB be the length of the common chord.

=> OA = 8, O'A = 5

AM = ½ AB (as perpendicular from the center of the circle to a chord bisects the chord)

=> AM = ½ × 8 = 4

By applying Pythagoras theorem in triangle AMO,

$OM^2 = OA^2 – AM^2$

$OM^2 = 64 – 16 = 48$

OM = 6.92

By applying Pythagoras theorem in triangle AMO

$O^'M^2 = O^'A^2 - AM^2$

$O^'M^2 = 25 – 16 = 9$

O'M = 3

x = OM + O'M

x = 6.92 + 3 = 9.92 or 10 (approximately)

Q76. Answer: (c) Otoscope

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

• An Otoscope is an instrument with lighting and magnifying systems used for visual examination of the tympanic membrane and the canal connecting it to the exterior of the body.

• Otolaryngology, also called otorhinolaryngology, medical speciality concerned with the diagnosis and treatment of diseases of the ear, nose, and throat.

• A phonograph, also called record player, an instrument for reproducing sounds by means of the vibration of a stylus, or needle, following a groove on a rotating disc.

• The lie detector, also called polygraph, an instrument for recording physiological phenomena such as blood pressure, pulse rate, and respiration of a human subject as he answers questions put to him by an operator.

• Optometer is an instrument for measuring the refractive error of an eye.

Q77. Answer: (c) Maurya Empire

The correct answer is option 3) i.e. the Maurya Empire.

• The Barabar Caves are the oldest surviving rock-cut caves in India, mostly dating from the Maurya Empire (322–185 BCE), some with Ashokan inscriptions, located in the Bela Ganj Block of Gaya district, Bihar, India, 24 km north of Gaya.

• These caves are situated in the twin hills of Barabar and Nagarjuni.

• Caves of Nagarjuni Hill sometimes are singled out as Nagarjuni Caves. These rock-cut chambers date back to the 3rd century BC, Maurya period, of Ashoka (273-232 BCE) and his son Dasaratha Maurya.

• The caves were used by ascetics from the Ajivika sect, founded by Makkali Gosala, a contemporary of Gautama Buddha, the founder of Buddhism, and of Mahavira, the last and 24th Tirthankara of Jainism.

Q78. Answer: (d) Argentina

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

• On 22 May 2019, the World Health Organization (WHO) officially recognized Algeria and Argentina as malaria-free.

• Algeria is the second country in the WHO African Region and Argentina the second country in the WHO Region of the Americas to achieve WHO certification of malaria-free status.

• A total of 38 countries and territories worldwide have now achieved malaria-free status.

• Maldives & Sri Lanka are the only country in South-East Asia to have received this Malaria-free certification from WHO.

Q79. Answer: (a) Spain

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

• Rafael Nadal was born in Mallorca, Spain on June 3rd 1986. From a very young age, he was passionate about sport, and played

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football and tennis.

• Soon, he would have to choose between the two, and decided to focus on tennis.

• In 2004, Nadal was a member of the Spanish National Team that won the Davis Cup.

• A year later, he established himself on the professional scene by winning Roland Garros, the first of his nine victories at the French Open.

• Until this day, he has won 19 Grand Slams, 2 Olympic gold medals and 4 Davis Cup with the National Team.

• Rafael Nadal won the U.S. Open in September 2019 beating Daniil Medvedev.

Q80. Answer: (d) 25 years

The correct answer is option 4) i.e. 25 years.

• The minimum age requirement to become a Member of the Legislative Assembly is 25 years.

Additional Information

According to the Indian Constitution the minimum age for a person for the following posts is as follows:

Posts	The minimum age for elections in years
President	35
Governor	35
Rajya Sabha member	30
Member of Legislative Council (MLC)	30
Lok Sabha member	25
Member of legislative assembly (MLA)	25

Q81. Answer: (b) Raipur

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

• The Swami Vivekananda International Airport is the main serving airport of the state of Chattisgarh.

• It was formerly called the Mana Airport.

• The airport is centrally located at Mana, 15 km south of Raipur between the old city and the new seat of the state government Naya Raipur.

• Birsa Munda Airport is the main serving airport of Ranchi, capital of Jharkhand.

• Kazi Nazrul Islam Airport is a domestic airport located at Andal, Paschim Bardhaman in West Bengal 15km from the city centre of Durgapur.

Q82. Answer: (a) The President

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

• Article 123 of the Constitution grants the President certain lawmaking powers to promulgate Ordinances when either of the two Houses of Parliament is not in session and hence it is not possible to enact laws in the Parliament.

• In the State, the Governor can promulgate an ordinance. Article 213 provides the Governor with this power.

• The President can only promulgate an Ordinance when either of the two Houses of Parliament is not in session.

• The President cannot promulgate an Ordinance unless he is satisfied that there are circumstances that require taking ‘immediate action'.

• Ordinances must be approved by Parliament within six weeks of reassembling or they shall cease to operate.

Q83. Answer: (d) Murugappa Group

The correct answer is option 4) i.e. Murugappa Group.

• CUMI was founded in 1954 as a tripartite collaboration between the Murugappa Group, The Carborundum Co., USA and the Universal Grinding Wheel Co. Ltd., U.K.

• The company pioneered the manufacture of Coated Abrasives and Bonded Abrasives in India in addition to the manufacture of Super Refractories, Electro Minerals, Industrial Ceramics and Ceramic Fibres.

• CUMI’s products are exported to 43 countries spread across North America, Europe, Australia, South Africa and Asia.

• CUMI has earned a place in Forbes’ list of ‘Asia’s Best 200 Companies Under a Billion’.

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Q84. Answer: (c) Lieutenant General Shailesh Tinaikar

The correct answer is option 3) i.e. Lieutenant General Shailesh Tinaikar.

• Lieutenant General Tinaikar succeeded Lieutenant General Frank Kamanzi of Rwanda.

• Lieutenant General Shailesh Tinaikar has had a long and distinguished career with the Indian Armed Forces spanning over 34 years.

• He graduated from the Indian Military Academy in 1983.

• From 1996 to 1997, he served in the United Nations Angola Verification Mission III, and from 2008 to 2009, in the United Nations Mission in Sudan.

Q85. Answer: (a) Femur

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

• The femur, also called the thighbone, the upper bone of the leg or hind leg is the largest bone in the human body.

• The head forms a ball-and-socket joint with the hip, being held in place by a ligament within the socket and by strong surrounding ligaments.

• A ligament is a tough fibrous band of connective tissue that serves to support the internal organs and hold bones together in proper articulation at the joints.

• Human femurs have been shown to be capable of resisting compression forces of around 800–1,100 kg.

Q86. Answer: (b) The Overstory

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

• The Overstory, a novel written by Richard Powers won the Pulitzer Prize for Fiction 2019.

• Richard Powers is an American Novelist born in 1957.

• In this twelfth novel, he delivers a sweeping, impassioned novel of activism and resistance that is also a stunning evocation of the natural world.

• Pulitzer Prize is a series of annual prizes awarded by Columbia University, New York City, for outstanding public service and achievement in American journalism, letters, and music.

Q87. Answer: (b) 1921

The correct answer is option 2) i.e. 1921.

• The Nobel Prize in Physics 1921 was awarded to Albert Einstein "for his services to Theoretical Physics, and especially for his discovery of the law of the photoelectric effect."

• Albert Einstein is a German-born physicist who also developed the special and general theories of relativity.

• Photoelectric effect - A phenomenon in which electrically charged particles are released from or within a material when it absorbs electromagnetic radiation. The effect is often defined as the ejection of electrons from a metal plate when light falls on it.

Q88. Answer: (b) Pandit Birju Maharaj

The correct answer is option 2) i.e. Pandit Birju Maharaj.

• Kathak Maestro Pt. Birju Maharaj established Kalashram focuses on imparting training in the field of Kathak & associated disciplines.

• Kathak is one of the eight Indian classical dances.

• The word Kathak has been derived from the word Katha which means a story.

• Kathakars or storytellers are people who narrate stories largely based on episodes from the epics, myths and legends.

• Thus evolved a simple form of expressional dance, providing the origins of what later developed into Kathak as we see it today.

• Other Indian classical dances are Bharatanatyam, Kathakali, Kuchipudi, Manipuri, Odissi, Mohiniattam & Assam.

Q89. Answer: (d) Uttarakhand

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

• Bugyal which literally means "Meadows" is a high altitude grassland which serves as a grazing field for the livestock.

• These lush green pastures sprawl over acres of land in Uttarakhand.

• During winters they remain engulfed in snow and in summers the meadows reappear with varied Himalayan Flora particular to that region.

• Many wildflowers, berries, and shrubs grow in these meadows.

• These meadows are usually seated at high altitudes ranging between 3300 m to 4000 m.

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Q90. Answer: (b) 29th April

The correct answer is option 2) i.e. 29th April.

• In 1982 the Dance Committee of ITI founded International Dance Day to be celebrated every year on the 29th April, the birthday of Jean-Georges Noverre (1727-1810), creator of modern ballet.

• The intention of the International Dance Day Message is to celebrate dance, revel in the universality of this art form, cross all political, cultural and ethnic barriers, and bring people together with a common language - dance.

• Every year a message from an outstanding choreographer or dancer is circulated throughout the world.

• The author of the message is selected by the International Dance Committee of ITI and the Executive Council of ITI. The message is translated into numerous languages and circulated globally.

Q91. Answer: (a) Harshavardhana

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

• With the commencement of the 7th century, Harshavardhana (606-647 A.D.) ascended the throne of Thaneshwar and Kannauj on the death of his brother, Rajyavardhana.

• By 612 Harshavardhana consolidated his kingdom in northern India.

• In 620 A.D. Harshavardhana invaded the Chalukya kingdom in the Deccan, which was then ruled by Pulakesin II. But the Chalukya resistance proved tough for Harshavardhana and he was defeated.

• He maintained diplomatic relations with China and sent envoys, who exchanged ideas of the Chinese rulers and developed their knowledge about each other.

• The Chinese traveller, Hiuen Tsang, also known as "Xuanzang" who visited India during his reign, has given a vivid description of the social, economic and religious conditions, under the rule of Harsha spoke highly of the king.

• Harsha's death, once again, left India without any central paramount power.

Q92. Answer: (d) Iceland

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

• Iceland remains the most peaceful country in the world, a position it has held since 2008.

• It is joined at the top of the index by New Zealand, Austria, Portugal, and Denmark.

• India is ranked 141. It has slipped 5 places in the past year.

• Bhutan has recorded the largest improvement of any country in the top 20, rising 43 places in the last 12 years.

Afghanistan is now the least peaceful country in the world, replacing Syria, which is now the second least peaceful.

• South Sudan, Yemen, and Iraq comprise the remaining five least peaceful countries

• The 13^(th)edition of the Global Peace Index ranked 163 independent countries based on their level of peacefulness.

• It is produced by the Institute for Economics and Peace (IEP).

• It measures the state of peace using three thematic domains - The level of Societal Safety and Security, the extent of Ongoing Domestic and International Conflict, and the degree of Militarisation.

Q93. Answer: (d) Andhra Pradesh

The correct answer is option 4) i.e. Andhra Pradhesh.

• The Wular lake in Jammu and Kashmir is the result of the tectonic activity and is the largest freshwater

lake in India

• Most of the freshwater lakes are in the Himalayan region.

• They are of glacial origin. In other words, they formed when glaciers dug out a basin, which was later filled with snowmelt.

• The Dal Lake, Bhimtal, Nainital, Loktak and Barapani are some other important freshwater lakes.

Note:

• A meandering river across a flood plain, forms cut-offs that later develop into ox-bow lakes. Spits and bars form lagoons in the coastal areas, eg the Chilika lake, the Pulicat lake, the Kolleru lake.

Q94. Answer: (b) Hybrid computers

The correct answer is option 2) i.e. Hybrid computers.

• Hybrid computers are used in hospitals to measure the heartbeat of patients.

• They have the features of both analog and digital computers.

• The digital component behaves like the 'controller', providing logical operations.

• The analog component behaves like the 'solver', computing differential equations.

• Hybrid computers have been necessary for successful system development and are generally used in scientific applications or in controlling industrial processes."

Q95. Answer: (c) Liverpool

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

• Liverpool lifted the UEFA Champions League football trophy at Madrid by beating Tottenham Hotspur for 2-0.

• Liverpool lifted the European Cup for the 6th time.

• Divock Origi and Mohamed Salah scored the goals in the finals.

• Jurgen Klopp was the coach of Liverpool.

Q96. Answer: (a) Uttar Pradesh

The correct answer is option 1) i.e. Uttar Pradesh.

• Sanjhi art is the traditional art of stenciling from Mathura, Uttar Pradesh Krishna's hometown.

• The art grew in the 16th and 17th centuries, when the walls and floors of temples were decorated with Sanjhi motifs.

• The term Sanjhi is derived from the Hindi word sandhya, the period of dusk with which the art form is typically associated.

• The art depicts Indian mythological stories in numerous forms, with predominant focus on Krishna's Leela.

Q97. Answer: (a) USD 5 billion

The correct answer is option 1) i.e. USD 5 billion.

• The Reserve Bank of India in March 2019 successfully concluded a forex swap auction intended to ease liquidity conditions.

• The central bank bought the targeted $5 billion as part of the long term Dollar/Rupee swap auction with a three-year tenor, it said in a release.

• In turn, Rs 34,561 crore was infused into the Indian banking system.

Q98. Answer: (c) 9

The correct answer is option 3) i.e. 9.

• Uttar Pradesh is the only state that shares its boundaries with maximum states.

• Uttar Pradesh shares its borders with as many as 9 states/Union Territories,

• It also shares an international border with Nepal.

• Assam is the only Indian State which shares the border with 7 states. Assam bordering states – West Bengal in the west, Arunachal Pradesh in the northeast, Nagaland, and Manipur in east, Mizoram, Tripura and Meghalaya in the south.

• Uttar Pradesh is the Indian State which shares its border with 8 states and 1 union territory which is maximum. Delhi, Haryana, Himachal Pradesh, and Uttarakhand in North, Bihar Jharkhand in the east, Rajasthan in West and Madhya Pradesh and Chattisgarh in the south.

• West Bengal In the north it is bounded by the state of Sikkim and the country of Bhutan. To the North-East, it is bounded by the state of Assam. To the East, it is bounded by the country of Bangladesh. To the south, it is bounded by the Bay of Bengal. To the South-West, it is bounded by the state of Odisha. To the West, it is bounded by the states of Jharkhand and Bihar and the North-West, it is bounded by the country Nepal.

• Manipur shares it border with 3 states Nagaland, Mizoram, and Assam.

• Uttrakhand shares its borders with Tibet in the north, Uttar Pradesh in the south, Nepal in the east, Haryana in the west, and Himachal Pradesh in the North West.

Q99. Answer: (d) John von Neumann

The correct answer is option 4) i.e. John von Neumann.

• EDVAC stands for Electronic Discrete Variable Automatic Computer.

• The first stored-program computer was designed by John von Neumann.

• It had a memory to hold both, a stored program as well as data.

• He published the influential First Draft of a Report on the EDVAC where the stored program idea was explained to the world.

Q100. Answer: (a) Pune

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

• The second edition of Khelo India Youth Games was held in Pune.

• Maharashtra topped the Medal tally with 228 medals, whereas Haryana and Delhi claimed the second and third spot.

• Maharashtra bagged 'General Championship of Khelo India 2019' with 85 Gold Medals.

• Students from colleges and universities competed in the games.

• The 1st edition of Khelo India games was held in Delhi in January 2018.

• The Khelo India games are organised by the Ministry of Youth Affairs & Sports.

• 3rd edition of the Khelo India Youth Games will be held at Guwahati from January 18-30, 2020. The Games will see a

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participation of more than 10,000 athletes and officials. It will be conducted in partnership with IOA, SGFI, and Assam as a host state.

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