SSC CHSL 2020 Official Paper 6 (Held On: 13 April 2021 Shift 3) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2020 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Q1. Select the most appropriate ANTONYM of the given word.

Intrepid

(a) Responsive
(b) Cowardly
(c) Sentimental
(d) Unemotional

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

In hot water

(a) In trouble
(b) In suspense
(c) In advantage
(d) In shower

Q3. Select the correct indirect form of the given sentence.

His father said to him, "I cannot allow you to waste my hard-earned money.'

(a) His father told him that he could not allow him to waste his hard-earned money.
(b) His father told him that he cannot allow you to waste his hard-earned money.
(c) His father told him that I cannot allow you to waste my hard-earned money
(d) His father told him that he could not allow you to waste his hard-earned money.

Q4. Select the most appropriate ANTONYM of the given word.

CORROBORATE

(a) verify
(b) oppose
(c) confirm
(d) validate

Q5. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the right order to form a meaningful and coherent paragraph.

A. Mawsmai Cave is one of the most alluring tourist destinations near Cherrapunji in the northeast Indian state of Meghalaya.

B. Other sections of the cave are off the limits for tourists.

C. The cave is quite big. However, the tourists can visit it up to a distance of 150 metres only.

D. The limestone cave has spellbinding beauty and is the only cave which is naturally illuminated to let the tourists cherish natural formations

(a) DCAB
(b) ADCB
(c) ABCD

(d) DBAC

Q6. Select the option that can be used as a one-word substitute for the given group of words.

In exactly the same words as were used originally

(a) Verbatim
(b) Duplication
(c) Repetition
(d) Recurrence

Q7. Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution'.

My niece pick me up from the station if she gets short leave from her office

(a) will pick me up
(b) will have pick me up
(c) No substitution
(d) picks me up

Q8. Select the option which means the same as the group of words given.

One who is easily deceived

(a) incredible
(b) gullible
(c) convertible
(d) Flexible

Q9. Select the most appropriate synonym of the given word.

Deviate

(a) Veer
(b) Imitate
(c) Conform
(d) Replicate

Q10. Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.

Who is responsible for the disorderly state of this room?

(a) are responsible to
(b) is responsible of
(c) No substitution required
(d) are responsible in making

Q11. Select the most appropriate word to fill in the blank.

Can you please _____ me in sorting out these files on my computer?

(a) abet
(b) hinder
(c) assist
(d) connive

Q12. Select the INCORRECTLY spelt word

(a) service
(b) session
(c) serpant
(d) servant

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Q13. Select the option that expresses the given sentence in passive voice.

The maid was dusting the hall when the door-bell rang.

(a) The door-bell rang when the maid is dusting the hall.
(b) The door-bell rang by the maid when the hall was dusted.
(c) The door-bell rang when the hall was being dusted by the maid.
(d) The door-bell rang when the maid was dusting the hall.

Q14. The following sentence has been divided into parts. One of them may contain an error. Select the part that contains the error from the given options. If you don't find any error, mark 'No error' as your answer.

Thousands of people / in Telangana are employed on / the granite companies.

(a) the granite companies
(b) in Telangana are employed on
(c) Thousands of people
(d) No error

Q15. Select the most appropriate meaning of the given idiom.

Make big time

(a) Attain fame and success
(b) Spend more than one earns
(c) Reach earlier than expected
(d) Earn more than needed

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

RECKLESS

(a) attentive
(b) thoughtless
(c) afraid
(d) cautious

Q17. Select the most appropriate option to fill in the blank.

During the tsunami, my family took _____ in a guest house on the hill.

(a) retreat
(b) harbour
(c) refuge
(d) protection

Q18. Select the INCORRECTLY spelt word.

(a) Encourage
(b) Stimulate
(c) Creditable
(d) Manepulation

Q19. Given below are four jumbled sentences. Out of the given options, pick the one that gives their correct order.

A. When John was five years old, a circus came to the village.

B. John saw the circus people and slipped out of the house.

C. After a long search, his father found him among the trained goats and dogs.

D. It put up its tents in front of the Town Hall.

(a) ABDC
(b) ADBC
(c) BDAC
(d) BACD

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Q20. In the given sentence, identify the segment which contains the grammatical error.

The guards in the colony always keep an eye in things going on around.

(a) an eye in things
(b) going on around
(c) always keep
(d) The guards in the colony

Directions

In the following passage, some words have been deleted. Select the most appropriate option to fill in each blank.

The Bhojeshwar Temple is an incomplete Hindu temple in Bhojpur village of Madhya Pradesh, India. The temple's construction is (1) ____ to have started in the 11th century, (2) __ the reign of the Paramara king, Bhoja. The (3) __ was abandoned for unknown reasons, with the architectural plans (4) __ on the surrounding rocks. To understand the construction (5) ____ of 11th-century India, the unfinished materials and the masons' marks have been studied by scholars.

Q21. Select the most appropriate option to fill in blank no. 1.

(a) understood
(b) alleged
(c) believed
(d) trusted

Q22. Select the most appropriate option to fill in blank no. 2.

(a) among
(b) through
(c) during
(d) throughout

Q23. Select the most appropriate option to fill in blank no. 3.

(a) production
(b) composition
(c) construction
(d) creation

Q24. Select the most appropriate option to fill in blank no. 4.

(a) pressed
(b) decorated
(c) scratched
(d) engraved

Q25. Select the most appropriate option to fill in blank no. 5.

(a) orders
(b) fashions
(c) techniques
(d) manners

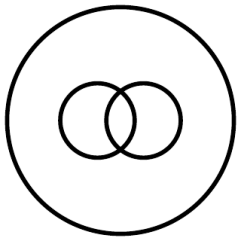
GENERAL INTELLIGENCE

Q26. Which of the following Venn diagrams best represents the relationship among the following classes ?

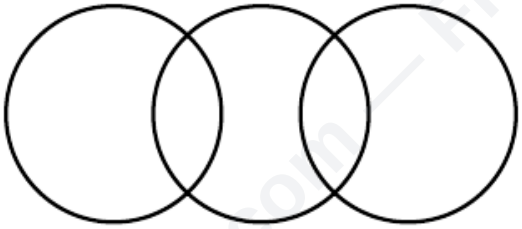
Students, Brothers, Males

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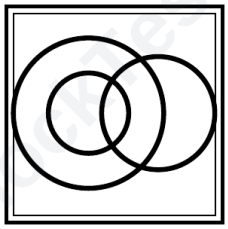
(a)



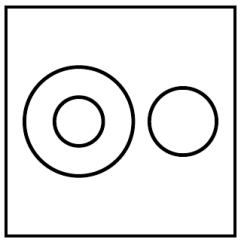
(b)



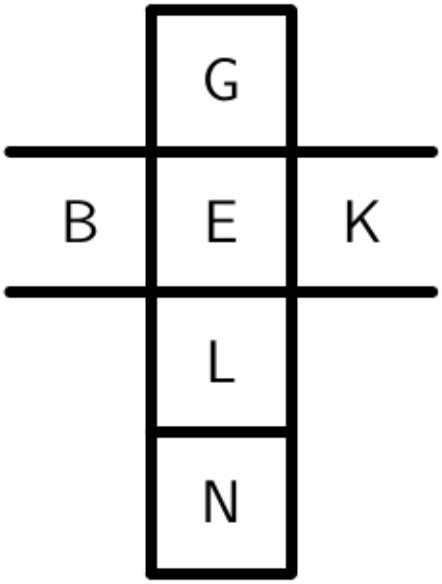
(c)



(d)



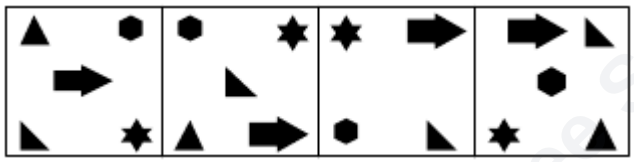
Q27. Which letter will be on the face opposite to the face showing ‘N’ when the given sheet is folded to form a cube?



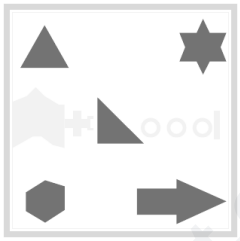
(a) L
(b) G

(c) K
(d) E

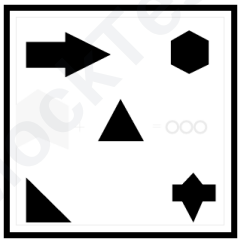
Q28. Select the figure that will come next in the following figure series.



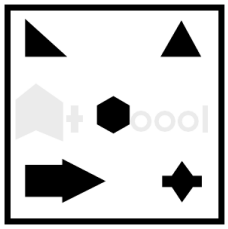
(a)



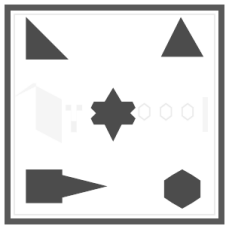
(b)



(c)



(d)



Q29. In a certain code language, SUPER is written as IVKFH. How will LOFTY be written in that language?

(a) BHYMO
(b) BGVOL
(c) DFULO
(d) BGULO

Q30. Select the correct combination of mathematical signs that can sequentially replace the * signs and balance the given equation.

64 * 16 * 22 * 11 * 5 * 70

(a) ×, –, +, ÷, =
(b) –, +, ÷, ×, =
(c) +, –, ÷, ×, =

(d) ×, +, –, ÷, =

Q31. Select the number from among the given options that can replace the question mark (?) in the following series.

12, 15, 75, ?, 738, 749

(a) 259
(b) 155
(c) 90
(d) 82

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

Select the odd one.

(a) OUD
(b) LSZ
(c) TAH
(d) ZGN

Q33. Select the correct mirror image of the given combination when the mirror is placed at MN as shown.



(a)



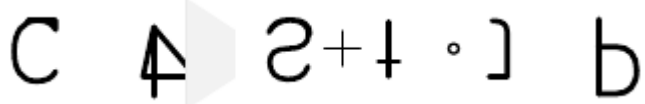
(b)



(c)



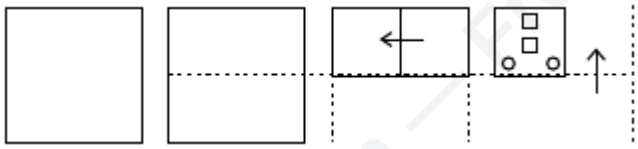
(d)



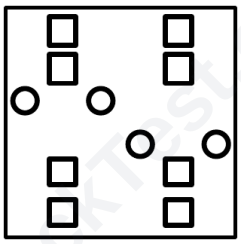
Q34. Kritika had Rs. 21,450 with her. She spent 16% of this amount on conveyance. Then, she spent 50% of the remaining amount on ration. Then, she spent Rs. 991 on internet expenses. How many rupees is left with her now?

(a) Rs. 8,640
(b) Rs. 4,520
(c) Rs. 9,852
(d) Rs. 8,018

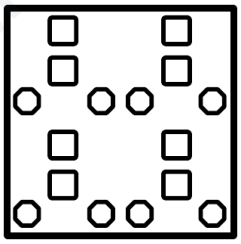
Q35. The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded?



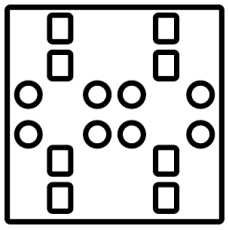
(a)



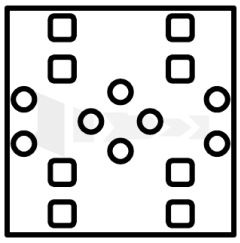
(b)



(c)



(d)



Q36. Four number-pairs have been given, out of which three are alike in some manner and one is different. Select the one that is different.

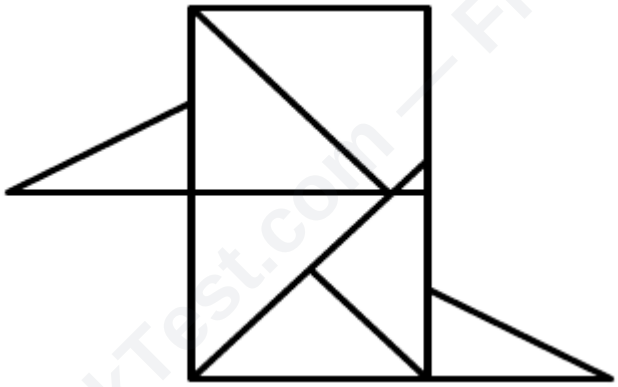
(a) 12 : 120
(b) 13 : 143
(c) 18 : 288
(d) 11 : 111

Q37. Select the option in which the numbers in the set share the same relationship as that shared by the numbers of the given set.

(5, 8, 338)

(a) (9, 7, 256)
(b) (14, 7, 441)
(c) (7, 9, 445)
(d) (11, 8, 722)

Q38. How many triangles are there in the figure given below?



(a) 9
(b) 10
(c) 7
(d) 8

Q39. Select the option that is related to the third word in the same way as the second word is related to the first word.

Allow : Forbid :: Bragging : ?

(a) Swagger
(b) Boast
(c) Sensitive
(d) Modesty

Q40. Select the option that represents the correct order of the given words as they would appear in an English dictionary.

1. Peripheral
2. Presence
3. Peninsula
4. Produce
5. Prevent

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

Q41. Select the option in which the numbers are related in the same way as are the numbers of the following set.

(11, 12, 264)

(a) (16, 18, 576)
(b) (14, 17, 338)
(c) (15, 19, 456)
(d) (20, 17, 480)

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Q42. 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.

Doctor : Cardiologist

(a) Surgeon : Operation
(b) Engineer : Chemical Engineer
(c) Teacher : Education
(d) Nurse : Injection

Q43. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

All cartoons are boxes.

No box is a pen.

Some cartoons are locks.

Conclusions:

I. Some boxes are locks.

II. No pen is a cartoon.

III. No pen is a lock.

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

Q44. Introducing Raveena, Nitish said, "She is the maternal grandmother of my sister's son". How is Raveena related to Nitish?

(a) Sister-in-law
(b) Maternal aunt
(c) Mother-in-law
(d) Mother

Q45. Select the option that is related to the third number in the same way as the second number is related to the first number and the sixth number is related to the fifth number.

5 : 50 : : 6 : ? : : 12 : 288

(a) 64
(b) 72
(c) 92
(d) 82

Q46. In a code language, if TERMINAL is written as 401036261828224, then how will AUDITORY be written in the same language?

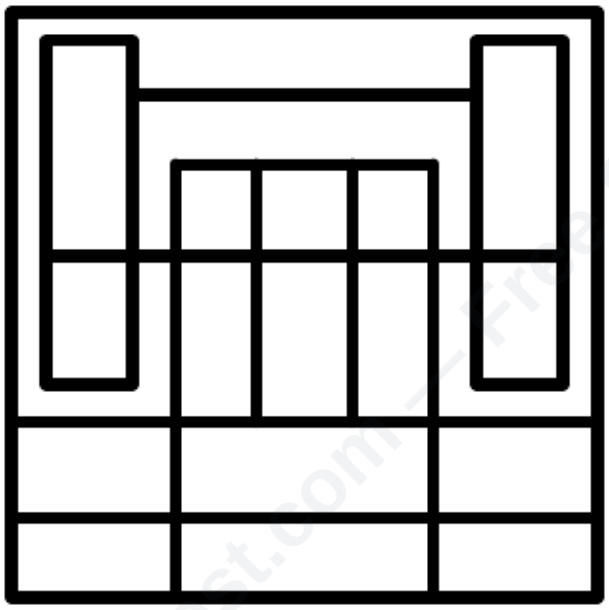
(a) 24461840323652
(b) 24282018301850
(c) 24281840303650
(d) 22180940303625

Q47. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.

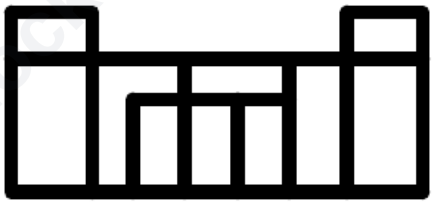
(a) Ampere
(b) Kelvin
(c) Candela
(d) Luminosity

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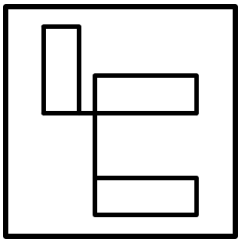
Q48. Select the option that is embedded in the given figure (rotation is NOT allowed).



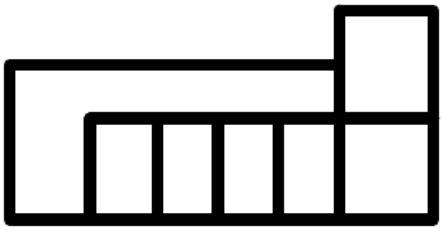
(a)



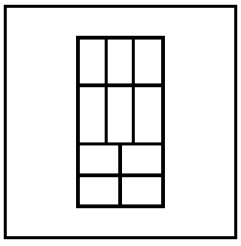
(b)



(c)



(d)



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Q49. In the following question, select the related letters from the given alternatives.

PLASTIC : ALPSCIT :: FESTIVE : ?

(a) SFETVEI
(b) SEFTEVI
(c) SETFEIV
(d) FESTEVI

Q50. Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

Y _ B P _ _ A _ P K _ A B _ K Y _ B P K

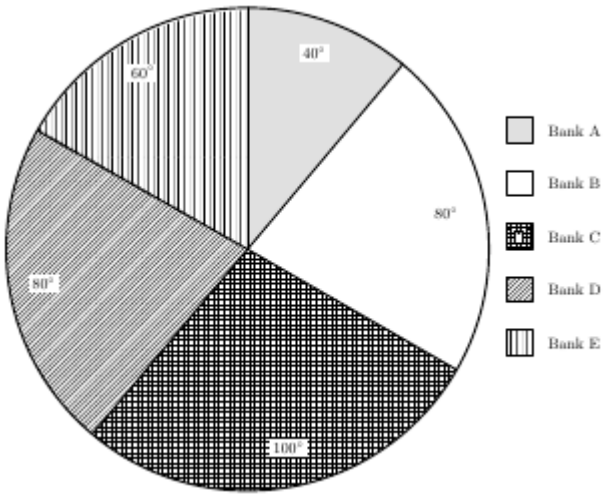
(a) A K Y B Y P A
(b) A K Y B Y P K
(c) A K A Y K P A
(d) Y A K B Y P A

QUANTITATIVE APTITUDE

Q51. How many isosceles triangles with integer sides are possible such that the sum of two of the sides is 16 cm?

(a) 15
(b) 24
(c) 9
(d) 18

Q52. The given pie chart shows the distribution of money spent by Aditya through credit cards of different banks A, B, C, D and E. The total money spent by him through credit cards in a year is Rs.3,60,000.



What is his combined spending through credit cards of bank A and bank C?

(a) Rs. 60,000
(b) Rs. 1,40,000
(c) Rs. 1,00,000
(d) Rs. 1, 80,000

Q53. In an examination of 180 marks of a subject, 75% marks are allocated for theory and the rest for project work. Veena scored 60% in theory. What percentage of marks must she score in the project to achieve an overall 62% marks in the subject?

(a) 66
(b) 68
(c) 64
(d) 65

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Q54. A circle touches all four sides of a quadrilateral PQRS. If PQ = 11 cm. QR = 12 cm and PS = 8 cm. then what is the length of RS ?

(a) 7 cm
(b) 15 cm
(c) 9 cm
(d) 7.3 cm

Q55. If $(3\sqrt{3}\sec\theta + 4\tan\theta)/(3\tan\theta + \sqrt{3}\sec\theta) = 2$, $0° < \theta < 90°$, then the value of $\cos\theta$ will be:

(a) 1/2
(b) $(\sqrt{3})/2$
(c) 1/4
(d) $1/(\sqrt{2})$

Q56. P, Q and R are three points on the circumference of a circle such that QR is a diameter and PQ = PR. If the radius of the circle is 7 cm. then the length of PQ is:

(a) 7 cm
(b) $14\sqrt{2}$ cm
(c) $7\sqrt{2}$ cm
(d) $7\sqrt{3}$ cm

Q57. A man buys 400 oranges for Rs. 2000. How many oranges can be sold for Rs. 260 so that he gets a profit of 30%?

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

Q58. A sum of money amounts to Rs.28,224 in 2 years and to Rs. 29,635.20 in 3 years when invested on compound interest, compounded annually. What is the sum of money?

(a) Rs. 25,600
(b) Rs. 26,000
(c) Rs. 26,880
(d) Rs. 26,095

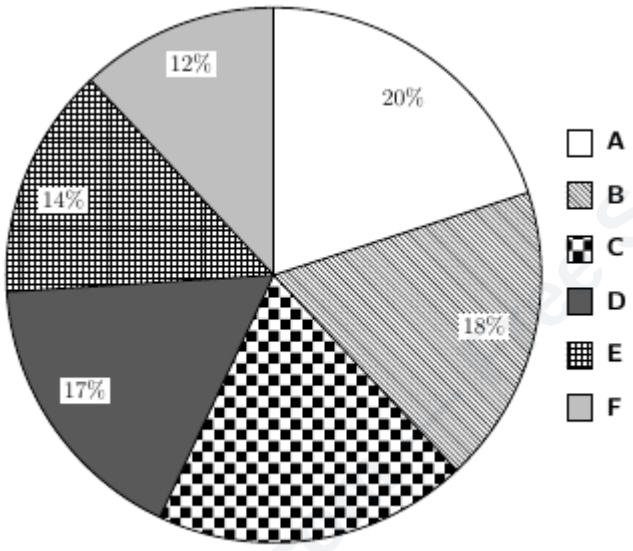
Q59. If $k - 3/k = 5$, then what is the value of $k^2 + 9/(k^2)$?

(a) 31
(b) 11
(c) 25
(d) 19

Q60. Study the given pie chart and table and answer the question that follows.

The pie chart represents the percentage-wise distribution of 300 students of class X in a school in six different sections A, B, C, D, E and F.

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The table shows the number of boys of class X in six different sections A, B, C, D, E and F.

Section	A	B	C	D	E	F
No. of boys	36	26	34	28	•	20

The difference between the central angles of the sectors corresponding to the sections A and F is:

(a) 38.8°
(b) 28.4°
(c) 26.8°
(d) 28.8°

Q61. A merchant announces 25% discount on the price of a shirt. If one needs to have a total rebate of Rs. 875 and the price of each shirt is Rs. 250. then how many shirts should the person purchase?

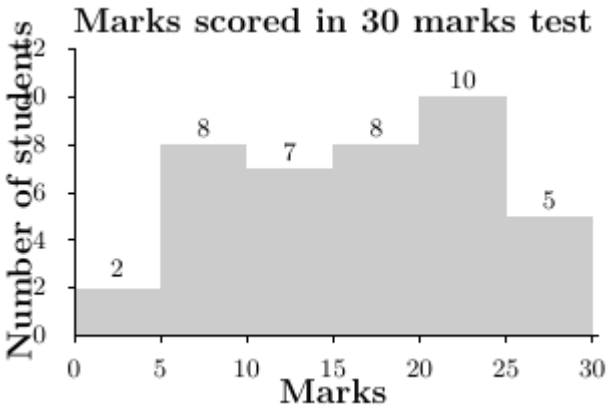
(a) 15
(b) 9
(c) 14
(d) 12

Q62. Solve the following equation.

$2\cos^2\theta + (4 + \sqrt{3})\sin\theta - 2(1 + \sqrt{3}) = 0$ where θ is an acute angle.

(a) 30°
(b) 45°
(c) 15°
(d) 60°

Q63. The given histogram shows the marks scored by 40 students in a test of maximum 30 marks.



What is the percentage of students who scored less than 50% marks ?

(a) 62.5
(b) 17
(c) 42.5
(d) 25

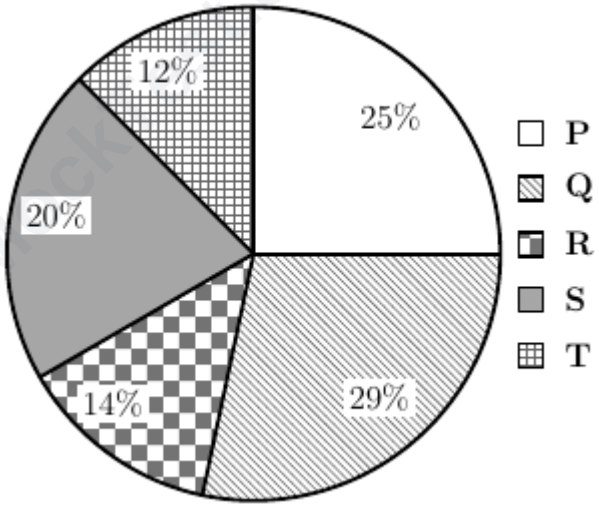
Q64. If 4p = 6q = 9r, then p : q : r is equal to:

(a) 4 : 6 : 9
(b) 15 : 13 : 10
(c) 9 : 6 : 4
(d) 16 : 36 : 81

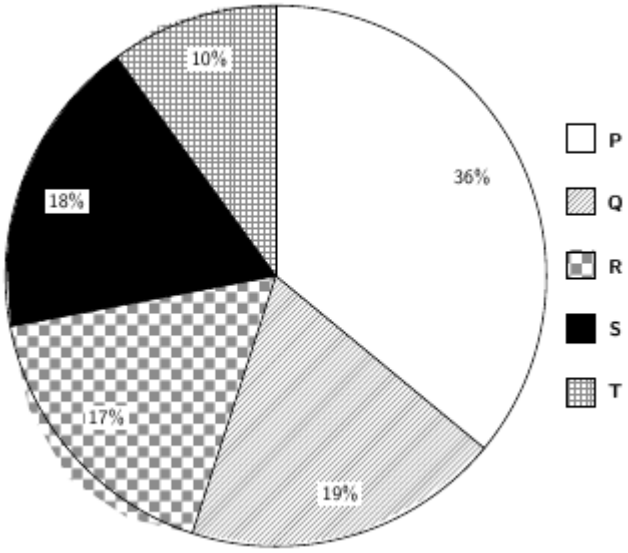
Q65. Study the given pie charts and answer the question that follows.

The pie charts show the distribution of students of graduate and postgraduate levels in five different institutes P, Q, R, S and T in a town.

(i) Total number of students of graduate level in five different institutes = 12400



(ii) Total number of students of postgraduate level in five different institute = 8000



The ratio of the number of students of graduate level in Institutes P and S together to that of postgraduate level hi institutes P and S is:

(a) 28 : 25
(b) 31 : 24
(c) 33 : 25
(d) 31 : 23

Q66. A person moved from place A for place B at 2 p.m. at a speed of 4.5 km/h, stayed at place B for 1.5 hours and returned to place A at a speed of 6 km/h. He came back to place A at 7 p.m. What is the distance between places A and B (in km)?

(a) 8 1/3
(b) 9 6/11
(c) 8 2/5
(d) 9

Q67. The average of the numbers a, b, c and d is 2d + 4. Also, the averages of the numbers a and b; b and c; c and d are 8, 5 and 4, respectively. If e = a + d - 1, then what is the average of the numbers d and e ?

(a) 8.5
(b) 7
(c) 8
(d) 3

Q68. The perimeter and the area of a rectangular sheet are 42 m and 108 m^2, respectively. The length of the diagonal is:

(a) 12 m
(b) 15 m
(c) 10 m
(d) 14 m

Q69. A can do a work in 7 1/2 hours and B can do the same work in 10 1/2 hours. If they work together for 3 1/2 hours, then what part of the work will be left out?

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

Q70. The value of (12.5 + 4/7 of 56 - 12)/(207 ÷ 23 × 4.5) - 21 1/3 × (1/4 + 1/8) is

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

Q71. The side BC of a triangle ABC is extended to a point D. If angle ACD = 117° and angle ABC = 5/8 angle BAC. then what is the measure of angle ABC ?

(a) 36°
(b) 54°
(c) 72°
(d) 45°

Q72. If the number 583p2310q2 is divisible by 11, then what is the value of p × q. where p > q?

(a) 0
(b) 4
(c) 6
(d) 2

Q73. If $x^3 + y^3 = 468$ and x + y = 12, then the value of x^4 + y^4 will be:

(a) 2036
(b) 3025
(c) 3620
(d) 3026

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Q74. If $a^2 + b^2 + c^2 + 170 = 2(8a + 5b - 9c)$, then the value of $\sqrt{(4a + 8b - c)}$ will be:

(a) 8
(b) 12
(c) 9
(d) 15

Q75. What number should be subtracted from

$4(\sin^{\wedge}460° + \cos^{\wedge}430°) - (\tan^2 45° - \cot^2 30°) + \cos^2 45° - \operatorname{cosec}^2 45° + \sec^2 60°$ to get 2 ?

(a) 5
(b) 4
(c) 7
(d) 3

GENERAL AWARENESS

Q76. Which of the following channels or straits is located between the Great Nicobar Island and Indonesia's Sumatra Island?

(a) Grand channel
(b) 10 degree channel
(c) 9 degree channel
(d) Palk Strait

Q77. Who among the following was awarded the 55^(th) Jnanpith Award ?

(a) Amitav Ghosh
(b) Raghuveer Chaudhari
(c) Chandrashekhara Kambara
(d) Akkitham Achuthan Namboothiri

Q78. As of the financial year 2017-18, which of the following was the largest jowar producing state in India?

(a) Assam
(b) Punjab
(c) Maharashtra
(d) Bihar

Q79. Who is the author of the book ‘Hit Refresh’?

(a) Aishwarya Rai
(b) Kazi Nazrul Islam
(c) Jagmohan Bhanver
(d) Satya Nadella

Q80. In which of the following Articles of the Constitution of India is right to property mentioned ?

(a) Article 301 B
(b) Article 300 B
(c) Article 301 A
(d) Article 300 A

Q81. Which is the outermost layer of the Himalayan?

(a) Shivalik Hills
(b) Greater Himalayas
(c) Lesser Himalayas
(d) Trans Himalayas

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Q82. Which of the following states has accorded industry status to sports?

(a) Assam
(b) Mizoram
(c) Bihar
(d) Manipur

Q83. India's first gold medal at Commonwealth Games 2018 was won by:

(a) Vikas Gowda
(b) Deepak Lather
(c) Mirabai Chanu
(d) Sini Jose

Q84. Which of the following government schemes was launched with the objective of achieving inclusive growth, by developing the skills and productive capacity of the rural youth from poor families?

(a) Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)
(b) Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDUGKY)
(c) Pandit Deendayal Upadhyay Shramev Jayate Yojana (PDUSJY)
(d) Mission Indradhanush

Q85. Who has become the first Woman DGP of Kerala?

(a) Jahanbi Phookan
(b) Sangita Reddy
(c) R Sreelekha
(d) Rani Rampal

Q86. Who among the following won Poland's Presidential Election held on 12 July 2020?

(a) Piotr Glinski
(b) Szymon Hołownia
(c) Andrzej Duda
(d) Rafal Trzaskowski

Q87. Where is the Kudremukh iron ore mine located?

(a) Odisha
(b) Karnataka
(c) Bihar
(d) Andhra Pradesh

Q88. What was the outcome of the Gandhi-Irwin Pact of 1931?

(a) Indian National Congress agreed to end the Civil Disobedience Movement.
(b) Bhagat Singh, Rajguru and Sukhdev were to be given a fair trial.
(c) Indian provincial elections were announced.
(d) Indian National Congress agreed on a peaceful partition of Bengal.

Q89. What was the estimation for the fiscal deficit in the financial year 2019-20 ?

(a) 3.2% of GDP
(b) 3.1% of GDP
(c) 3.3% of GDP
(d) 3.6% of GDP

Q90. Who among the following was NOT a Nayanar saint?

(a) Sundarar
(b) Andal
(c) Appar
(d) Sambandar

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Q91. As of January 2021, how many Olympic medals did India win in the sport of weightlifting?

(a) One
(b) Three
(c) Four
(d) Two

Q92. Which of the following languages is an example of fourth generation language in computer programming?

(a) SQL
(b) ALGOL
(c) Pascal
(d) SNOBOL

Q93. With which of the following musical instruments was the musician Bismillah Khan associated?

(a) Harmonium
(b) Shehnai
(c) Sitar
(d) Bansuri

Q94. Which of the following statements regarding the functioning of Rajya Sabha is correct?

(a) Rajya Sabha is not subject to dissolution.
(b) Rajya Sabha is dissolved after the assent of the President of India.
(c) Rajya Sabha is dissolved every second year.
(d) Rajya Sabha is dissolved after the dissolution of the Lok Sabha.

Q95. Prabhavati Gupta, the Queen Regent of the Vakataka empire, was the daughter of Kuberanaga and _____.

(a) Kumaragupta
(b) Chandragupta I
(c) Chandragupta II
(d) Skandagupta

Q96. What is a leaf-shaped flap of cartilage located behind the tongue, at the top of the larynx or voice box called?

(a) Gallbladder
(b) Epiglottis
(c) Ileum
(d) Jejunum

Q97. Cytology is related to the study of:

(a) bacteria
(b) plants
(c) fungus
(d) cells

Q98. Which of the following nations 'unintentionally' shot down a Ukrainian Boeing 737-800 passenger aircraft in January 2020?

(a) Iran
(b) China
(c) The US
(d) North Korea

Q99. Which type of malware is a program or piece of code that is loaded onto a person's computer without his knowledge and runs against his wishes?

(a) computer virus
(b) adware
(c) phishing
(d) trojan horse

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Q100. Tiny pores present on the surface of leaves are known as:

(a) cytoplasm
(b) mitochondria
(c) stomata
(d) nucleus

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (b) Cowardly

The solution is in Hindi. Read it online.

Q2. Answer: (a) In trouble

The solution is in Hindi. Read it online.

Q3. Answer: (a) His father told him that he could not allow him to waste his hard-earned money.

The solution is in Hindi. Read it online.

Q4. Answer: (b) oppose

The solution is in Hindi. Read it online.

Q5. Answer: (b) ADCB

The correct answer is 'ADCB'.

Key Points

• The given question is an example of a Sentence Jumble.

• We know that the first statement of a sentence jumbled question is usually an independent general statement, a noun, a universal fact, starting of a story, starting of an incident or an event, or it starts with 'most' or 'once'.

• Sentence A in the given question is the starting of a story. The author is talking about a tourist site named 'Mwasmai Cave' which is located in 'Meghalaya'.

• Sentence D will be the next sentence because Mawsami Cave is one of the most alluring tourist destinations. It is a limestone cave and it is naturally formed.

• Sentence C will be the next sentence because it further explains the cave. And how far the tourists visit the cave.

• Lastly, Sentence B will be used.

• Thus, the sequence becomes:

• A: Mawsmai Cave is one of the most alluring tourist destinations near Cherrapunji in the northeast Indian state of Meghalaya.

• D: The limestone cave has spellbinding beauty and is the only cave which is naturally illuminated to let the tourists cherish natural formations

• C: The cave is quite big. However, the tourists can visit it up to a distance of 150 metres only.

• B: Other sections of the cave are off the limits for tourists.

• Therefore, as per the points mentioned above, we find that the correct answer is Option 2.

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Correct Sequence: Mawsmai Cave is one of the most alluring tourist destinations near Cherrapunji in the northeast Indian state of Meghalaya. The limestone cave has spellbinding beauty and is the only cave which is naturally illuminated to let the tourists cherish natural formations. The cave is quite big. However, the tourists can visit it up to a distance of 150 metres only. Other sections of the cave are off the limits for tourists.

Q6. Answer: (a) Verbatim

The solution is in Hindi. Read it online.

Q7. Answer: (a) will pick me up

The solution is in Hindi. Read it online.

Q8. Answer: (b) gullible

The solution is in Hindi. Read it online.

Q9. Answer: (a) Veer

The solution is in Hindi. Read it online.

Q10. Answer: (c) No substitution required

The solution is in Hindi. Read it online.

Q11. Answer: (c) assist

The solution is in Hindi. Read it online.

Q12. Answer: (c) serpant

The solution is in Hindi. Read it online.

Q13. Answer: (c) The door-bell rang when the hall was being dusted by the maid.

The solution is in Hindi. Read it online.

Q14. Answer: (b) in Telangana are employed on

The solution is in Hindi. Read it online.

Q15. Answer: (a) Attain fame and success

The solution is in Hindi. Read it online.

Q16. Answer: (b) thoughtless

The solution is in Hindi. Read it online.

Q17. Answer: (c) refuge

The solution is in Hindi. Read it online.

Q18. Answer: (d) Manepulation

The solution is in Hindi. Read it online.

Q19. Answer: (b) ADBC

The correct answer is 'ADBC'.

Key Points

• The given question is an example of a Sentence Jumble.

• We know that the first statement of a sentence jumbled question is usually an independent general statement, a noun, a universal fact, starting of a story, starting of an incident or an event, or it starts with 'most' or 'once'.

• Sentence A in the given question is the starting of a story. It is talking about a circus held in John's village when he was five years old.

• Sentence D will be the next sentence because it tells about the place where the circus was held.

• Sentence B will be the next sentence because it further explains what John saw in the circus.

• Lastly, Sentence C will be used.

• Thus, the sequence becomes:

• A: When John was five years old, a circus came to the village.

• D: It put up its tents in front of the Town Hall.

• B: John saw the circus people and slipped out of the house.

• C: After a long search, his father found him among the trained goats and dogs.

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• Therefore, as per the points mentioned above, we find that the correct answer is Option 2.

Correct Sequence: When John was five years old, a circus came to the village. It put up its tents in front of the Town Hall. John saw the circus people and slipped out of the house. After a long search, his father found him among the trained goats and dogs.

Q20. Answer: (a) an eye in things

The solution is in Hindi. Read it online.

Q21. Answer: (c) believed

The solution is in Hindi. Read it online.

Q22. Answer: (c) during

The solution is in Hindi. Read it online.

Q23. Answer: (c) construction

The solution is in Hindi. Read it online.

Q24. Answer: (d) engraved

The solution is in Hindi. Read it online.

Q25. Answer: (c) techniques

The solution is in Hindi. Read it online.

Q26. Answer: (c) [figure]

The Venn diagram that best represents the relationship among Students, Brothers, and Males is shown below:

All brothers are males. Some Brothers and Males are Students.

Hence, ‘option 3’ is the correct answer.

Q27. Answer: (d) E

When the paper is folded to form a cube, the faces opposite to each other is shown below:

The letter 'E' will be on the face opposite to the face showing ‘N’ when the given sheet is folded to form a cube.

Hence, ‘E’ is the correct answer.

Q28. Answer: (d) [figure]

The figure that will come next in the following figure series is shown below:

The image at the center of the figure always shifts its position in the South-East corner of the next figure.

The image at the South-West corner always shifts its position at the center in the next figure.

Other images in the figure shifts its position in every figure by rotating in 90º anti-clockwise direction.

Hence, ‘option 4’ is the correct answer.

Q29. Answer: (d) BGULO

The pattern followed here is:

Letters of the word are coded according to the equivalent opposite letter of a particular letter of the word.

Similarly,

Hence, ‘BGULO’ is the correct answer.

Q30. Answer: (c) +, –, ÷, ×, =

1. ×, –, +, ÷, =

Given equation: 64 * 16 * 22 * 11 * 5 * 70

After replacing the * by the symbols in the given option, we get:

64 × 16 - 22 + 11 ÷ 5 = 70

=> 1024 – 22 + 2.2 = 70

=> 1026.2 – 22 = 70

=> 1004.2 ≠ 70

2. –, +, ÷, ×, =

Given equation: 64 * 16 * 22 * 11 * 5 * 70

After replacing the * by the symbols in the given option, we get:

64 - 16 + 22 ÷ 11 × 5 = 70

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=> 64 – 16 + 10 = 70
=> 74 – 16 = 70
=> 58 ≠ 70
3. +, –, ÷, ×, =
Given equation: 64 * 16 * 22 * 11 * 5 * 70
After replacing the * by the symbols in the given option, we get:
64 + 16 - 22 ÷ 11 × 5 = 70
=> 64 + 16 – 10 = 70
=> 80 – 10 = 70
=> 70 = 70
4. ×, +, –, ÷, =
Given equation: 64 * 16 * 22 * 11 * 5 * 70
After replacing the * by the symbols in the given option, we get:
64 × 16 + 22 - 11 ÷ 5 = 70
=> 1024 + 22 – 2.2 = 70
=> 1046 – 2.2 = 70
=> 1043.8 ≠ 70
Hence, '+, –, ÷, ×, =' is the correct answer.

Q31. Answer: (d) 82

The logic is:
Hence, '82' is the correct answer.

Q32. Answer: (a) OUD

The pattern followed here is:
According to the alphabetical positions of the letters,
1. OUD → O + 6 = U; U + 9 = D
2. LSZ → L + 7 = S; S + 7 = Z
3. TAH → T + 7 = A; A + 7 = H
4. ZGN → Z + 7 = G; G + 7 = N
Hence, 'OUD' is the odd one out.

Q33. Answer: (c) [figure]

The correct mirror image of the given combination when the mirror is placed at MN is shown below:
Hence, 'option 3' is the correct answer.
Confusion PointsThere is a subtle difference between option 2 and option 3.
The orientation of '3' is different in both options. '3' is vertically rotated in option 2 while it is not in option 3.

Q34. Answer: (d) Rs. 8,018

Amount of money Kritika had = Rs. 21,450
Percentage of money she spent on conveyance = 16%
Amount of money she spent on conveyance = 16/100 × Rs. 21,450 = Rs. 3,432
Amount of money left with Kritika = Rs. (21,450 – 3,432) = Rs. 18,018
Then, she spent 50% of the remaining amount on ration.
Amount of money spent on ration = 50/100 × Rs. 18,018 = Rs. 9,009
Amount of money left with Kritika = Rs. (18,018 - 9,009) = Rs. 9,009
Then, she spent Rs. 991 on internet expenses.
Therefore, amount of money left with her now = Rs. (9,009 – 991) = Rs. 8,018
Hence, 'Rs. 8,018' is the correct answer.

Q35. Answer: (c) [figure]

The paper when unfolded will appear as shown below:
Hence, 'option 3' is the correct answer.

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Q36. Answer: (d) 11 : 111

The logic is:

1. 12 : 120 → 12 × (12 - 2) = 12 × 10 = 120

2. 13 : 143 → 13 × (13 - 2) = 13 × 11 = 143

3. 18 : 288 → 18 × (18 - 2) = 18 × 16 = 288

4. 11 : 111 → 11 × (11 - 2) = 11 × 9 = 99 ≠ 111

Hence, '11 : 111' is the odd one out.

Q37. Answer: (d) (11, 8, 722)

The logic is:

(5, 8, 338) → 338 ÷ (5 + 8) = 338 ÷ 13 = 26 and (5 + 8) × 2 = 13 × 2 = 26

Similarly,

(11, 8, 722) → 722 ÷ (11 + 8) = 722 ÷ 19 = 38 and (11 + 8) × 2 = 19 × 2 = 38

Hence, '(11, 8, 722)' is the correct answer.

Alternate MethodLOGIC: (First Number+ Second Number)^2 = Third Number ÷ 2

In (5, 8, 338) →

(5 + 8)^2 = 338 ÷ 2

13^2 = 169

169 = 169

Similarly;

In (11, 8, 722) →

(11 + 8)2 = 722 ÷ 2

19^2 = 361

361 = 361

Hence, "(11, 8, 722)" is the correct answer.

Q38. Answer: (d) 8

The number of triangles in the given figure is shown below:

Hence, '8' is the correct answer.

Q39. Answer: (d) Modesty

The logic is:

Allow : Forbid → Allow is antonym of Forbid.

Similarly,

Bragging : ? → Bragging is antonym of Modesty.

Hence, 'Modesty' is the correct answer.

Q40. Answer: (d) 3, 1, 2, 5, 4

The option that represents the correct order of the given words as they would appear in an English dictionary is shown below:

3. Peninsula

1. Peripheral

2. Presence

5. Prevent

4. Produce

Hence, '3, 1, 2, 5, 4' is the correct answer.

Q41. Answer: (a) (16, 18, 576)

The logic is:

(11, 12, 264) → 2 × 11 × 12 = 264

Similarly,

(16, 18, 576) → 2 × 16 × 18 = 576

Hence, '(16, 18, 576)' is the correct answer.

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Q42. Answer: (b) Engineer : Chemical Engineer

The logic is:

Doctor : Cardiologist → Cardiologist is a Doctor who specializes in the study or treatment of heart diseases and heart abnormalities.

Similarly,

Engineer : Chemical Engineer → A Chemical Engineer is an Engineer who possesses chemical and mechanical knowledge, and who applies that knowledge to the utilisation, on a manufacturing scale, of chemical action.

Hence, 'Engineer : Chemical Engineer' is the correct answer.

Q43. Answer: (c) Both conclusions I and II follow.

The least possible Venn diagram is:

Conclusions:

I. Some boxes are locks. → True (As, All cartoons are boxes and Some cartoons are locks → Some boxes are locks)

II. No pen is a cartoon. → True (As, All cartoons are boxes and No box is a pen → No pen is a cartoon)

III. No pen is a lock. → False (As, there is no definite relation between lock and pen. Hence, false)

Hence, both conclusions I and II follow.

Q44. Answer: (d) Mother

By using the symbols in the table given below, we can draw the following family tree:

Clearly, Raveena is mother of Nitish.

Hence, 'Mother' is the correct answer.

Q45. Answer: (b) 72

The logic is:

Number : Number^2 × 2

5 : 50 → $5^2 \times 2 = 25 \times 2 = 50$

12 : 288 → $12^2 \times 2 = 144 \times 2 = 288$

Similarly,

6 : ? → $6^2 \times 2 = 36 \times 2 = 72$

Hence, '72' is the correct answer.

Q46. Answer: (c) 24281840303650

The pattern followed here is:

According to the alphabetical positions of the letters,

Similarly,

Hence, '24281840303650' is the correct answer.

Q47. Answer: (d) Luminosity

The description is as follows:

Option	Description	
1.	Ampere	Ampere is SI the unit of electric current.
2.	Kelvin	Kelvin is the SI unit of thermodynamic temperature.
3.	Candela	The Candela is the SI unit of light.
4.	Luminosity	Luminosity is an absolute measure of radiated electromagnetic power, the radiant power emitted by a light-emitting object over time.

Hence, 'Luminosity' is the odd one out.

Q48. Answer: (b) [figure]

The option that is embedded in the given figure when rotation is NOT allowed is shown below:

Hence, 'option 2' is the correct answer.

Q49. Answer: (b) SEFTEVI

The logic is:

Similarly,

Hence, 'SEFTEVI' is the correct answer.

Q50. Answer: (a) A K Y B Y P A

Given sequence: Y _ B P _ _ A _ P K _ A B _ K Y _ B P K

By checking options and substituting accordingly.

1. A K Y B Y P A → Y A B P K / Y A B P K / Y A B P K / Y A B P K

♦ Here Y A B P K is repeated.

2. A K Y B Y P K → Y A B P K / Y A B P K / Y A B P K / Y K B P K

3. A K A Y K P A → Y A B P K / A A Y P K / K A B P K / Y A B P K

4. Y A K B Y P A → Y Y B P A / K A B P K / Y A B P K / Y A B P K

♦ Option (1) gives a pattern of Y A B P K - Y A B P K - Y A B P K - Y A B P K.

Hence, 'A K Y B Y P A' is the correct answer.

Q51. Answer: (b) 24

Concept used :

In a triangle,

Sum of two sides is always greater than the third side

Difference of the two sides is always less than the third side

Calculations :

Let the sides of the triangle be x cm, x cm and y cm.

Case 1 when x + x = 16

So,

$|x - x| < y < x + x$

$\Rightarrow 0 < y < 2x$

$\Rightarrow 0 < y < 16$

So Y can 1, 2, 3,,,,,,,,,15

In this case total 15 triangles are possible

Case 2, when x + y = 16 (x and y are not equal to 8)

$|x - x| < y < x + x$

$\Rightarrow 0 < y < 2x$

$\Rightarrow 0 < y < 2(16 - y)$

$\Rightarrow 0 < y < 32 - 2y$

$\Rightarrow 0 < 3y < 32$

$\Rightarrow 0 < y < 10.33$

Y can take values from 1 to 10 except 8, so here y can take 9 values

Total number of triangles = 15 + 9

$\Rightarrow 24$

Therefore The correct choice is option 2.

Q52. Answer: (b) Rs. 1,40,000

Given:

Total money spent is Rs 360000

Calculations:

Combined spending through bank A & bank C = 140°

Total spending by bank A & bank C = (140°/360°) × 360000

$\Rightarrow 140000$

Therefore The correct choice is option 2.

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Q53. Answer: (b) 68

Given:

In an examination of 180 marks of a subject, 75% marks are allocated for theory and the rest for project work.

Veena scored 60% in theory.

Calculations:

Total marks needed = 62% of 180

=> (62/100) × 180 = 111.6

Total theory marks = 75% of 180 = 135

Total practice marks = 25% of 180 = 45

Marks he got in theory = 60% of 135 = 81

Required extra marks to get 62% = 111.6 - 81 = 30.6

Now, 30.6 as percentage of 45 marks

=> (30.6/45)100 = 68%

Therefore The correct choice is option 2.

Q54. Answer: (c) 9 cm

Given :

A circle touches all four sides of a quadrilateral PQRS. If PQ = 11 cm. QR = 12 cm and PS = 8 cm

Calculations :

If a circle touches all four sides of quadrilateral PQRS then,

PQ + RS = SP + RQ

So,

=> 11 + RS = 8 + 12

=> RS = 20 - 11

=> RS = 9

Therefore The correct choice is option 3.

Q55. Answer: (a) 1/2

Calculations :

(3 √3 sec θ + 4 tan θ)/(3 tan θ + √3 sec θ) = 2,

=> 3√3 secθ + 4 tanθ = 2(3 tanθ + √3 secθ)

=> 3√3 secθ + 4 tanθ = 6 tanθ + 2√3 secθ

=> √3 secθ = 2 tanθ

=> Sinθ = √3/2 (secθ = 1/cosθ and tanθ = sinθ/cosθ)

=> θ = 60°

=> Cosθ = cos60° = 1/2

Therefore The correct choice is option 1.

Q56. Answer: (c) 7√2 cm

Given :

P, Q and R are three points on the circumference of a circle such that QR is a diameter and PQ = PR.

The radius of the circle is 7 cm.

Calculations:

Here in diagram QR is the diameter

angle QPR = 90° (angle in a semicircle opposite to diameter is always 90°)

So ΔPQR is a right angle triangle

Triangle is also isosceles as PQ = PR

So,

PQ = QR/√2 (In an isosceles right triangle the smaller side is (1/√2) of hypotenuse)

=> PQ = 14/√2

=> PQ = 7√2

Therefore The correct choice is option 3.

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Q57. Answer: (a) 40

Shortcut Trick

Cost Price (CP) of 1 orange = 2000 ÷ 400 = Rs. 5.

To gain 30% profit, Selling Price (SP) of 1 orange = 5 × 1.3 = Rs. 6.5.

Number of oranges for Rs. 260 = Total SP ÷ SP per orange.

Number of oranges = 260 ÷ 6.5 = 40.

Therefore The correct answer is 40 oranges.

Alternate Method

Given: Total CP = Rs. 2000, Total Quantity = 400, Profit% = 30%, Target SP = Rs. 260.

Formulas: CP per unit = Total CP ÷ Quantity | SP = CP × (100 + Profit%) ÷ 100 | Quantity = Total SP ÷ SP per unit.

=> CP of 1 orange = 2000 ÷ 400 = Rs. 5

=> SP of 1 orange = 5 × (130 ÷ 100) = Rs. 6.5

=> Required Oranges = 260 ÷ 6.5 = 40

Therefore The correct answer is 40.

Additional Information

Unitary Method in Profit and Loss

Always calculate the price per unit first to simplify calculations when the quantity changes between buying and selling scenarios.

Profit Percentage

Profit is always calculated on the Cost Price (CP) unless stated otherwise. Formula: SP = CP + (Profit% of CP).

Q58. Answer: (a) Rs. 25,600

Given :

A sum of money amounts to Rs.28,224 in 2 years and to Rs. 29,635.20 in 3 years when invested on compound interest, compounded annually.

Concept used :

If the rate of interest is r % compounded annually, then

Total interest for 2 years = r + r + [(r × r)/100]

Calculations :

we know that compound interest in calculate on previous amount not on principle like simple interest

So interest on Rs 28224 = 29635.20 - 28224

=> 1411.2

Interest rate = [(1411.2)/28224] × 100

=> 5%

Total interest for 2 years = 5 + 5 + [(5 × 5)/100] = 10.25%

So,

Principle + 10.25% of principle = 28224

=> 110.25% of principle = 28224

=> Principle = [(28224)/11025] × 10000

=> 25600

Therefore The correct choice is option 1.

Q59. Answer: (a) 31

Shortcut Trick

If the expression is in the form $x - a/x = n$, then the value of $x^2 + a^2/x^2 = n^2 + 2a$.

Given: $k - 3/k = 5$. Here, $x = k$, $a = 3$, and $n = 5$.

Applying the shortcut: $k^2 + 9/k^2 = 5^2 + 2(3) = 25 + 6 = 31$.

Therefore The correct answer is 31.

Alternate Method

Given:

$k - 3/k = 5$

Formula Used:

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

Calculations:

=> $k - 3/k = 5$

Squaring both sides of the equation:

=> $(k - 3/k)^2 = 5^2$

=> $k^2 + (3/k)^2 - 2 \times k \times (3/k) = 25$

=> $k^2 + 9/k^2 - 2 \times 3 = 25$

=> $k^2 + 9/k^2 - 6 = 25$

=> $k^2 + 9/k^2 = 25 + 6$

=> $k^2 + 9/k^2 = 31$

Therefore The correct answer is 31.

Additional Information

Algebraic Identity for Square of a Sum

$(x + y)^2 = x^2 + y^2 + 2xy$. If $x + a/x = n$, then $x^2 + a^2/x^2 = n^2 - 2a$.

Algebraic Identity for Square of a Difference

$(x - y)^2 = x^2 + y^2 - 2xy$. This is used to derive relations between linear and quadratic terms.

Difference of Two Squares

$x^2 - y^2 = (x - y)(x + y)$. Useful for simplifying products of conjugate algebraic terms.

Q60. Answer: (d) 28.8°

Calculations:

Difference between A & F in percent distribution = 20 - 12 = 8%

Let the angle difference be θ

So,

θ/360° = 8/100 (percentage is taken out of 100, similarly angle is calculated on 360°)

=> θ/360° = 2/25

=> θ = 360 × (2/25)

=> θ = 28.8°

Therefore The correct choice is option 4.

Q61. Answer: (c) 14

Given:

The merchant gives a discount of 25% on each shirt having cost price of Rs 250

Calculations:

Discount of each shirt = 25% of 250 = 62.5 rupees

He wants a total of 875 rupees as a discount.

So,

Number of shirts he purchased × discount on each shirt = Total discount

Number of shirts × 62.5 = 875

The number of shirts = 875/62.5 = 14

Therefore The correct choice will be option 3.

Q62. Answer: (d) 60°

Given:

$2 \cos 2\theta + (4 + \sqrt{3})\sin\theta - 2(1 + \sqrt{3}) = 0$

Calculations:

$2\cos^2\theta + (4+\sqrt{3})\sin\theta - 2(1+\sqrt{3}) = 0$

=> $2(1-\sin^2\theta) + 4\sin\theta + \sqrt{3}\sin\theta - 2 - 2\sqrt{3} = 0$ [$(1-\sin^2\theta) = \cos^2\theta$]

=> $2 - 2\sin^2\theta + 4\sin\theta + \sqrt{3}\sin\theta - 2 - 2\sqrt{3} = 0$

=> $2\sin^2\theta - 4\sin\theta - \sqrt{3}\sin\theta + 2\sqrt{3} = 0$

=> $2\sin^2\theta - (4+\sqrt{3})\sin\theta + 2\sqrt{3} = 0$

=> $2\sin^2\theta - 4\sin\theta - \sqrt{3}\sin\theta + 2\sqrt{3} = 0$

=> $2\sin\theta(\sin\theta - 2°) - \sqrt{3}(\sin\theta - 2) = 0$

=> $2\sin\theta = \sqrt{3}$ or $\sin\theta = 2$ (not possible)

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=> Sinθ = √3/2, θ = 60°

Therefore The correct choice is option 4.

Q63. Answer: (c) 42.5

Calculations:

Total marks = 30

50% of marks = 15

Students getting less than 15 marks = 2 + 8 + 7 = 17

Percentage of students getting less than 15 = (17/40)

=> 42.5%

Therefore The correct choice is option 3

Q64. Answer: (c) 9 : 6 : 4

Calculations:

=> 4p = 6q = 9r = k

=> p = k/4, q = k/6, r = k/9

=> p : q : r = k/4 : k/6 : k/9

=> 9 : 6 : 4

Therefore The correct choice is option 3.

Q65. Answer: (b) 31 : 24

Calculations:

Number of graduate from P & S = (20 + 25)% = 45% of 12400

=> 5580

Number of post graduate from P & S = (36 + 18)% = 54% of 8000

=> 4320

Graduate from P and S : post graduate from P & S

=> 5580 : 4320

=> 31 : 24

Therefore The correct choice will be option 2.

Q66. Answer: (d) 9

Alternate MethodDistance = (X × Y)(X + Y) × [Total time]

=> (6 × 4.5)/(6 + 4.5) × (5 - 1.5)

=> (6 × 4.5 × 3.5)/10.5

=> 9 km

Traditional method:

Given:

A person moved from place A for place B at 2 p.m. at a speed of 4.5 km/h, stayed at place B for 1.5 hours and returned to place A at a speed of 6 km/h.

Concept used:

Distance = speed × time

Calculations:

Let the distance from A to B is ' x ' km

His total time of travelling = 5 - 1.5 = 3.5 hours (he took a rest of 1.5 hours)

Now,

Time of travelling from A to B/Ttime of travelling from B to A = Speed from B to A/Speed from A to B (speed and time are inversely proportional)

Time of travelling of A/Ttime of travelling of B = 6/4.5

=> 4/3

Time of travel from A to B = (4/7) × 3.5 = 2 hours

Time of travel from B to A = (3/7) × 3.5 = 1.5 hours

Total distance = 4.5 × 2 = 9km

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Therefore The correct choice is option 4.

Q67. Answer: (b) 7

Given:

The average of the numbers a, b, c and d is 2d + 4.

The averages of the numbers a and b, b and c, c and d are 8, 5 and 4, respectively.

Concept used:

Average = Total of all observation/number of observation

Calculations:

=> (a+b+c+d)/4 = 2d + 4

=> a+b+c+d = 8d + 16

Similarly

=> a + b = 16

=> b + c = 10

=> c + d = 8

=> 8d + 16 = a + b + c + d

=> 8d + 16 = 16 + 8

=> 8d = 8

=> d = 1

Now for a

=> a + 10 + 1 = 24

=> a = 13

So

=> e = a + d - 1

=> e = 13 + 1 - 1

=> e = 13

Now,

=> (e+d)/2 = (13 + 1)/2 = 14/2

=> 7

Therefore The correct choice is option 2.

Q68. Answer: (b) 15 m

Given:

The perimeter & area of rectangle are 42 m & 108 m^2

Calculations:

Area of rectangle = length × breadth = 108

Perimeterof rectangle = 2(length + breadth) = 42

Length + Breadth = 21 m

Let the length be x & breadth '21-x',

So,

Area = 108

(x) × (21-x) = 108

=> $21x - x^2 = 108$

Solving equation we get

x = 12, 9

So

Length = 12 m and breadth = 21 - 12 = 9

Now

Diagonal = $\sqrt{(\text{length}^2 + \text{breadth}^2)}$

=> $\sqrt{(12^2 + 9^2)} = \sqrt{(144 + 81)}$

=> $\sqrt{225}$

=> 15

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The correct choice is option 2.

Q69. Answer: (a) 1/5

Given:

A & B can do a work in 7(1/2) & 10(1/2) hours respectively

Calculations:

Time of A = 15/2 hours

Time of B = 21/2 hours

Let Total work = 105 units [Multiple of 15 and 21]

A per hour work = 105/(15/2) = 14 units

B per hour work = 105/(21/2) = 10 units

Their total work in 7/2 hours = (24) × (7/2) = 84 units

Work left out = 105 - 84 = 21 units

Fraction work left = 21/105 = 1/5^(th)

Therefore The correct choice is option 1.

Q70. Answer: (b) 1

Concept used :

Calculations :

Solve as per the above-given order

=> (12.5 + 4/7 of 56 - 12)/(207 ÷ 23 × 4.5) - 21 1/3 × (1/4 + 1/8)

=> (12.5 + 32 - 12)/(9 × 4.5) - 21 1/3 × (3/8)

=> (12.5 + 20)/(9 × 4.5) - 64/3 × (3/8)

=> 32.5/(40.5) - 8)

=> 32.5/32.5

=> 1

Therefore The correct choice will be option 2.

Q71. Answer: (d) 45°

Given:

The side BC of a triangle ABC is extended to a point D. If angle ACD = 117° and angle ABC = 5/8 angle BAC.

Calculations:

angle ABC = 5x & angle BAC = 8x (angle ABC = 5/8 of angle BAC)

Now,

=> 5x + 8x = 117° (sum of interior opposite angles is equal to exterior angles)

=> 13x = 117°

=> x = 9

Now,

angle ABC = 5x = 45°

Therefore The correct choice will be option 4.

Q72. Answer: (a) 0

Concept used:

For a number to be divisible by 11, the difference of the sum of digits at even & odd places must either be 0 or equal to 11.

Calculations:

For 583p2310q2

5 + 3 + 2 + 1 + q = 8 + p + 3 + 0 + 2

=> 11 + q = 13 + p

=> q - p = 2 (not possible, p > q given)

Condition 2

=> 13 + p - (11 + q) = 11

=> 13 + p - 11 - q = 11

=> p - q + 2 = 11

=> p - q = 9

This condition is only possible when, p = 9 and q = 0, as we can put only single digit numbers

So

=> p × q = 9 × 0

=> 0

Therefore The correct choice is option 1.

Q73. Answer: (d) 3026

Given:

$x^3 + y^3 = 468$

x + y = 12

Calculations:

x^4 + y^4 = $(x^2 + y^2)^2 - 2x^2y^2$ .....(1)

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

$468/12 = (x^2 + y^2 - xy)$

$39 = (x^2 + y^2 - xy)$ .....(2)

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

$144 = x^2 + y^2 + 2xy$

$x^2 + y^2 = 144 - 2xy$ .....(3)

Putting $x^2 + y^2$ in equ.(2)

$39 = (144 - 2xy - xy)$

We get $xy = 35$ & $x^2 + y^2 = 74$

Now,

x^4 + y^4 = $(74)^2 - 2(35)^2$

=> 5476 - 2450

=> 3026

Therefore The correct choice is option 4.

Shortcut TrickHit and trial

Put x = 5 and y = 7

then x + y = 5 + 7 = 12

$x^3 + y^3 = 125 + 343 = 468$, then finally put the x and y value in x4 + y4

=> 5^4 + 7^4

=> 625 + 2401

=> 3026

Q74. Answer: (c) 9

Given:

$a^2 + b^2 + c^2 + 170 = 2(8a + 5b - 9c)$

Concept used :

a2 + b2 + 2ab = $(a + b)^2$

a2 + b2 - 2ab = $(a - b)^2$

Calculations:

a2 + b2 + c2 + 170 = 2(8a + 5b - 9c)

a2 + b2 + c2 - 16a - 10b + 18c + 170 = 0

a2 - 16a + 64 + b2 - 10b + 25 + c2 + 18c + 81 = 0 (Because 64 + 25 + 81 = 170)

$(a - 8)^2 + (b - 5)^2 + (c + 9)^2 = 0$

Now,

(a - 8)2 = a - 8 = 0

=> a = 8,

Similarly,

=> b = 5 & c = -9

Now,

=> √(4a + 8b - c) = [(32 + 40 - (- 9)]

=> √(72 + 9)

=> √81

=> 9

Therefore The correct choice will be option 3.

Q75. Answer: (c) 7

Calculations:

4[√3/2)^4 + (√3/2)^4] - 1 + (√3)² + (1/√2)² - (√2)² + (2)²

=> 4[(9/16) + (9/16)] - 1 + 3 + (1/2) - 2 + 4

=> (9/2) - 1 + 3 + (1/2) + 2

=> 5 + 5 - 1

=> 9

Now let the number be x that must be subtracted to get 2

=> 9 - x = 2

=> x = 7

Therefore The correct choice will be option 3.

Q76. Answer: (a) Grand channel

The correct answer is Grand Channel.

Key Points

• The Grand Channel is located between the Great Nicobar Islands and the Sumatra Islands of Indonesia.

• The Great Channel is located six degrees north of the equator and is popularly known as the 'Six Degree Channel'.

• The width of the Great Channel is 163 km between Indira Point in Great Nicobar and Rondo Island in Aceh Province, Indonesia.

• A deep and clear channel, it is suitable for navigation by large merchant ships.

• The Great Channel is located on the western edge of the Strait of Malacca.

• The three major sea routes of the Indian Ocean meet in the Great Channel originating from the Cape of Good Hope, the Gulf of Aden and the Strait of Hormuz.

• Due to the convergence of sea routes, shipping density remains high in the Great Channel which increases its potential vulnerability to disruption.

Additional Information

• A channel is a wide-open waterway that passes through two landmasses that are located close to each other.

• It differs from the Strait which is a relatively narrow body of water, connecting two large bodies of water.

• Channels created by glaciers form a deep valley between the two landmasses.

• Channels built by people are usually dug from the bottom of shallow waterways to make way for larger ships.

• The main islands under the Andaman and Nicobar Islands group are:

• North Andaman, Middle Andaman, South Andaman, Little Andaman, Car Nicobar, Little Nicobar, Great Nicobar

• Andamans are separated from Nicobar by a 10-degree channel.

• 10 Degree Channel separates the Andaman Islands and the Nicobar Islands from each other in the Bay of Bengal and forms the Indian Union Territory of Andaman and Nicobar Islands.

• It is so named as it lies on the 10-degree line of latitude, north of the equator.

• Andaman and Nicobar Islands situated in the Bay of Bengal, run like a narrow chain in the north-south direction extending between 6'39 N and 14'34 N.

• The Palk Strait is a strait between the Indian state of Tamil Nadu and the Jaffna district of the Northern Province of the island nation of Sri Lanka.

• It connects the Bay of Bengal in the northeast with the Palk Bay in the southwest.

Q77. Answer: (d) Akkitham Achuthan Namboothiri

The correct answer is Akkitham Achuthan Namboothiri.

Key Points

• The prestigious 55th Jnanpith Award has been won by 92-year-old Akkitham Achuthan Namboothiri, an eminent Indian poet-writer of the Malayalam language.

• He has won many literary awards, some of his notable awards include Padma Shri Award in 2017, Sahitya Akademi Award in 1973.

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• The Jnanpith Award is an Indian literary award for individual writers who have written in any of the twenty-three eligible Indian languages as per the Eighth Schedule to the Constitution of India and have made significant contributions to the field of literature.

• This award has been presented annually by the Bharatiya Jnanpith since 1961.

• So far, people working in sixteen languages out of 22 eligible languages have been awarded Jnanpith Awards.

• The first winner of the prestigious Jnanpith Award in 1965 was G.Shankar Kurup, who was awarded in 1950 for his collection of poetry published under the name Odakkuzhal.

Additional Information

• Raghuveer Chaudhari:

• Raghuveer Chaudhari is a novelist, poet, and critic from Gujarat, India.

• He has also worked as a columnist for numerous newspapers, such as Sandesh, Janmabhumi, Nirikshaka, and Divya Bhaskar.

• He has been conferred with India’s highest literary honour, the Jnanpith Award for 2015.

• Amitav Ghosh :

• Amitav Ghosh is an Indian writer and the winner of the 54th Jnanpith award, India’s highest literary honor, best known for his work in English fiction.

• Ghosh's ambitious novels use complex narrative strategies to probe the nature of national and personal identity, particularly of the people of India and Southeast Asia.

• In 2007 he was awarded the Padma Shri, one of India's highest honors, by the President of India.

• In 2019 Foreign Policy magazine named him one of the most important global thinkers of the preceding decade.

• Chandrashekhara Kambara :

• Chandrashekhar Kambra is a prominent Indian poet, playwright, folk songwriter, film director in the Kannada language.

• He has been honored with many prestigious awards including Padma Bhushan in 2021, Jnanpith Award in 2011 for the year 2010, Sahitya Akademi Award, Padma Shri by the Government of India, Kabir Samman, Kalidas Samman and Pampa Award.

• After his retirement, Kambra was nominated as a member of the Karnataka Legislative Council, to which he made significant contributions through his intervention.

Q78. Answer: (c) Maharashtra

The correct answer is Maharashtra.

Key Points

• Jowar is an important crop providing food, feed, and fodder in the arid and semi-arid tropics of the world.

• As of the financial year 2017-18, Maharashtra was the largest jowar producing state in India.

• The demand for jowar for feed purposes is the main driving force in raising global production and international trade.

• It has also been used in the production of alcohol.

• Additional Information

• The Centre currently fixes MSPs for 23 farm commodities

• 7 cereals (paddy, wheat, maize, bajra, jowar, ragi and barley),

• 5 pulses (chana, arhar/tur, urad, moong and masur),

• 7 oilseeds (rapeseed-mustard, groundnut, soyabean, sunflower, sesamum, safflower and nigerseed) and

• 4 commercial crops (cotton, sugarcane, copra and raw jute).

Q79. Answer: (d) Satya Nadella

The correct answer is Satya Nadella.

Key Points

• Satya Nadella is the author of the book 'Hit Refresh'.

• Nadella announced that profits from the book would go to Microsoft Philanthropy and through it to non-profit organizations.

• Hit Refresh is a non-fiction book by Satya Nadella and co-authored by Jill Tracy Nichols and Greg Shaw, with a foreword by Bill Gates published in 2017.

Additional Information

• Satya Narayana Nadella is the chief executive officer (CEO) of Microsoft.

• Before joining Microsoft, Nadella worked at Sun Microsystems, a company that sold computers, software, and information technology services.

• In 2019, Nadella was named Financial Times (FT) Person of the Year, "Microsoft was at risk of technological irrelevance but the chief executive has presided over an era of stunning wealth creation".

• Kazi Nazrul Islam was a Bengali poet, writer, musician, and national poet of Bangladesh.

• Popularly known as Nazrul, he produced a large body of poetry and music with themes that included religious devotion and

rebellion against oppression.

• Nazrul's activism for political and social justice earned him the title of "Bidrohi Kobi" (Rebel Poet).

• His compositions form the avant-garde music genre of Nazrul Geeti (Music of Nazrul)

• Jagmohan Bhanver

• Books: The Curse of Brahma, Think Your Way To Millions, Get Happy Now

Q80. Answer: (d) Article 300 A

The correct answer is Article 300 A.

Key Points

• The right to property is one of the most controversial human rights both in terms of its existence and interpretation.

• The Constitution originally provided for the right to property under Articles 19 and 31.

• Article 19 provides the right of all citizens to acquire, hold and dispose of the property.

• Article 31 provides that "No person shall be deprived of his property except by authority of law."

• It has also been provided that compensation shall be paid to the person whose property is taken for public purposes.

• The 44th Amendment of 1978 removed the right to property from the list of fundamental rights.

• A new provision, Article 300-A, was added to the Constitution, which provided that "no person shall be deprived of his property except by authority of law".

• The article protects a person from the interference of the State and eviction of a person of property unless it is in accordance with the procedure established by law.

Additional Information

• The Supreme Court has recently held that a citizen’s right to own private property is a human right.

• The case was of an 80-year-old woman whose 3.34-hectare land was forcibly taken by the Himachal Pradesh Government in 1967, for constructing a road.

• The Court used its extraordinary jurisdiction under Article 136 and Article 142 of the Constitution to direct the government to pay the woman compensation of 1 crore rupees.

• The Bench referred to an earlier verdict in the State of Haryana v. Mukesh Kumar case (2011) wherein it was held that the right to property is not only a constitutional or statutory right but also a human right.

• The state cannot trespass into the private property of a citizen and then claim ownership of the land in the name of ‘adverse possession.

• Article 301 Constitution of India:

• Freedom of trade, commerce, and intercourse. Subject to the other provisions of this Part, trade, commerce, and intercourse throughout the territory of India shall be free.

Q81. Answer: (a) Shivalik Hills

The correct answer is Shivalik Hills.

Key Points

• The Shivalik Hills are a mountain range in the Outer Himalayas that extends about 2,400 km from the Indus River.

• It flows west-northwest for an additional 1,000 miles from the Tisza River in the state of Sikkim, through Nepal, into northwestern India and northern Pakistan.

• Although only 10 miles wide in places, the range is a typical peak of 3,000 to 4,000 feet.

• The Shivalik is spread over a width of 10 t0 50 km and maintains an altitude of between 900 and 1110 metres.

• These ranges are composed of loose sediments and the valleys are usually covered with heavy gravel and alluvium.

Additional Information

• The Himalayas are considered to be the tallest and the youngest furrow mountain ranges or latitudes of the world.

• Their geological pattern is young, shaky, and flexible since the Himalayan uplift is an endless cycle, making them one of the tallest earthquake-prone areas or regions of the world.

• The outer Himalayas are also identified as Manak Parbat in historical times.

• The Himalayas consist of three parallel ranges, the Greater Himalayas known as the Himadri, the Lesser Himalayas called the Himachal, and the Shivalik hills, which comprise the foothills.

• Himalayan Ranges

• A series of several parallel or convergent ranges.

• The ranges are separated by deep valleys from which a highly dissected topography [(of a plateau or upper part) is divided by several deep valleys].

• The southern slopes have steep slopes and the northern slopes have comparatively gentle slopes. [The ascent of Mount Everest

is less busy than on the north side. But China imposes restrictions so climbers take the southern slopes from Nepal]

• Most of the Himalayan ranges fall in India, Nepal and Bhutan.

• The northern slopes are partly located in Tibet (Trans-Himalaya) while the western end lies in Pakistan, Afghanistan and Central Asia.

• The Himalayas between Tibet and the Gangetic Plain are a sequence of three parallel ranges.

Q82. Answer: (b) Mizoram

The correct answer is Mizoram.

Key Points

• The Mizoram Cabinet has recently granted industry status to sports, amidst the gradual lifting of lock-down, following the sports policy in many countries

• This decision is expected to promote employment generation in the state.

• This was announced by the state's Chief Minister Zoramthanga.

• The Sports and Youth Services department had advised the State government to grant the status.

• Mizoram has a good group of Football players who represent several important clubs.

• The Mizos are sports-loving people and football is their favorite.

• Granting industry status to sports is expected to help the state in meeting the requirements of sportspersons and others involved in the sector.

Additional Information

• Mizoram is located in the northeastern part of the country.

• It is bounded by Myanmar (Burma) to the east and south and Bangladesh to the west and by the states of Tripura to the northwest, Assam to the north, and Manipur to the northeast.

• The name of the state is derived from "Mizo", the self-described name of the native inhabitants, and "Ram", which in the Mizo language means "land."

• Thus "Mizo-ram" means "land of the Mizos".

• Capital - Aizawl

Q83. Answer: (c) Mirabai Chanu

The correct answer is Mirabai Chanu.

Key Points

• Weightlifter Mirabai Chanu was the gold medalist for India on day one of Commonwealth Games 2018 in the women's 48kg category.

• Chanu won the first gold medal for India by lifting a total of 196kg, 86kg in snatch, and 110kg in clean and jerk.

• She broke the CWG record in the snatch, pulling off clean lifts in all three of her attempts (80kg, 84kg, and 86kg).

• She broke the sporting record for the weight category; The effort also marked his personal best.

• She was awarded the Padma Shri by the Government of India for his contribution to sports.

• She was awarded the Major Dhyan Chand Khel Ratna Award by the Government of India in 2018.

• Amanda Braddock won the bronze medal at CWG 2018.

Additional Information

• India competed at the 2018 Commonwealth Games at Gold Coast, Australia from 4 to 15 April 2018.

• It was India's 18th appearance at the Commonwealth Games.

• With 26 Gold medals and a total of 66 medals, India finished 3rd for the tournament.

• It was India's best position since the 2010 Commonwealth Games, which they hosted.

• Weightlifter Sanjita Chanu bagged India's second gold medal by topping the women's 53kg category.

• Weightlifter Poonam Yadav became the third woman to win gold for India by topping the women's 69kg category at the CWG 2018.

• Weightlifter Venkat Rahul Ragala has become the fourth Indian to win a gold medal in the men's 85kg category.

• Weightlifter Satish Kumar Shivalingam won India's third gold medal in the men's 77kg category.

Q84. Answer: (b) Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDUGKY)

The correct answer is Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDUGKY).

• The Ministry of Rural Development (MoRD) announced the Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) Antyodaya Diwas, on 25th September 2014.

• DDU-GKY is a part of the National Rural Livelihood Mission (NRLM), tasked with the dual objectives of adding diversity to the

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incomes of rural poor families and catering to the career aspirations of rural youth.

• It is a demand-driven placement-linked skill training initiative working under the National Rural Livelihood Mission (NRLM).

• It uses skill training and placement in wage employment as a tool to diversify income and enable sustained upward movement out of poverty.

• It was launched with the objective of achieving inclusive growth, by developing the skills and productive capacity of the rural youth from poor families.

• Beneficiaries:

• DDU-GKY is uniquely focused on rural youth between the ages of 15 and 35 years from poor families.

Additional Information

• Objective:

• Adding diversity to the incomes of rural poor families

• Cater to the career aspirations of rural youth.

• Alumni Meet:

• Alumni meeting is an important component of the scheme.

• The Alumni meets provide healthy ground for experience sharing by the former trainees with their present counterparts on topics like placements, career goals, challenges they faced in finding employment before undertaking the training, and the benefits they reaped after.

• Some of the former trainees are also felicitated at the events for their exemplary performances at their workplaces.

• Coverage:

• The program is currently being implemented in 27 States and 3 Union Territories and has over 2198 Training Centres in 1822 projects, in partnership with 839 Project Implementing Agencies conducting training across 56 sectors, and over 600 job-roles.

Q85. Answer: (c) R Sreelekha

The correct answer is R Sreelekha.

Key Points

• Ms. Sreelekha, belonging to the 1987 batch, is the first woman officer to be elevated as a DGP.

• The Cabinet elevated Additional Directors General of Police Sankar Reddy and R. Sreelekha to the post of Director Generals of Police.

• The government has posted Ms. Sreelekha, the first woman IPS officer in the State, as the Director-General, Fire and Rescue Department.

• Ms. Sreelekha, belonging to the 1987 batch, is the first woman officer to be elevated as a DGP.

• She is due for retirement in December.

Additional Information

• Mr. Reddy has been posted as the Road Safety Commissioner. DGPs Jacob Thomas and A. Hemachandran are due for retirement on May 31.

• R. Sreelekha is an officer in the Indian Police Service and the First Lady Officer of the IPS from Kerala, India.

• Sreelekha is also an author and now running a successful YouTube channel- “SASNEHAM SREELEKHA” to share her experiences as a police officer

Q86. Answer: (c) Andrzej Duda

The correct answer is Andrzej Duda.

Key Points

• Andrzej Duda's first term ended on 6 August 2020, when he confirmed his oath of office before the National Assembly, a joint session of the Sejm and Senate, and began his second term.

Additional Information

• Andrzej Sebastian Duda is a Polish lawyer and politician who has served as President of Poland since 2015.

• He was elected to the Sejm from 2011 to 2014 and European Parliament from 2014 until 2015.

• On 26 May 2015, Duda resigned his party membership and the European Parliament as the president-elect.

• In the first round of voting, Duda received 5,179,092 votes – 34.76% of valid votes.

• In the second round of voting, he officially received 51.55% of the vote, defeating the incumbent president Bronisław Komorowski, who received 48.45% of the vote.

Q87. Answer: (b) Karnataka

The correct answer is Karnataka.

• KIOCL Limited (formerly Kudremukh Iron Ore Company Limited) is a Government of India Undertaking established in the year

1976 and is operating Iron Ore Pellet Plant and Pig Iron Plant at Mangalore, Panambur, Karnataka.

Key Points

• Kudremukh Iron Ore Company Limited is a state-owned iron ore producer with its headquarters and administrative activities in Bangalore, Karnataka.

• It has a pelletization plant at Mangalore and an iron ore mine located in Kudremukh National Park, Chikmagalur district, Karnataka.

• It is owned by the Ministry of Steel, Government of India.

• Kudremukh mine is one of the largest iron ore mines in the world.

• The plant was shut down in 2011 but in 2014 the plant resumed production and export of pellets run on ores supplied by NMDC Ltd.

• There were plans to resume captive mining operations in 2017, now at Sanduru in Bellary district.

• The pellets have been shipped to countries such as China, Iran, Japan and Taiwan.

• Kudremukh will become the world's largest iron ore-producing mine within five years.

Q88. Answer: (a) Indian National Congress agreed to end the Civil Disobedience Movement.

The correct answer is Indian National Congress agreed to end the Civil Disobedience Movement.

Key Points

• The Gandhi-Irwin Pact is the name given to a political agreement concluded on 5 March 1931 by Mahatma Gandhi and the then Viceroy of India, Lord Irwin.

• In 1930, the Salt Satyagraha was organized and India and Gandhi attracted worldwide attention.

• The British government in India was criticized for its unjust treatment of Indians.

• Gandhi and many other leaders were imprisoned along with thousands of Indians.

• Lord Irwin wanted this issue to end.

• Therefore, Gandhi was released from prison in January 1931.

• The then Congress President Sardar Vallabhbhai Patel authorized Gandhi to hold talks with Lord Irwin.

• The Indian National Congress agreed to end the Civil Disobedience Movement.

• The INC participated in the Second Round Table Conference which was held in September-December in 1931.

Additional Information

• The pact made the British Government concede some demands.

• To withdraw all ordinances and prosecutions.

• To release all the political prisoners.

• To restore the confiscated properties of the satyagarhis.

• To permit the free collection or manufacture of salt.

Q89. Answer: (c) 3.3% of GDP

The correct answer is 3.3% of GDP.

Key Points

• 3.3% of GDP was the estimation for the fiscal deficit in the financial year 2019-20.

• Fiscal deficit is the difference between income and expenditure of the Government.

• One of the key sources to bridge the deficit is borrowing.

• Reasons for the higher deficit include a fall in nominal GDP growth rate to 7.2 percent and a decline in not only tax but also non-tax revenue.

• As a result, the fiscal deficit was over Rs. 9.35-lakh crore against the revised Budget estimate of Rs. 7.66-lakh crore.

• A higher deficit also reflects much lower revenue from disinvestment and spectrum.

• At the same time cut in corporate tax, mid-year has an impact of over Rs. 1.45 lakh crore.

Additional Information

• Fiscal Deficit = Total expenditure of the government (capital and revenue expenditure) – Total income of the government (Revenue receipts + recovery of loans + other receipts).

• Expenditure component: The government in its Budget allocates funds for several works, including payments of salaries, pensions, etc. (revenue expenditure) and creation of assets such as infrastructure, development, etc. (capital expenditure).

• Income component: The income component is made of two variables, revenue generated from taxes levied by the Centre and the income generated from non-tax variables.

• The taxable income consists of the amount generated from corporation tax, income tax, customs duties, excise duties, GST, among others.

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• Meanwhile, the non-taxable income comes from external grants, interest receipts, dividends and profits, receipts from Union Territories, among others.

• It is different from revenue deficit which is only related to revenue expenditure and revenue receipts of the government.

• The government meets the fiscal deficit by borrowing money.

• In a way, the total borrowing requirements of the government in a financial year are equal to the fiscal deficit in that year.

• A high fiscal deficit can also be good for the economy if the money spent goes into the creation of productive assets like highways, roads, ports, and airports that boost economic growth and result in job creation.

• The Fiscal Responsibility and Budget Management Act, 2003 provides that the Centre should take appropriate measures to limit the fiscal deficit up to 3% of the GDP by 31st March 2021.

Q90. Answer: (b) Andal

The correct answer is Andal.

Key Points

• The Nayanars and Alvars were the Tamil poet-saints who played a key role in propagating the Bhakti Movement in Southern India during the 5th-10th Centuries.

• The Nayanars were a group of 63 saints devoted to Lord Shiva who lived during the 6th to 8th centuries CE.

• The Alwars were Tamil poet-saints of South India who espoused devotion to the Lord Vishnu or his avatar Lord Krishna in their songs of longing, and service.

• The names of the Nayanars were first compiled by Sundarar.

• When we study the lives of the great Four Teachers (Appar, Sundarar, Manickavachagar, and Sambandar) and realize that these great Jnanis, too, were great Bhaktas who loved to visit the temples and sing the glories of the Lord.

Additional Information

• Sundarar :

• Sundarar means "the lovely, handsome one".

• Sundarar (Murthi) Nayanar flourished in the 8th century.

• He was a great devotee of Lord Siva.

• He is one of the Tamil Samaya Acharyas (four Tamil religious Teachers).

• Sundarar (Murthi) Nayanar was born in Thiru Navalur where the entire atmosphere was full of spiritual vibrations and Saivism was well established.

• Sambandar:

• He was a Saiva poet-saint of Tamil Nadu who lived sometime in the 7th century CE.

• He is one of the most prominent of the sixty-three Nayanars, Tamil Saiva bhakti saints who lived between the sixth and the tenth centuries CE.

• He was a contemporary of Appar, another Saiva poet-saint.

Q91. Answer: (a) One

The correct answer is One.

Key Points

Notable Performance at Summer Olympics

Year	Event	Player	Result
2000			
Women's 69 kg	Karnam Malleswari	3rd	
Women's 53 kg	Sanamacha Chanu	6th	
2004			
Women's 48 kg	Kunjarani Devi	4th	
2012			
Women's 48 kg	Ngangbam Soniya Chanu	7th	
2020			
Women's 49 kg	Saikhom Mirabai Chanu	2nd	

Important Points

• Mirabai Chanu won a silver medal at Tokyo Olympics 2020 on 24 July 2021.

Additional Information

• India has won 7 medals in Tokyo Olympics 2021 - 1 Gold Medal, 2 Silver medals, and 4 Bronze medals.

• The 23-year old Neeraj Chopra won India's first-ever Gold in Athletics after finishing on top of the podium in the Javelin Throw.

• He also became only the second individual Gold medalist for the country at the Summer Olympics.

• Abhinav Bindra had won the country's first individual Gold after winning the 10m Air Rifle event at the 2008 Beijing Olympics

• PV Sindhu wins bronze medal in women's singles shuttler PV Sindhu becomes first Indian woman to win two individual medals at Olympic Games.

• She had won the Silver at the 2016 Games held at Rio. She also became the first Indian player to win the World Badminton Championship and two Olympic medals across genders.

• She had won the World Championship in 2019.

• Ravi Kumar Dahiya gets India a Silver medal in the Tokyo Olympics.

• Lovlina Borogohain fetched a Bronze medal for India in Tokyo Olympics.

• Indian Hockey men team is also won the Bronze medal.

Q92. Answer: (a) SQL

The correct answer is SQL.

Key Points

• Computer language is a formal language used in communication with a computer.

• In a Programming Language, a formal language is designed to communicate instructions to a machine, particularly a computer.

• There are five generations of Programming languages.

• First Generation Languages :

• These are low-level languages like machine language.

• Second Generation Languages :

• These are low-level assembly languages used in kernels and hardware drives.

• Third Generation Languages :

• These are high-level languages like C, C++, Java, Visual Basic, and JavaScript.

• Fourth Generation Languages :

• These are languages that consist of statements that are similar to statements in the human language.

• These are used mainly in database programming and scripting.

• Examples of these languages include Perl, Python, Ruby, SQL, MatLab.

• SQL (structured query language) is a language for specifying the organization of databases (collections of records).

• Databases organized with SQL are called relational because SQL provides the ability to query a database for information that falls in a given relation.

Additional Information

• Fifth Generation Languages :

• These are the programming languages that have visual tools to develop a program.

• Examples of fifth-generation languages include Mercury, OPS5, and Prolog.

• The first two generations are called low-level languages.

• The next three generations are called high-level languages.

• Pascal is a procedural programming language that supports structured programming and data structures to encourage good programming practices.

• Pascal was originally developed in 1970 by Niklaus Wirth and is named after the famous French mathematician Blaise Pascal.

• ALGOL is an acronym that stands for ALGOrithmic Language.

• It is a computer language designed specifically for calculation.

• It was developed in the late 1950s by an international committee and was meant to be a universal computing tool.

Q93. Answer: (b) Shehnai

The correct answer is Shehnai.

Key Points

• Ustad Bismillah Khan was associated with the Shehnai which is a subcontinental wind instrument in India.

• This instrument is played in special ceremonies such as receptions, marriages and festivals.

• At the age of six, he moved to Varanasi in the state of Uttar Pradesh to teach his maternal uncle Ali Baks Vilayatu Khan, a

shehnai player associated with the Kashi Vishwanath temple.

• At the age of 14, Bismillah accompanied his uncle to the Allahabad Sangeet Sammelan.

• In 1932, at the age of 16, he entered into an arranged marriage with a cousin.

• He died of cardiac arrest on 21 August 2006.

Additional Information

• String instruments and Indian musicians who play them:

• Santoor: Pt Shiv Kumar Sharma, Bhajan Sopori

• Sarod: Allauddin Khan, Ali Akbar Khan, Amjad Ali Khan, Buddhadev Dasgupta, Bahadur Khan, Sharan Rani, Zarin S Sharma

• Sitar: Pt Ravi Shankar, Shahid Parvez Khan, Budhaditya Mukherjee, Anushka Shankar, Hara Shankar Bhattacharya, Nikhil Banerjee, Vilayat Khan, Mushtaq Ali Khan

• Surbahar: Annapurna Devi, Sajjad Hussain

• Been: Asad Ali Khan, Zia Moin-ud-din Khan

• Veena: Zia Mohiuddin Dagar, Ayyagari Syamasundaram, Doraiswamy Iyengar, Chittibabu, Emani Sankara Shastri, Dhanammal, KR Kumaraswamy, Sundaram Balachandrer

• Rudra Veena: Asad Ali Khan

Q94. Answer: (a) Rajya Sabha is not subject to dissolution.

The correct answer is Rajya Sabha is not subject to dissolution.

Key Points

• The Rajya Sabha is not subject to dissolution, with one-third of its members retiring every other year.

• The Rajya Sabha should have no more than 250 members - 238 members represent states and union territories, and 12 members are nominated by the President.

• The members of the Rajya Sabha are elected by the elected members of the Legislative Assemblies of the States and Union Territories in accordance with the system of proportional representation by means of the single transferable vote.

• The Rajya Sabha can also initiate legislation and a bill is required to be passed by the Rajya Sabha to become a law.

• The Rajya Sabha is the representative of the states in the union legislature.

• The Rajya Sabha has powers that protect the rights of the states against the union.

• Smt. Rukmini Devi Arundale was the first woman nominated member of the Rajya Sabha.

Additional Information

• The Lok Sabha has certain powers that make it more powerful than the Rajya Sabha.

• Motions of no confidence against the government can be introduced and passed in the Lok Sabha.

• If passed by a majority vote, the Prime Minister and the Council of Ministers resign collectively.

• Parliamentary Committees of the Rajya Sabha may be categorized as ad hoc Committees and Standing Committees.

• Ad hoc Committees are those Committees that may be constituted by the House or by the Chairman or by the Presiding Officers of both Houses jointly to consider and report on specific matters.

• Such Committees become functus officio as soon as they complete their work.

• Standing Committees are permanent committees whose members are either elected by the House or nominated by the Chairman every year or from time to time.

• These are: Business Advisory Committee, General Purposes Committee, Committee on Government assurances, House Committee, Committee on Petitions, Committee on Subordinate Legislation, Committee on Papers Laid on the Table, Committee of Privileges, Committee on Rules, Committee on Ethics, Committee on Provision of Computers to Members of Rajya Sabha, Committee on Member of Parliament for Local Area Development Scheme and the Department-related Standing Committees

Q95. Answer: (c) Chandragupta II

The correct answer is Chandragupta II.

Key Points

• Prabhavati Gupta was the daughter of Chandragupta II and her mother was Kuberanaga, of the Naga.

• One of the most important rulers in early Indian history.

• She was married to Rudrasena II of the Vakataka Dynasty.

• After his death in 390, she ruled as regent for her two young sons, Divakarasena and Damodarasena for twenty years with the help of her father.

• Chandragupta II ascended the throne after Ramgupta and assumed the title 'Vikramaditya'.

• He was a patron of art and literature since his court was adorned with Navaratnas including Kalidasa, the Shakespeare of India.

• He was the first Gupta ruler to have issued silver coins.

Additional Information

• Chandragupta II :

• He is also known by his title Vikramaditya was one of the most powerful emperors of the Gupta Empire in northern India.

• The Gupta empire reached its zenith during the rule of Chandragupta.

• The legendary figure of Vikramaditya is probably based on Chandragupta II (among other kings), and the noted Sanskrit poet Kalidasa may have been his court poet.

• The Gupta Empire :

• The Gupta Empire was an ancient Indian empire that existed from the early 4th century CE to the late 6th century CE.

• At its zenith, from approximately 319 to 467 CE, it covered much of the Indian subcontinent.

• This period is considered the Golden Age of India by historians.

• The ruling dynasty of the empire was founded by the king Sri Gupta; the most notable rulers of the dynasty were Chandragupta I, Samudragupta, and Chandragupta II alias Vikramaditya.

Q96. Answer: (b) Epiglottis

The correct answer is Epiglottis.

Key Points

• The epiglottis is a leaf-shaped flap of cartilage located behind the tongue, at the top of the larynx, or voice box.

• The main function of the epiglottis is to seal off the windpipe during eating, so that food is not accidentally inhaled.

• It stays open during breathing, allowing air into the larynx.

• During swallowing, it closes to prevent aspiration of food into the lungs, forcing the swallowed liquids or food to go along the esophagus toward the stomach instead.

• The epiglottis is made of elastic cartilage covered with a mucous membrane, attached to the entrance of the larynx.

• It projects upwards and backward behind the tongue and the hyoid bone.

• The epiglottis may be inflamed in a condition called epiglottitis, which is most commonly due to the vaccine-preventable bacteria Haemophilus influenzae.

Additional Information

• The larynx is a cartilaginous skeleton, some ligaments, and muscles that move and stabilize it, and a mucous membrane.

• The laryngeal skeleton is nine cartilages:

• the thyroid cartilage, cricoid cartilage, epiglottis, arytenoid cartilages, corniculate cartilages, and cuneiform cartilages.

• The first three are unpaired cartilages, and the latter three are paired cartilages.

Q97. Answer: (d) cells

The correct answer is Cells.

Key Points

• Cytology is the study of individual cells of the body, in contrast to histology which is the study of whole human tissue.

• The human body is made up of millions of cells and these can be sampled and viewed under a microscope after appropriate preparation to help diagnose medical conditions.

• This involves looking at individual cells for abnormal changes in both the nucleus and the cytoplasm (body) of the cell.

• The nucleus contains the genetic material that controls the cell and determines what type of cell it will become, but also controls its behavior.

• Cytology is widely used in medicine for the prevention and diagnosis of disease.

Additional Information

• Robert Hooke was the first scientist to use the word 'cell' in 1665 when he looked at slices of cork through a lit compound microscope and observed very small, irregular boxes that reminded him of tiny rooms, or cells.

• Hooke wrote about his findings and drew the structures he saw in his book Micrographia, which was published in 1665.

• The earliest cell theory was developed in 1838 by plant scientist Matthias Schleiden and animal scientist Theodor Schwann.

• They each came to the same conclusion that the living things they studied were composed of cells.

Q98. Answer: (a) Iran

The correct answer is Iran.

Key Points

• Iran admits to ‘unintentionally’ shot down a Ukrainian Boeing 737-800 passenger aircraft in January 2020, the result of human error.

• The Iranian government later declared that the shooting-down was a “disastrous mistake” by forces who were on high alert

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during a regional confrontation with the United States.

• The Boeing 737-800 airliner, flight PS752, crashed five minutes after takeoff from Tehran's Imam Khomeini airport on Wednesday, Jan. 8.

• just hours after Iran fired a barrage of missiles at U.S. targets in Iraq.

• Iran's President Hassan Rouhani took to Twitter to call the crash a "great tragedy" and an "unforgivable mistake."

• Iranian Foreign Minister Javad Zarif blamed America's actions for the "human error".

• The Iranian statement stressed that the "human error" occurred during very high tensions with the U.S.

Additional Information

• Ukraine :

• Ukraine is a country in Eastern Europe.

• It is the second-largest country in Europe after Russia, which borders to the east and north-east country located in eastern Europe.

• The nation's capital and largest city are Kyiv.

• Volodymyr Zelensky is the current president of Ukraine.

• Iran :

• Tehran is the capital of Iran.

• Iran is also called Persia and officially the Islamic Republic of Iran.

• It is the second-largest country in the Middle East (after Saudi Arabia), the sixth-largest entirely in Asia, and its capital and largest city are Tehran.

• Ebrahim Raisi is the current president of Iran.

Q99. Answer: (a) computer virus

The correct answer is Computer virus.

Key Points

• A computer virus is a program or piece of code that gets loaded onto your computer without your knowledge and runs against your will.

• A computer virus is a type of program that, with or without your permission, is installed on your personal computer to collect information about users, their computers or browsing habits, which you can do without your knowledge. Tracks it and sends it to the remote user.

• "Malware" is short for malicious software and is used as a single term to refer to viruses, spyware, worms, etc.

• It is designed to damage stand-alone computers or network PCs.

• So wherever the word malware is used, it means that a program that is designed to harm your computer could be a virus, worm or Trojan.

• Malware can be injected either through social engineering or by injecting it into a user's system without their knowledge.

Additional Information

• Virus:

• It is a program written to enter your computer and damage your files/data.

• A virus might corrupt or delete data on your computer.

• They can also replicate themselves.

• A computer Virus is more dangerous than a computer worm as it makes changes or deletes your files while worms only replicate themselves without making changes to your files/data.

• Spyware :

• Spyware is a type of program that is installed with or without your permission on your personal computers to collect information about users, t

• A hacker uses spyware to track your internet activities and steal the information without the host being aware of it.

• Usually, banking details are the Target of such codes.

• This software attacks the target and not just steals the information but also decelerates the system performance, especially when there is more than one program running on the system.

• Trojan :

• Trojans also open a backdoor entry to your computer which gives malicious users/programs access to your system, allowing confidential and personal information to be theft.

• Trojan horse is not a virus.

• It is a destructive program that looks like a genuine application.

• Ransomware :

• This type of malware encrypts a victim's file and modifies the access rights of the file.
• The attacker then asks for ransom from the victim to restore access to data upon payment.

Q100. Answer: (c) stomata

The correct answer is Stomata.

Key Points

• The stomata are the tiny pores present on the surface of the leaves of plants.
• Stomata are minute aperture structures on plants found typically on the outer leaf skin layer, also known as the epidermis.
• It helps the plant in exchange for gasses and transpiration.
• These stomata surrounded by the kidney-shaped guard cells provide many vital functions to the plants.
• The stomatal pore may be defined as the guard cells occurring in pairs with gaps between them.
• The guard cells have thick cuticles on the pore side and thin opposite to it.
• The opening of the stomata leads to an increase in the turgidity of guard cells. The shape of outer walls become bulge while the inner walls become crescent-shaped.
• The guard cells lose their turgidity when stomata close.
• The outer and inner walls get their original shapes.
• Cell walls of varying thickness and different orientations of cellulose microfibers are present in the guard cells which are responsible for their bending outward when they are turgid and thus stomata open.

Additional Information

• Stomata are the small openings found on the leaf epidermis.
• Stomata can be seen beneath the light microscope.
• Stomata can be found on stems and other plant parts.
• Stomata Structure:
• Two guard cells surround each stoma.
• The kidney-shaped guards contain chloroplasts.
• In each stoma, there is a respiratory chamber.
• • Mechanism of stomatal closure and reopening:
• The mechanism of stomatal closure and opening is dependent on the presence of sugar and starch in the guard cells.
• The guard cells of the stomata contain sugar, which is synthesized by their chloroplasts in the presence of light.
• Because sugar is soluble, it raises the concentration of guard cells.
• Due to the higher concentration of cytoplasm in guard cells, water enters these cells via osmosis from neighboring cells. As a result, the stomata remain open.

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