RRB NTPC CBT-I Official Paper (Held On: 9 Jan 2021 Shift 2) (Previous Year Paper)

RRB NTPC • 2021 • 100 questions • 90 minutes • Answer key and solutions

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Q1. P is taller than Q and R is taller than S. If S is taller than Q but shorter than P and P is shorter than R, who is the tallest?

(a) S
(b) R
(c) P
(d) Q

Q2. An amount of Rs.48,000 is divided between two brothers Anil and Aditya in the ratio 11 : 13. What is the share of Aditya?

(a) Rs.26,000
(b) Rs.2,000
(c) Rs.24,000
(d) Rs.22,000

Q3. If $\sin\theta - \cos\theta = 0$, (angle in first quadrant) then the value of $\sin^3\theta + 3\cos^3\theta$ is:

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

Q4. In which state is the Bhadra Wildlife Sanctuary located?

(a) Kerala
(b) Punjab
(c) Bihar
(d) Karnataka

Q5. A sum becomes Rs.26,400 after 2 years at simple interest of 5% per annum. Find the sum.

(a) Rs.2,640
(b) Rs.2,400
(c) Rs.24,000
(d) Rs.29,040

Q6. Select the cluster that can replace the question mark (?) in the following series.
G7R18, H8S19, I9T20?

(a) D3A11
(b) L4B12
(c) J10U21
(d) C2P13

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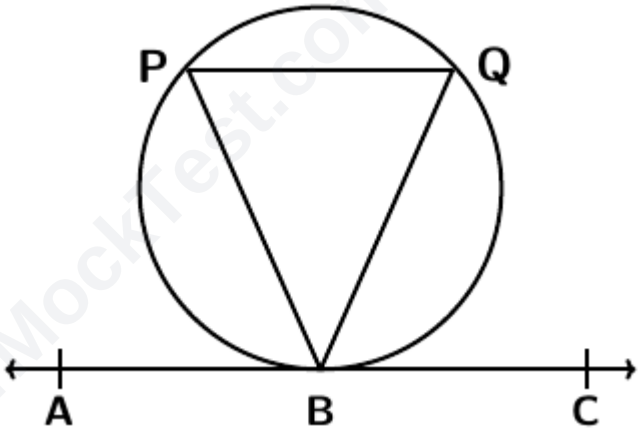
Q7. A scheme by the Government of India to maintain a viable population of tigers in India since 1973 is:

(a) Wildlife Conservation
(b) Wildlife in India
(c) Project Tiger
(d) Save the Tiger

Q8. Who among the following advocated a moderate, gradual and persuasive approach to colonial rule through the Swadeshi movement?

(a) Bipin Chandra Pal
(b) Bal Gangadhar Tilak
(c) Lala Lajpat Rai
(d) Gopal Krishna Gokhale

Q9. Line ABC is a tangent to a circle at B. PQ || AC and angle QBC = 70°. angle PBQ is = ?



(a) 70°
(b) 20°
(c) 110°
(d) 40°

Q10. Rajpal borrowed a certain amount at 10% per annum simple interest for 1 1/2 years. He gave the same amount as loan to a friend and charged compound interest (compounded semi-annually) at the same rate for the same period. In this way he earned Rs.305. Find the sum of the money.

(a) Rs.30,500
(b) Rs.40,000
(c) Rs.40,305
(d) Rs.30,000

Q11. A 1.5 kg cake is divided equally among 10 boys. How much cake will each boy get?

(a) 1500 g
(b) 10 g
(c) 150 g
(d) 15 g

Q12. Everything in this universe is made up of the following materials. Scientists name it:

(a) liquids
(b) Crystals
(c) matter
(d) solids

Q13. Which state in the United States of America was once Russian land?

(a) California
(b) Alaska
(c) Hawaii

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(d) Nevada

Q14. Simplify: 0.83 + 44.4 + 4.44 + 4.604 + 43

(a) 56.18
(b) 97.274
(c) 178.67
(d) 97.31

Q15. At which Sikh Guru's invitation did the Sufi saint Hazrat Mian Mir lay the foundation stone of Golden Temple (Harmandir Sahib) in Amritsar?

(a) Shri Guru Arjan Dev ji
(b) Shri Guru Tegh Bahadur ji
(c) Shri Guru Har Rai ji
(d) Shri Guru Har Govind Ji

Q16. Who inaugurated the first ever corridor of the Delhi Metro?

(a) Madan Lal Khuarana
(b) Manmohan Singh
(c) E Sreedharan
(d) Atal Bihari Vajpayee

Q17. Select the number from among the given options that can replace the question mark (?) in the following table:

6	4	3
12	8	?
24	16	12
48	32	24

(a) 9
(b) 6
(c) 3
(d) 23

Q18. 5 m long ladder is leaning against a wall and it reaches the wall at a point 3 m high. If the foot of the ladder is moved 2.6 m towards the wall then the distance by which the top of the ladder slides upwards on the wall is:

(a) 1.08 m
(b) 4.8 m
(c) 5.6 m
(d) 1.8 m

Q19. If B is equal to 2, V is equal to 22 and R is equal to 18, how would you spell 'BEHAVIOUR'?

(a) 2571229252218
(b) 2581229152118
(c) 2571229152218
(d) 2571229152118

Q20. Consider the given statement and decide which of the given assumptions are implicit in the statement.

Statement: Go by airplane to reach Bengaluru from Mumbai quickly.

Assumptions:

1. Bengaluru and Mumbai are connected by airplane service.
2. There is no other means of going from Bengaluru to Mumbai.

(a) Both 1 and 2 are implicit
(b) Neither 1 nor 2 is implicit
(c) Only 1 is implicit

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(d) Only 2 is implicit

Q21. In which state did India's White Revolution have its origin?

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

Q22. In a row of girls Mahua is 7^(th) from one extreme and 11^(th) from the other. Find the total number of girls in the row.

(a) 17
(b) 19
(c) 16
(d) 18

Q23. Simplify: 1800 ÷ 10 × {45 ÷ (17 - 2)} × 2 + {- 2(1 + 2)}

(a) 180
(b) 0
(c) 1074
(d) 114

Q24. Which type of coal has the highest percentage of carbon?

(a) Bituminous
(b) Lignite
(c) Peat
(d) Anthracite

Q25. Simplify: 12 ÷ (3 × 2) + 8 × 4 - 4

(a) 2
(b) 1
(c) 60
(d) 30

Q26. Select the option that is related to the third term in the same way as the second term is related to the first term.

4 : 27 :: 25 : ?

(a) 36
(b) 30
(c) 125
(d) 216

Q27. Who wrote the novel 'The God of Small Things'?

(a) Arundhati Roy
(b) Kiran Desai
(c) Chetan Bhagat
(d) Salman Rushdie

Q28. The sum of the digits of a two-digit number is 9. If the digits are reversed, the new number when increased by 9 equals three times the original number. Find the number.

(a) 45
(b) 54
(c) 27
(d) 72

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Q29. A train started with 450 passengers. At the first stop, 1/9 of them got down and 20 new passengers got in. At the second stop, 1/6 of the passengers then existing got down and 19 new passengers boarded. With how many passengers did the train arrive at the third stop?

(a) 394
(b) 420
(c) 400
(d) 369

Q30. The base of a right-angled triangle is 12 cm and the difference between the other two sides is 6 cm. What will be the perimeter of the triangle?

(a) 18 cm
(b) 30 cm
(c) 54 cm
(d) 36 cm

Q31. As of October 2020, who is the current World Number 1 in Men's Tennis ATP rankings?

(a) Alexander Zverev
(b) Novak Djokovic
(c) Roger Federer
(d) Rafael Nadal

Q32. If (2x -1) is a factor of 2x^4 - 7x³ + x + k = 0, then find the value of 'k'.

(a) -1/4
(b) -5/12
(c) 0
(d) 1/4

Q33. Which of the following is NOT a monument in Tamil Nadu?

(a) Bekal Fort
(b) Meenakshi Amman temple
(c) Valluvar Kottam
(d) Padmanabhapuram Palace

Q34. Which of the following states has the giant squirrel as its state animal?

(a) Goa
(b) Himachal Pradesh
(c) Maharashtra
(d) Haryana

Q35. The Non-cooperation movement was called off by Gandhiji after the violent act of the _____.

(a) Chauri Chaura
(b) Rowlatt Act
(c) Quit India movement
(d) Khilafat movement

Q36. How many Bytes make a Kilobyte?

(a) 960
(b) 1024
(c) 1440
(d) 100

Q37. Select the option that is related to the third term in the same way as the second term is related to the first term.

Almirah : Storage :: Chair : ?

(a) Lying down
(b) Sitting

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(c) Keeping items
(d) Standing

Q38. The mean of 21 observation is 42. If out of 21 given observations, the mean of the first 11 observation is 50 and the mean of the last 11 observations is 35, then the 11^(th) observation will be:
(a) 50
(b) 40
(c) 35
(d) 53

Q39. Varun is three times as old as his sister. Six years hence the product of their ages will be 231. Find the Varun's present age.
(a) 5 years
(b) 15 years
(c) 39 years
(d) 13 years

Q40. Two numbers A and B are less than a third number C by 15% and 32% respectively. By what percentage is number B less than number A?
(a) 80
(b) 20
(c) 32
(d) 68

Q41. Simplify. √(56+√(185+88√(√36+19)))
(a) √91
(b) 3
(c) 9
(d) 81

Q42. Who was the Chief Minister of an Indian state and also chairperson of a prominent commission?
(a) Bindheshwari Prasad Mandal
(b) Bondheswari Pathak
(c) Rajinder Sachar
(d) Daulat Singh Kothari

Q43. A pool has 3 taps. The first tap takes 4 days, the second tap takes 2 days and the third tap takes only 12 h to fill the pool. How long will it take to fill the pool using all the three taps?
(a) 61/2 days
(b) 11/11 h
(c) 6 days
(d) 88/11 h

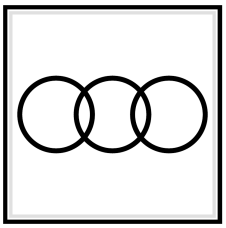
Q44. Who was the first woman of Indian descent to go to space?
(a) Kalpana Chawla
(b) Nalini Ramarajan
(c) Shawna Pandya
(d) Sunita Willianms

Q45. If A is equal to 1, S is equal to 19 and G is equal to 7, how would you spell 'MASSAGE'?
(a) 1311919175
(b) 1311945375
(c) 1311945355
(d) 1311919277

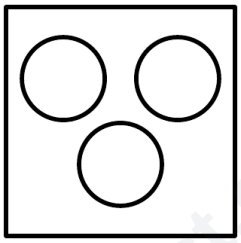
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Q46. Select the Venn diagram that best represents the relationship between Musical Instruments, Drums and Flute.

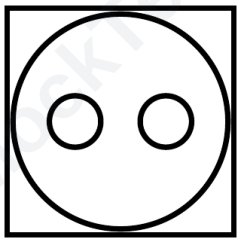
(a)



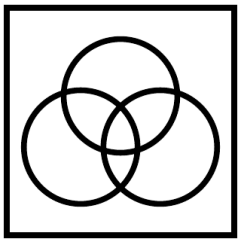
(b)



(c)



(d)



Q47. In which year did the Pulwama terror attack take place?

(a) 2019
(b) 2017
(c) 2016
(d) 2018

Q48. By selling an article for Rs.1,785, a dealer loses 15%. At what price should he sell the article to gain 15%?

(a) Rs.2,100
(b) Rs.2,205
(c) Rs.2,415
(d) Rs.1,785

Q49. In 1857, the last ruler of the Mughal dynasty _____ was overthrown by the British.

(a) Bahadur Shah Zafar
(b) Nasiruddin Humayun
(c) Jalaluddin Akbar
(d) Zahiruddin Babar

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Q50. Simplify: $((542+321)^2-(542-321)^2)/(542 \times 321)$

(a) 1
(b) 4
(c) 1/271
(d) 642/321

Q51. Video Graphics Array (VGA) is a system for displaying colour graphics. It was developed by:

(a) IBM
(b) Macintosh
(c) Apple
(d) Microsoft

Q52. The radius of a spherical balloon increases from 5 cm to 10 cm when more air is pumped into it. The ratio of the surface area of the original balloon and that of the inflated balloon is:

(a) 1 : 2
(b) 1 : 8
(c) 1 : 4
(d) 2 : 1

Q53. A special bank account meant for the girl child and launched as a part of the Beti Bachao Beti Padhao Campaign is known as:

(a) Sukanya Samriddhi
(b) Kanya Dhan
(c) Kanyashree
(d) Dhanalakshmi

Q54. A good indicator of economic growth is a steady increase in the _____.

(a) VAT
(b) GDP
(c) GST
(d) STC

Q55. The UN was founded as a successor to the League of Nations in 1945 _____.

(a) right before the Second World War
(b) right before the First World War
(c) immediately after the First World War
(d) immediately after the Second World War

Q56. Two numbers are in the ratio 3 : 2. If 8 is subtracted from the first number and 6 subtracted from the second number, the ratio becomes 5 : 4. The numbers are:

(a) 2, 3
(b) 3, 2
(c) 24, 16
(d) 16, 24

Q57. Home Decor shop marked every item 30% higher than the actual cost price. The owner offers 10% discount on the marked price of each item. If a Sofa set is sold for Rs.23,400, how much profit did he earn?

(a) Rs.3,400
(b) Rs.20,000
(c) Rs.3,978
(d) Rs.18,000

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Q58. Select the option in which the words share the same relationship as that shared by the given pair of words.

Kiwi : Fruit :: Zuchhini : ?

(a) Spice
(b) Vegetable
(c) Herb
(d) Fruit

Q59. The first woman to serve as the President of India was:

(a) Sucheta Kriplani
(b) Sumitra Mahajan
(c) Rajkumari Amrit Kaur
(d) Pratibha Patil

Q60. Select the number that can replace the question mark (?) in the following series.

5, 12, 19, 26, ?

(a) 44
(b) 33
(c) 43
(d) 34

Q61. What does OCR stand for?

(a) Optical Character Recognition
(b) Optimum Computer Recording
(c) Optical Computer Recording
(d) Optimum Colour Recognition

Q62. Which award did Pranab Mukherjee receive in 2019?

(a) Padma Vibhushan
(b) Bharat Bhushan
(c) Bharat Ratna
(d) Padma Bhushan

Q63. GSLV stands for:

(a) Global Stationary Launching Vehicle
(b) Geosynchronous Satellite Launching Vehicle
(c) Global Satellite Launch Vehicle
(d) Geosynchronous Satellite Launch Vehicle

Q64. What is the scientific name of the 'Touch-Me-Not' plant?

(a) Mimosa verrucosa
(b) Mimosa Loxensis
(c) Mimosa pudica
(d) Mimosa townsendii

Q65. Select the letter-cluster that can replace the question mark (?) in the following series.

BIN, CJO, DKP, ?

(a) LPN
(b) ELQ
(c) WVI
(d) SFY

Q66. As of October 2020, which was NOT a Maharatna?

(a) National Thermal Power Corporation
(b) Steel Authority of India Limited
(c) Oil and Natural Gas Corporation

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(d) Hindustan Aeronautics Limited

Q67. _____ is the first reserve forest of India.

(a) Jim Corbett National Park
(b) Ranthambore National Park
(c) Satpura National Park
(d) Gir National Park

Q68. The number of bones in an adult human body is:

(a) 206
(b) 156
(c) 16
(d) 296

Q69. In a certain code language-

'123' means 'good to taste'
'456' means 'see you soon'
'789' mean 'be right back'
Which of the following numbers stands for 'be' in that language?

(a) 9
(b) 1
(c) 4
(d) 7

Q70. The female Anopheles mosquito is a transmitter of:

(a) malaria
(b) dengue
(c) cholera
(d) typhoid

Q71. HCF of 2^4 × 3^4 × 5^3 × 7^2 and 2^2 × 3^6 × 5^5 is:

(a) 2^2 × 3^4 × 5^3
(b) 2^6 × 3^(10) × 5^8 × 7^2
(c) 2^3× 3^5 × 5^4 × 7
(d) 2^2 × 3^2 × 5^3 × 7^2

Q72. According to question, who has the ultimate command of the Union Defense Forces?

(a) Minister of Defense
(b) President
(c) Prime Minister
(d) Chief of Army Staff

Q73. How much is the premium payable for the annual commercial/horticulture crops under the Pradhan Mantri Fasal Bima Yojana, as a percentage of the sum insured/actuarial rate?

(a) 6 percent
(b) 1 percent
(c) 5 percent
(d) 7 percent

Q74. Rakhi goes 3 meters North then turns right and walks 4 meters, then again turns right and walks 2 meters, then a again turns right and walks 4 meters. How many meters is she from her original position?

(a) 1
(b) 2
(c) On the starting point or 0
(d) 4

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Q75. The largest number which divides 55, 72 and 123 leaving the remainders 3, 7 and 6 respectilvely is:

(a) 117
(b) 26
(c) 13
(d) 66

Q76. Sixteen men can complete a work in 24 days. Twenty four women can complete the same work in 32 days. Sixteen men and sixteen women together worked for twelve days, after which women dropped. How many more men are to be taken to complete the remaining work in 2 days?

(a) 32
(b) 24
(c) 48
(d) 64

Q77. In a 200 m race, Shruti runs at the speed of 4 km/h. Shruti gives a start of 18 m to Veena and still beats her by 30s. What is Veena's speed?

(a) 4.36 km/h
(b) 3.12 km/h
(c) 7/24 km/h
(d) 24/7 km/h

Q78. As of October 2020, who is the current Secretary General of the UN?

(a) Antonio Guterres
(b) Ban Ki Moon
(c) Boutros Boutros-Ghali
(d) Kofi Annan

Q79. _____ built the Taj Mahal Palace Hotel at Mumbai by integrating Indian and European styles.

(a) RD Tata
(b) Ratan Tata
(c) Jamsetji Tata
(d) JRD Tata

Q80. The angles of elevation of the top of the tower from two points on the ground at a distance of 18 m and 32 m from the foot of a tower are complementary. The height of the tower is

(a) 32 m
(b) 20 m
(c) 24 m
(d) 36 m

Q81. Name the major river that flows through the Union Territory of Dadra and Nagar Haveli.

(a) Pinjal
(b) Narmada
(c) Damanganga
(d) Par

Q82. It is a joint venture between the big industrialists to establish a planned economy in the country after _____ independence.

(a) Madras Plan
(b) Cole Plan
(c) Delhi Plan
(d) Bombay Plan

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Q83. The salt satyagraha is notable for at least three reasons. Which of the following is not one of them?

(a) the young population in India began to attend schools
(b) It bought Mahatma Gandhi to the world's attention.
(c) nationalist movement in which a large number of women participated.
(d) The British had to realize that their monarchy would not last forever.

Q84. Which country is NOT a member of OPEC?

(a) Venezuela
(b) Algeria
(c) Nigeria
(d) Kenya

Q85. If the mode of the following data is 12, then find the value of k.

11, 15, 8, 9, k, 11, 12, 12, 15, 14

(a) 12
(b) 15
(c) 13
(d) 11

Q86. The table given below gives data for wheat production (in lakh tonnes) for 5 states, from the year 2015 to 2019. Study the data given in the table and answer the question below it.

Year	2015	2016	2017	2018	2019
State					
A	8	10	9	11	11
B	11	12	10	9	8
C	12	13	14	11	14
D	6	8	8	9	7
E	18	17	15	16	14

From 2015-2019, which state contributed the least to the total production of wheat?

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

Q87. The table given below gives data for wheat production (in lakh tonnes) for 5 states, from the year 2015 to 2019. Study the data given in the table and answer the question below it.

Year	2015	2016	2017	2018	2019
State					
A	8	10	9	11	11
B	11	12	10	9	8
C	12	13	14	11	14
D	6	8	8	9	7
E	18	17	15	16	14

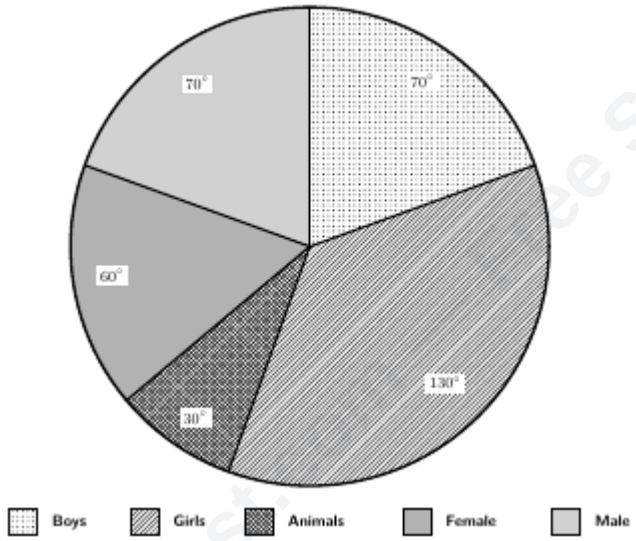
In 2015, which state contributed close to 1/3^(rd) of the total production of all the five states?

(a) A
(b) B
(c) E

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(d) C

Q88. The following pie chart shows the population of a town.



If the total population of the town is 720000, then the number of animals in the town is:

(a) 30000
(b) 40000
(c) 60000
(d) 50000

Q89. The table given below gives data for wheat production (in lakh tonnes) for 5 states, from the year 2015 to 2019. Study the data given in the table and answer the question below it.

Year	2015	2016	2017	2018	2019
State					
A	8	10	9	11	11
B	11	12	10	9	8
C	12	13	14	11	14
D	6	8	8	9	7
E	18	17	15	16	14

In which state was there a continuous and fixed increase in production, from the year 2015 to 2017?

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

Q90. Select the letter-cluster than can replace the question mark (?) in the following series.

GPW, HQX, IRY, ?

(a) JSZ
(b) THU
(c) ERD
(d) MNF

Q91. If A is equal to 1, V is equal to 22 and E is equal to 5, how would you spell 'VAGUELY'?

(a) 22172151225
(b) 21172151225
(c) 21171215225

(d) 22171215225

Q92. Select the number from among the given options that can replace the question mark (?) in the following series.

4, 27, 256, ?

(a) 2315
(b) 1235
(c) 3125
(d) 5321

Q93. What is the smallest number of birds that could fly in the formation described below, assuming that each is counted only once to fulfill all the conditions listed?

Two birds in front of a bird, two birds behind a bird and a bird between two birds.

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

Q94. Select the pair of letter clusters from among the given options that has the same relationship as the one given below:

BQZH : OGXI :: ?

(a) SQMN : UTWZ
(b) WHLK : RTID
(c) FLXR : YESM
(d) PNML : STWW

Q95. If AVERY is coded as 71 then AMANDA will be coded as _____

(a) 54
(b) 43
(c) 64
(d) 34

Q96. Select the number that can replace the question mark (?) in the following series.

5, 12, 54, 306, ?

(a) 1008
(b) 1818
(c) 2734
(d) 2460

Q97. If RAHUL is coded as 60 then RAJESH will be coded as _____.

(a) 71
(b) 61
(c) 41
(d) 51

Q98. Select the number that can the question mark (?) in the following series.

3, 12, 48, 192, ?

(a) 768
(b) 687
(c) 876
(d) 786

Q99. Six persons are playing a card game. They are sitting in a circle facing the centre. S is facing R who is to the left of A and to the right of P. A is to the left of D and Y is to the left of P.

If D exchanges his seat with Y and P exchanges his seat with R, who will be sitting to the left of D?

(a) Y
(b) R

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(c) P

(d) S

Q100. Arun walks 10 yards straight from his house which is facing north and then he walks 20 yards in the reverse direction. Further he takes a left turn and walks 10 yards. In which direction is Arun now from his original position?

(a) South-east

(b) North-east

(c) South-west

(d) North-west

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (b) R

The logic followed here is:

1) P is taller than Q.

P > Q

2) R is taller than S.

R > S

3) S is taller than Q but shorter than P and P is shorter than R.

R > P > S > Q

Thus, R is the tallest in all.

Hence, the correct answer is "R".

Q2. Answer: (a) Rs.26,000

Given:

Total amount = Rs. 48000

Ratio of Anil and Aditya = 11 : 13

Concept used:

Concept of ratio and proportion

Calculation:

According to the question,

Share of Aditya = 48000 × 13/24

=> Rs. 26000

Therefore The share of Aditya is Rs. 26000

Q3. Answer: (c) √2

Shortcut Trick

Given, $\sin\theta - \cos\theta = 0 \Rightarrow \sin\theta = \cos\theta$

Since the angle is in the 1st quadrant, θ = 45°.

At θ = 45°, sinθ = cosθ = 1/√2.

Now, substitute in sin3θ + 3cos3θ:

=> 4 × cos3(45°) = 4 × (1/√2)3 = 4 / (2√2) = √2.

Therefore The correct answer is √2.

Alternate Method

Given:

sinθ − cosθ = 0

Calculations:

=> sinθ = cosθ

Divide both sides by cosθ:

=> tanθ = 1

Since θ lies in the first quadrant (0° < θ < 90°), we get:

=> θ = 45°

We need to find the value of sin3θ + 3cos3θ

Substitute θ = 45° into the expression:

=> sin3(45°) + 3cos3(45°)

=> (1/√2)3 + 3 × (1/√2)3

=> 1/(2√2) + 3/(2√2)

=> (1 + 3) / 2√2

=> 4 / 2√2

=> 2 / √2

=> √2

Therefore The correct answer is √2.

Additional Information

Trigonometric Values at 45°

For an angle of 45°, both sine and cosine functions have the same value: sin(45°) = 1/√2 and cos(45°) = 1/√2.

Quadrant Sign Convention (ASTC Rule)

In the 1st quadrant (0° to 90°), all trigonometric ratios are positive. In the 2nd quadrant, Sine and Cosecant are positive.

Trigonometric Identities

The fundamental Pythagorean identity is sin2θ + cos2θ = 1, which holds true for all real values of θ.

Q4. Answer: (d) Karnataka

The correct answer is Karnataka.

• Bhadra Wildlife Sanctuary, a protected area and tiger reserve as part of Project Tiger, is located in Chikkamagaluru district, 23 km south of Bhadravati town, 38 km 20 km northwest of Tarikere town, north-west of Chikkamagaluru and Karnataka state.

Key Points

• Karnataka

• Capital: Bangalore

• National Parks: Anshi National Park, Bandipur National Park, Bannerghatta National Park, Kudremukh National Park, Nagarahole National Park.

• State Animal: Asian elephant

• State Bird: Indian roller

• State Tree: Indian Sandalwood

• State Flower: Lotus (Crape Jasmine)

Additional Information

State	Capital	State Animal
Kerala	Thiruvananthapuram	Elephant
Punjab	Chandigarh	Blackbuck
Bihar	Patna	Gaur

Q5. Answer: (c) Rs.24,000

Given:

Amount = Rs. 26400

Time = 2 years

Rate = 5%

Formula used:

Amount = P + SI

S.I = (P × t × r)/100

P = Principal

t = Time

r = Rate of interest

Calculation:

P + (P × 2 × 5)/100 = 26400

=> P + P/10 = 26400

=> 11P/10 = 26400

=> P = 26400 × 10/11

=> P = Rs. 24000

Therefore The sum is Rs. 24000

Q6. Answer: (c) J10U21

The logic followed here is:

Hence, the correct answer is "J10U21".

Q7. Answer: (c) Project Tiger

The correct answer is Project Tiger.

Key Points

• Project Tiger was started in 1973 with 9 tiger reserves to conserve our national animal, the tiger.

• Tiger sanctuaries have been set up on a core/buffer strategy. Core areas have the legal status of a national park or sanctuary, while buffer or peripheral areas are a mixture of forest and non-forest land, managed as multi-use areas.

• It is a centrally sponsored scheme of the Ministry of Environment, Forest, and Climate Change that provides central assistance to tiger states for tiger conservation in designated tiger reserves.

• The process of estimating the number of tigers in a given area is called 'Tiger Census'.

• Every 4 years the National Tiger Conservation Authority (NTCA) conducts a tiger census across India.

Additional Information

Some of the Tiger Reserves are:

Name of Tiger Reserve	State
Namdapha	Arunachal Pradesh
Kamlang Tiger Reserve	Arunachal Pradesh
Pakke	Arunachal Pradesh
Manas	Assam
Nameri	Assam
Orang Tiger Reserve	Assam
Kaziranga	Assam
Valmiki	Bihar
Udanti-Sitanadi	Chattisgarh

Q8. Answer: (d) Gopal Krishna Gokhale

The correct answer is Gopal Krishna Gokhale.

Key Points

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Swadeshi Movement of 1905-07:

• The movement had its roots in the anti-partition movement, which was launched to protest Lord Curzon's decision to divide the province of Bengal.

• The anti-partition campaign was launched by the moderates to put pressure on the government to stop the unjust partition of Bengal from being implemented.

• The leaders of the Swadeshi movement advocated belligerent opposition to colonial rule, a group of "liberals" that preferred a more gradual and persuasive approach.

• The Swadeshi Movement of 1905-07 had greatly broadened its appeal among the middle class. Among the moderate leaders were Gandhi's recognized political mentor, Gopal Krishna Gokhale, as well as Muhammad Ali Jinnah who, like Gandhi, was a London-trained advocate of Gujarati extraction. On Gokhale's advice, Gandhi spent a year travelling to British India, getting to know the land and its people.

Important Points

Gopal Krishna Gokhale:

• Gopal Krishna Gokhale was a great social reformer and educationist.

• In 1905, he became the President of the Congress in the Banaras session.

• He founded the Servants of India Society in 1905 for the expansion of Indian education.

Additional Information

Bal Gangadhar Tilak

• He was an Indian nationalist, the independent activist who fought for India's independence.

• The Britishers called him "the father of the Indian unrest".

• Mahatma Gandhi called him "The Maker of Modern India".

Bipin Chandra Pal

• He was an Indian nationalist, social reformer, freedom fighter.

• He was one of the main architects of the Swadeshi Movement along with Sri Aurobindo

Lala Lajpat Rai

• He was an Indian nationalist, social reformer, freedom fighter.

• He was popularly known as Punjab Kesari.

• He was also associated with the foundation of the Punjab National Bank in 1894.

Q9. Answer: (d) 40°

Given:

angle QBC = 70°

PQ || AC

Concept used:

The alternate segment theorem (also known as the tangent-chord theorem) states that in any circle, the angle between a chord and a tangent through one of the end points of the chord is equal to the angle in the alternate segment.

Calculation:

angle QBC = angle BQP [Because PQ || AC]

With the help of alternative segment theorem

angle BPQ = angle QBC

So,

angle BQP and angle BPQ = 70°

So angle PBQ = 180 - 140

=> 40°

Therefore angle PBQ is 40°

Q10. Answer: (b) Rs.40,000

Given:

Time = 1 1/2 years

Rate = 10%

Formula used:

SI = (P × t × r)/100

CI = $P(1 + (r/2)/100)^{2n}$ - P [When CI calculating in semi annually]

Calculation:

Let Principal be Rs. 8000x

So SI = (8000x × 3 × 10)/200

=> 1200x

So CI = 8000x(1 + 10/200)³ - 8000x

=> 8000x × 9261/8000 - 8000x

=> 9261x - 8000x

=> 1261x

Difference = 1261x - 1200x = 61x

61x = 305

=> x = 5

So Principal = Rs. 40000

Therefore The sum of money is Rs. 40000

Alternate Method5% = 1/20Let P = 8000

8000 × 1/20 = 400

1st → 400

2nd → 400 + 20 [400 × 1/20]

3rd → 400 + 40 [800 × 1/20] + 1 [20 × 1/20]

So, difference = 20 + 40 + 1 = 61

Here 61 = 305

1 = 5

8000 = 40000

Q11. Answer: (c) 150 g

Given:

Total quantity = 1.5 kg

No. of boys = 10

Concept used:

Average = Total of elements/No. of elements

Calculation:

1.5 kg = 1500 g

So Each boys = 1500/10 = 150 g

Therefore 150g cake will each boy get.

Q12. Answer: (c) matter

The correct answer is Matter.

• Everything in this universe is made up of the following materials. Scientists name it matter.

Key Points

• The universe is a collection of billions and trillions of stars and galaxies, along with planets, asteroids, comets and clouds of dust, and several gases all swirling in space.

• Everything in this universe is made up of material which is called matter. A matter is referred to as a substance that has a certain mass and takes up a certain volume in space.

• For example, we human beings are matter as well as a pencil or a vehicle is also a matter. So the matter is both a living and a non-living thing.

• The matter is composed of atomic and subatomic things (electron, proton, and neutron). Matter does not include mass-less objects like light, photons, and sound.

• Matter exists in different phases. The most common are solid, liquid, and gaseous phases.

Additional Information

Q13. Answer: (b) Alaska

The correct answer is Alaska.

Key Points

• Alaska is a state in the western United States located at the northwestern end of North America.

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• The purchase of Alaska in 1867 marked the end of Russian efforts to expand trade and settlements along the Pacific coast of North America and became a significant step in the rise of the United States as a great power in the Asia-Pacific region.

• Beginning in 1725, when Russian Czar Peter the Great sent Vitus Bering to explore the Alaskan coast, Russia had a keen interest in the region, which was rich in natural resources and lightly inhabited.

• Russia offered to sell Alaska to the United States in 1859, believing that the United States would harbor the design of Russia's biggest rival in the Pacific, Great Britain.

• Alaska became the gateway to the Klondike Goldfields.

• The strategic importance of Alaska was eventually recognized in World War II. Alaska became a state on January 3, 1959.

Q14. Answer: (b) 97.274

Given:

0.83 + 44.4 + 4.44 + 4.604 + 43

Concept used:

a.bc × 100 = abc

Calculation:

0.83 + 44.4 + 4.44 + 4.604 + 43

=> 0.830 + 44.400 + 4.440 + 4.604 + 43.000

=> 0.830 + 4.440 + 4.604 + 44.400 + 43.000

=> 9.874 + 87.400

=> 97.274

Therefore Required answer is 97.274

Q15. Answer: (a) Shri Guru Arjan Dev ji

The correct answer is Shri Guru Arjan Dev Ji.

Key Points

• Shri Guru Arjan Dev ji

• Guru Arjan was the first of the two Gurus martyred in the Sikh faith and the fifth of the ten total Sikh Gurus.

• He compiled the first official edition of the Sikh scripture called the Adi Granth, which later expanded into the Guru Granth Sahib.

• He completed the construction of Darbar Sahib at Amritsar after the fourth Sikh Guru founded the town and built a pool.

• Guru Arjan compiled the hymns of previous Gurus and of other saints into Adi Granth, the first edition of the Sikh scripture, and installed it in the Harimandir Sahib.

Additional Information

• Shri Guru Tegh Bahadur ji

• He was the ninth of the ten Gurus who founded Sikhism.

• He was executed under the orders of Aurangzeb.

• He was a learned spiritual scholar and a poet, whose 115 hymns are included in the Sri Guru Granth Sahib, the main text of Sikhism.

• Shri Guru Har Rai Ji

• He revered as the seventh Nanak, was the seventh of ten Gurus of the Sikh religion.

• He became the Sikh leader at age 14, on 3 March 1644, after the death of his grandfather and the sixth Sikh leader Guru Hargobind.

• Shri Guru Har Govind Ji

• He was revered as the sixth Nanak.

• He was the sixth of ten Gurus of the Sikh religion.

• He had become Guru at the young age of eleven, after the execution of his father.

Q16. Answer: (d) Atal Bihari Vajpayee

The correct answer is Atal Bihari Vajpayee.

• The Red Line, the first line of the Delhi Metro, was inaugurated on 24 December 2002 by the then Prime Minister of India, Atal Bihari Vajpayee.

• The Delhi Metro became the second underground rapid transit system in India after the Kolkata Metro, when the Vishwa Vidyalaya–Kashmere Gate section of the Yellow Line was opened on 20 December 2004.

• Vajpayee and other guests boarded the train from Kashmere Gate and got down at Seelampuri station.

Key Points

• Delhi Metro

• The Delhi Metro is a mass rapid transit system serving Delhi and its satellite cities.

• It is by far the largest and busiest metro rail system in India and the second oldest after the Kolkata Metro.

• The network consists of 10 color-coded lines serving 254 stations with a total length of 348.12 Km.

• Delhi Metro also interchanges with the Rapid Metro Gurgaon and Noida Metro.

• The Red Line was the first line of the Metro to be opened and connects Rithala in the west to Shaheed Sthal in the east, covering a distance of 34.69 km.

• Atal Bihari Vajpayee

• He served three terms as the Prime Minister of India.

• He was a member of the Rashtriya Swayamsevak Sangh, a Hindu nationalist volunteer organization.

Additional Information

• E Sreedharan

• He is an Indian engineer and politician from the Indian state of Kerala.

• He is credited with changing the face of public transport in India with his leadership in building the Konkan Railway and the Delhi Metro.

• He served as the Managing Director of Delhi Metro Rail Corporation between 1995 and 2012.

• He is a member of the Mata Vaishno Devi Shrine Board.

Q17. Answer: (b) 6

The logic followed here is:-

We multiply by 2 in the first column and first-row number then we get the second column and first-row number, then we multiply by 2 in the second column and first-row number then we get the third column and first-row number, and then we multiply by 2 in the third column and first-row number then we get the fourth column and first-row number, which is given below:-

Column 1 → 6, 12, 24, 48

Column 2 → 4, 8, 16, 32

Similarly,

Column 3 → 3, ?, 12, 24

So, the final matrix is:-

Hence, "option 2" is the correct answer.

Q18. Answer: (d) 1.8 m

Given:

Length of ladder = 5 m

Concept used:

Pythagoras theorem

Calculation:

According to the question,

Distance from the wall to the foot of the ladder = $\sqrt{(5^2 - 3^2)}$

=> 4 m

Now it become 4 - 2.6 = 1.4 m

So height = $\sqrt{(5^2 - 1.4^2)}$

=> $\sqrt{(25 - 1.96)}$

=> $\sqrt{23.04}$

=> 4.8

So ladder slide upwards by 4.8 - 3 = 1.8 m

Therefore Ladder slides upwards on the wall is 1.8 m

Q19. Answer: (b) 2581229152118

The alphabet template is given below:-

The logic followed here is:-

If B is equal to 2, V is equal to 22 and R is equal to 18 that means we put the place value of letter, which is given below:-

Hence, "option 2" is the correct answer.

Q20. Answer: (c) Only 1 is implicit

The pattern followed here is:

From the statement, we want to reach on time, so we wants to travel as fast as we can and we mentions that go by airplane to reach Bengaluru from Mumbai quickly.

Thus, we can assume that Bengaluru and Mumbai are connected by airplane service.

Assumption I is implicit.

We can go from Bengaluru to Mumbai in another way also, so we cannot say anything about assumptions 2.

Assumption II is not implicit.

So, only 1 is implicit.

Hence, "option 3" is the correct answer.

Additional Information

• If there are two or more sentences that are used to frame a statement, then, the sentences must be interrelated, and mutual contradiction should be there.

• Do not look for truthful notions. The information provided in the statement is the only requirement for a student to answer the question. No assumptions must be made.

• Read the statement carefully and look for keywords that are common between the statement and the conclusions

• If there is more than one conclusion that is applicable to the statement, students must ensure that the conclusions they opt for have some relation with each other.

Q21. Answer: (a) Gujarat

The correct answer is Gujarat.

Key Points

• The White Revolution was started in 1970.

• It was an initiative of the National Dairy Development Board (NDDB) of India and was the largest dairy development program in the world.

• This is known as Operation Flood.

• It transformed India from a milk deficient country to the largest milk producer in the world.

• Operation Flood was based on the experimental pattern established by Verghese Kurien.

• The Amul-Anand Milk Union Limited Gujarat-based collaboration was the engine that drove the success of the Operation Flood program.

Additional Information

• Gujarat

• Capital: Gandhinagar

• National Parks: Vansda National Park, Blackbuck National Park, Gir National Park, Marine National Park.

• State Animal: Asiatic Lion

• State Bird: Greater Flamingo

• State Tree: Disputed Various official websites disagree on state tree.

• State Flower: Marigold

Q22. Answer: (a) 17

The logic followed here is:

Given that:-

In a row of girls, Mahua is 7th from one extreme end.

In a row of girls, Mahua is 11th from other extreme ends.

Total number of girls in the row = Mahua position from one end + Mahua position from other end - 1 (Because Mahua added two times.)

Total number of girls in the row = 7 + 11 - 1 = 18 - 1 = 17.

Hence, "option 1" is the correct answer.

Q23. Answer: (c) 1074

Given:

1800 ÷ 10 × {45 ÷ (17 - 2)} × 2 + {- 2(1 + 2)}

Formula used:

BODMAS Rule

Calculation:

1800 ÷ 10 × {45 ÷ (17 - 2)} × 2 + {- 2(1 + 2)}

=> 1800 ÷ 10 × {45 ÷ 15} × 2 + {- 2 × 3}

=> 180 × 3 × 2 - 6

=> 540 × 2 - 6

=> 1080 - 6

=> 1074

Therefore The correct answer is option (3).

Q24. Answer: (d) Anthracite

The correct answer is Anthracite.

• Anthracite is the best quality of coal with the highest calorific value and has a carbon content of 80 to 95%.

• It ignites slowly with a blue flame and is found in small quantities in Jammu and Kashmir.

• It is a very low volatile substance.

• This is a negligible ratio of moisture.

• Semi-metallic luster.

Key Points

• The rank of coal is based on the amount of the plant converted into carbon. Based on this four types of coal are generated:-

• Anthracite

• Bituminous

• Lignite

• Peat

Additional Information

• Bituminous

• It is soft coal; the most widely available and used coal.

• Derives its name after a liquid called bitumen.

• Contains 40 to 80 % Carbon.

• Moisture and volatile content.

• Lignite

• It is a Brown Coal.

• Lower-grade coal.

• Contains 40 to 55% carbon.

• Dark to black-brown.

• It undergoes Spontaneous combustion.

• Peat

• The first stage of transformation.

• Contains less than 40 to 55% carbon.

• Contains sufficient volatile matter and a lot of moisture.

• It burns like wood, gives less heat, emits more smoke and leaves a lot of ash.

Q25. Answer: (d) 30

Given:

12 ÷ (3 × 2) + 8 × 4 - 4

Concept used:

Calculation:

12 ÷ (3 × 2) + 8 × 4 - 4

=> 12 ÷ 6 + 8 × 4 - 4

=> 2 + 8 × 4 - 4

=> 2 + 32 - 4

=> 30

Therefore Required answer is 30

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Q26. Answer: (d) 216

The logic followed here is:-

Square root of first number and add 1 then cube of that number we get second number.

Similarly, for third and fourth number.

Hence, "option 4" is the correct answer.

Q27. Answer: (a) Arundhati Roy

The correct answer is Arundhati Roy.

Key Points

• The God of Small Things is a novel written by Indian writer Arundhati Roy.

• Arundhati Roy was awarded Man Booker Prize for fiction in 1997 for her novel The God of Small Things.

• Her notable works include The God of Small Things, The Ministry of Utmost Happiness, Kashmir: the case of freedom, Azadi: Freedom Fascism, Fiction.

Additional Information

• Chetan Bhagat

• In 2010, he was included in Time magazine's list of the world's 100 most influential people.

• His notable works: Five Point Someone, 2 States, The 3 Mistakes of My Life, Half Girlfriend.

• Kiran Desai

• In 2006, she was awarded the Man Booker Prize for her novel The Inheritance of Loss.

• In 2015, The Economic Times listed her as one of the 20 most influential global Indian women.

• Her notable works: The Inheritance of Loss, Hullabaloo in the Guava Orchard.

• Salman Rushdie

• He is an Indian-born British-American novelist and essayist.

• His work, combining magical realism with historical fiction, is primarily concerned with the many connections, disruptions, and migrations between Eastern and Western civilizations, with much of his fiction being set on the Indian subcontinent.

• His second novel, Midnight's Children (1981), won the Booker Prize in 1981.

Q28. Answer: (c) 27

According to the question,

$10y + x + 9 = 3(10x + y)$

$\Rightarrow 10y + x + 9 = 30x + 3y$

$\Rightarrow 29x - 7y = 9$ ----(i)

$29x - 7y = x + y$

$\Rightarrow 28x = 8y$

$\Rightarrow x$ and $y = 2$ and 7

So, the number is $20 + 7 = 27$

Therefore The number is 27

Q29. Answer: (d) 369

Given:

Total passenger at the beginning = 450

Concept used:

Final = Initial + inclusion or - exclusion

Calculation:

Passenger after 1st stop = $450 \times 8/9 + 20$

$\Rightarrow 420$

Passenger after 2nd stop = $420 \times 5/6 + 19$

$\Rightarrow 369$

Therefore 369 passenger were there when train arraived at the third stop.

Q30. Answer: (d) 36 cm

Given:

Base = 12 cm

Concept used:

$P^2 + b^2 = h^2$

Calculation:

Let height be x cm

So, hypotenous is (x + 6) cm

$(x + 6)^2 - x^2 = 144$

=> x2 + 36 + 12x - x2 = 144

=> 12x = 108

=> x = 9

=> height = 9 cm

So, hypotenous is 15 cm

Perimeter = 9 + 12 + 15

=> 36 cm

Therefore The perimeter of the triangle is 36 cm

Q31. Answer: (b) Novak Djokovic

The correct answer is Novak Djokovic.

• As of October 2020, Novak Djokovic was the number one player on the ATP rankings with 11,740 points.

Key Points

• Novak Djokovic

• He is a Serbian professional tennis player.

• As of October 2020, Novak Djokovic was the number one player on the ATP rankings with 11,740 points.

• He has won a joint record of 20 Grand Slam men's singles titles, including a record of nine Australian Open titles.

• He has won 86 ATP singles titles, including a record 37 Masters events.

Additional Information

• Alexander Zverev

• He is a German professional tennis player.

• He has been ranked by the Association of Tennis Professionals as high as world No 3.

• He has won 19 ATP titles in singles and two in doubles.

• Roger Federer

• He is a Swiss professional tennis player.

• He has won 20 Grand Slam men's singles titles.

• Rafael Nadal

• He is a Spanish professional tennis player.

Q32. Answer: (d) 1/4

Given:

$2x4 - 7x3 + x + k = 0$

Concept used:

if (ax - b) is a factor of a certain equation then

x = b/a

Calculation:

If $(2x - 1) = 0$,

$x = 1/2$

If $(2x - 1)$ is a factor of p(x) then $p(1/2) = 0$

$p(x) = 2x4 - 7x3 + x + k$

=> $p(1/2) = 2 \times 1/16 - 7 \times 1/8 + 1/2 + k = 0$

=> 1/8 - 7/8 + 1/2 + k = 0

=> (1 - 7 + 4)/8 + k = 0

=> -2/8 + k = 0

=> - 1/4 + k = 0

=> k = 1/4

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Therefore Value of k is 1/4

Q33. Answer: (a) Bekal Fort

The correct answer is Bekal Fort.

Key Points

• Bekal Fort was built by Shivappa Nayaka of Keladi in 1650 AD, at Bekal.

• It is the largest fort in Kerala, spreading over 40 acres.

• The fort appears to emerge from the sea.

• India declared Bekal Fort a special tourism area in 1992.

Additional Information

• Meenakshi Amman temple

• It is a historic Hindu temple located on the southern bank of the Vaigai River, Tamil Nadu.

• It is dedicated to the goddess Meenakshi, a form of Paravati, and her consort, Sundareshwar a form of Shiva.

• Valluvar Kottam

• It is a monument in Chennai.

• It is dedicated to the classical Tamil poet-philosopher Valluvar.

• It is the city's biggest Tamil cultural center.

• Padmanabhapuram Palace

• Padmanabhapuram Palace is a Travancore-era palace located in Padmanabhapuram in the Kanyakumari district of the Indian state of Tamil Nadu.

• It is possible it is the oldest palace in India.

Q34. Answer: (c) Maharashtra

The correct answer is Maharashtra.

Key Points

• Indian Giant Squirrel (Shekaru in Marathi) is the state animal of the state of Maharashtra in western India.

• The Indian giant squirrel is a multi-colored tree squirrel species endemic to forests and woodlands in India.

• It is a diurnal, arboreal, and mainly herbivorous squirrel.

Important Points

• Maharashtra

• Capital: Mumbai

• National Parks: Chandoli National Park, Gugamal National Park, Nawegaon National Park, Sanjay Gandhi National Park, Tadoba National Park.

• State Animal: Indian giant squirrel

• State Bird: Yellow-footed green pigeon

• State Tree: Mangifera Indica

• State Flower: Pride of India/Jarul

Additional Information

State	Capital	State Animal
Goa	Panaji	Gaur
Himachal Pradesh	Shimla	Snow leopard
Haryana	Chandigarh	Blackbuck

Q35. Answer: (a) Chauri Chaura

The correct answer is Chauri Chaura.

Key Points

• On 1 August 1920, Gandhi started the non-cooperation movement against the government.

• Chauri Chaura incident took place in Gorakhpur district of United Provinces in British India.

• This includes using indigenous and boycotting foreign goods, especially machine-made clothing, and legal, educational and administrative institutions, "refusing to assist a ruler who misrules".

• During this incident, a large group of protesters participating in the non-cooperation movement clashed with the police, who opened fire.

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• In retaliation, a police station was attacked and set on fire, killing all its men.

• In response, Mahatma Gandhi, who was strongly against violence, stopped the non-cooperation movement at the national level on 12 February 1922 as a direct result of this incident.

Additional Information

• Rowlatt Act

• The Rowlatt Act was passed by the Central Legislative Council in March 1919 to control the militant nationalist struggles and curtail the liberties of the people.

• The Bill provided for speedy trial of offenses by a special court and there was no appeal.

• The provincial government was empowered to search any place and arrest a suspect without a warrant. These gave the government unbridled powers to arrest suspects without trial and imprison them for a maximum of two years.

• This created a wave of anger among all sections and spread the nationwide movement by Gandhiji and laid the foundation of the non-cooperation movement. Gandhiji organized a Satyagraha on 14 February 1919. Gandhi was arrested on 8 April 1919.

• Quit India Movement

• The Quit India Movement is one of India's most important freedom struggle movements that led to the end of British rule in India.

• On 8 August 1942, Mahatma Gandhi initiated the Quit India Movement or Bharat Chodo Aandolan from Bombay.

• Gandhiji gave the slogan "Do or Die" in his speech at the Gowalia Tank Maidan now popularly known as August Kranti Maidan in Mumbai.

• The slogan 'Quit India' was coined by Yusuf Meherally who was a socialist and also a trade unionist. He also served as Mayor of Mumbai. He also coined the slogan "Simon Go Back".

• Khilafat Movement

• The Khilafat movement was an agitation by Indian Muslims allied with Indian nationalism in the years following World War I.

• Its purpose was to pressure the British government to preserve the authority of the Ottoman Sultan as Caliph of Islam following the breakup of the Ottoman Empire at the end of the war.

Q36. Answer: (b) 1024

The correct answer is 1024.

• Computer Storage is often measured in megabytes (MB) and gigabytes(GB):

• 1 KB (Kilobytes) = 1024 bytes

• 1 Mb (Megabytes) = 1024 KB

• 1 GB (Gigabytes) = 1024 MB

• 1 TB (Terabytes) = 1024 GB

Key Points

• Generally, there are two types of Storage Devices

• Primary Storage Devices such as RAM and ROM

• Secondary Storage Devices such as Hard Drive, Floppy Disk.

Q37. Answer: (b) Sitting

The logic followed here is:-

Almirah is used for storing things.

Similarly,

The chair is used for sitting.

Hence, "option 2" is the correct answer.

Additional Information

• The bed is used for laying down.

• The rack is used for keeping items.

• The stool is used for standing.

Q38. Answer: (d) 53

Given:

Mean of 21 observations is 42

Mean of 1st 11 observations= 50

Mean of last 11 observations = 35

Concept used:

Average = Sum of elements/No. of elements

Calculation:
Total of 21 observation = 42 × 21
=> 882
Total of 1st 11 observation = 11 × 50
=> 550
Total of last 11 observation = 11 × 35
=> 385
Total = 935
So, 11th observation = 935 - 882
=> 53
Therefore The 11th observation will be 53

Q39. Answer: (b) 15 years

Given:
Varun = 3 × Sister
Concept used:
x^2 – (sum of roots)x + product of roots = 0
Calculation:
According to the question,
(V + 6) × (S + 6) = 231
=> (3S + 6)(S + 6) = 231
=> $3S^2$ + 18S + 6S + 36 = 231
=> 3S2 + 24S - 195 = 0
=> S2 + 8S - 65 = 0
=> S2 + 13S - 5S - 65 = 0
=> S(S + 13) - 5(S + 13) = 0
=> (S + 13)(S - 5) = 0
=> S = - 13, 5
Age cannot be in negative
So age of sister = 5 years
So, age of Varun is 15 years
Therefore Varun's present age is 15 years

Q40. Answer: (b) 20

Given:
A = 15% less than C
B = 32% less than C
Concept used:
If X is a% less than Y then X = Y × (100 - a)/100
Calculation:
A = 17/20 of C
B = 17/25 of C
LCM of 20 and 25 is 100
So A = 85
B = 68
% = (85 - 68)/85 × 100
=> 1/5 × 100
=> 20%
Therefore B is 20% less than A

Q41. Answer: (c) 9

Given:
√(56+√(185+88√(√36+19)))

Formula used:

√x evaluation

Calculation:

√(56+√(185+88√(√36+19)))

=> √(56+√(185+88√(6+19)))

=> √(56+√(185+88√25))

=> √(56+√(185+(88 × 5)))

=> √(56+√(185+440))

=> √(56+√625)

=> √(56+25)

=> √81

=> 9

Therefore The correct answer is option (3).

Q42. Answer: (a) Bindheshwari Prasad Mandal

The correct answer is Bindheshwari Prasad Mandal.

Key Points

• Bindheshwari Prasad Mandal

• He was an Indian politician.

• He chaired Mandal Commission which became a major political theme after 1990.

• He served as 7th Chief Minister of Bihar in the year 1968, but he had resigned after 30 days.

• He was also a parliamentarian who served as the chairman of the Second Backward Classes Commission.

Additional Information

• Bondheswari Pathak

• He is an Indian sociologist and social entrepreneur.

• He is the founder of Sulabh International, an Indian-based social service organization that works to promote human rights, environmental cleanliness, non-conventional sources of energy.

• He was awarded the Padma Bhushan, India's third-highest civilian award, in 1991.

• Rajinder Sachar

• He was an Indian layperson and former Chief Justice of the Delhi High Court.

• He was a member of the United Nations Sub-Commission on the Promotion and Protection of Human Rights.

• He also served as an advocate for the People's Union for Civil Liberties.

• He chaired the Sachar Committee constituted by the Government of India.

• Daulat Singh Kothari

• He was an Indian Scientist and educationist.

• He was president of the Indian Science Congress at its golden jubilee session in 1963.

• He was elected President of Indian National Science Academy in 1973.

Q43. Answer: (d) 88/11 h

Given:

1st tap fill in 4 days

2nd tap fill in 2 days

3rd tap fill in 12 hours

Concept used:

If a tap can fill a tank alone in x hours, then the efficiency (part of the work completed in one hour) = 1/x

Calculation:

The efficiency of taps = 1/4, 1/2, and 2

One day work of all taps together = 1/4 + 1/2 + 2

=> 11/4

So three taps will take 4/11 days to fill the tank

4/11 × 24 = 96/11 h [We need to convert days into hours]

=> 88/11 h

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Therefore It will take 88/11 hours to fill the pool using all three taps.

Shortcut Trick

Total efficiency = 1 + 2 + 8 = 11

Time = 96/11 = 88/11 h

Q44. Answer: (a) Kalpana Chawla

The correct answer is Kalpana Chawla.

Key Points

• Kalpana Chawla

• She was an American astronaut and engineer.

• She was the first woman of Indian origin to go to space.

• She first flew on Space Shuttle Columbia in 1997 as a mission specialist and primary robotic arm operator.

• She was one of the seven crew members who died in the Space Shuttle Columbia disaster.

• She is regarded as a national hero in India.

• She was posthumously awarded the Congressional Space Medal of Honor.

Additional Information

• Shawna Pandya

• She is a physician, Scientist-Astronaut candidate with Project PoSSUM, researcher, aquanaut, speaker, martial artist.

• She previously served as Commander during a 2020 tour at the Mars Desert Research station.

• She was named one of the Women's Executive Network's Top 100 Most Powerful Women in Canada in 2020.

• Sunita Williams

• She is an American astronaut and United States Navy officer.

• She formerly held the records for most spacewalks by a woman and most spacewalk time for a woman.

• She was assigned to the International Space Station as a member of Expedition 14 and Expedition 15.

• She served as a flight engineer on Expedition 32 and then commander of Expedition 33 in 2012.

Q45. Answer: (a) 1311919175

The alphabet template is given below:-

The logic followed here is:-

If A is equal to 1, S is equal to 19 and G is equal to 7 that means we put the place value of the letter, which is given below:-

Hence, "option 1" is the correct answer.

Q46. Answer: (c) [figure]

Drums and flute both are musical instruments but no drums is flute.

The Venn diagram that best represents the relationship between Musical Instruments, Drums and Flute are given below:-

Hence, "option 3" is the correct answer.

Additional Information

• A flute is an aerophone or reed less wind instrument that produces its sound from the flow of air across an opening. According to the instrument classification of Hornbostel–Sachs, flutes are categorized as edge-blown aerophones.

• Drums are used to keep a steady beat in a song. They give music of many kinds a sense of feeling. For example, to make a song to be slow or fast, the drums play slower or faster. A drum is a percussion instrument, which means it makes a noise by being hit.

Q47. Answer: (a) 2019

The correct answer is 2019.

Key Points

• Pulwama terror attack

• The Pulwama attack took place on 14 February 2019, when a convoy of vehicles carrying Indian security personnel on the Jammu-Srinagar National Highway was attacked by a vehicle-borne suicide bomber at Lethpora in Pulwama district of the erstwhile state of Jammu and Kashmir.

• 40 jawans of the Indian Central Reserve Police Force (CRPF) were killed in this attack.

• The responsibility of the attack was claimed by Pakistan-based Islamic terrorist group Jaish-e-Mohammed.

• This is the deadliest terror attack on India's state security personnel in Kashmir since 1989.

• On 26 February, twelve Mirage 2000 jets of the Indian Air Force crossed the Line of Control and dropped bombs in Balakot,

Pakistan.

Q48. Answer: (c) Rs.2,415

Given:

SP = Rs. 1785

Concept used:

SP = CP × (100 - loss%)/100

SP = CP × (100 + profit%)/100

Calculation:

CP of the article = 1785 × 20/17

=> Rs. 2100

SP should be 2100 × 23/20

=> Rs. 2415

Therefore To gain 15% he should sell it at Rs. 2415

Additional Information

Q49. Answer: (a) Bahadur Shah Zafar

The correct answer is Bahadur Shah Zafar.

Key Points

• Bahadur Shah Zafar

• He was the last ruler of the Mughal Empire.

• He led Delhi in the revolt of 1857.

• He was more of a poet than a political leader or emperor.

• He was an accomplished Urdu poet and had good knowledge of Persian and Arabic as well.

• He was also a calligrapher and musician.

Additional Information

• Babur

• He is the founder of the Mughal Empire.

• He fought the first Battle of Panipat in 1526 with Ibrahim Lodhi and laid the foundation of the Mughal Empire.

• His autobiography Tuzuk-i-Babri was written in the Turkish Language.

• In 1527 his general Mir Baki built Babri Maszid.

• He died in 1530.

• Humayun

• He was the son of Babur.

• He was a mathematician and astronomer.

• His biography Humayunama was written by his sister Gulbadan Begum.

• Akbar

• He was born in 1542 at Amarkot.

• He fought the second battle of Panipat in 1556 with Hemu and he defeated Hemu.

• He abolished the religious tax Jizya.

• He founded a new religion "Din-i- Allahi".

• His biography was written by Abul Fazal " Ain-i-Akbari".

Q50. Answer: (b) 4

Given:

$((542+321)^2-(542-321)^2)/(542 \times 321)$

Formula used:

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

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

Calculation:

$((542+321)^2-(542-321)^2)/(542 \times 321)$

=> $((542)^2 + (321)^2 + 2\times542 \times 321 - (542)^2 - (321)^2 + 2\times542 \times 321)/(542 \times 321)$

=> $(4 \times 542 \times 321)/542 \times 321$

=> 4

Therefore Required answer is 4

Q51. Answer: (a) IBM

The correct answer is IBM.

• Video Graphics Array (VGA) is a system for displaying color graphics. It was developed by IBM.

Key Points

• Video Graphics Array is a display standard or video display controller was developed by International Business Machines (IBM) Corporation in the year 1987.

• It uses analog signals which indicates its capacity to use a lower resolution and display lower quality on screens.

• Its predecessor is Enhanced Graphic Adapter.

• VGA was extended into many forms by third parties collectively known as super Video Graphics Array(successor of VGA).

Additional Information

• International Business Machines (IBM) Corporation is an American multinational technology corporation.

• Its headquarters is Armonk, Newyork.

• Macintosh is a family of personal computers designed manufactured and sold by Apple.Inc from the year 1984.

• Apple is an American multinational technology company that specializes in consumer electronics, computer software, and online services.

• It was founded on April 1, 1976.

• The headquarters is located in Cupertino, California, United States.

• Steve Jobs, Steve Wozniak, Ronald Wayne are the founders of the company.

• The current CEO of the company is Tim Cook.

• Microsoft is an American multinational technology corporation that produces computer software, consumer electronics, personal computers, and related services.

• Bill Gates and Paul Alien are the founders of the company.

• Its headquarters is Redmond, Washington, United States.

• The current CEO of the company is Satya Nadella.

Q52. Answer: (c) 1 : 4

Given:

Radius r1 = 5 cm

Radius r2= 10 cm

Formula used:

The surface area of a sphere = $4\pi r2$

Calculation:

Initial surface area (r_(1) = 5) = $4\pi r1^2$

=> $4 \times 22/7 \times 25$

=> $(2200/7)\ cm^2$

New surface area (r2 = 10) = $4\pi r2^2$

=> $4 \times 22/7 \times 10 \times 10$

=> $(8800/7)\ cm^2$

Ratio of surface area = (2200/7) cm2 : (8800/7) cm2

=> 1 : 4

Therefore Required ratio is 1 : 4

Shortcut TrickHere radius are 5 and 10

We know for this type of question

Volume always in the ratio of square

So, $5^2 : 10^2$

=> 25 : 100

=> 1 : 4

Therefore Required ratio is 1 : 4

Q53. Answer: (a) Sukanya Samriddhi

The correct answer is Sukanya Samriddhi.

• A special bank account known as Sukanya Samriddhi was launched as a part of the Beti Bachao Beti Padhao campaign.

Important Points

• Beti Bachao Beti Padhao is a campaign of the Government of India.

• It was launched on 22 January 2015 with initial funding of 100 crores.

• The campaign aims to create awareness and improve the efficiency of welfare services for girls in India.

• It is a joint initiative by the Ministry of Child and Development, Ministry of Education, Ministry of Health, and Ministry of Family Welfare to address the issue of declining child sex ratio.

• According to census data in India, the child sex ratio in India was 927 girls per 1000 boys in 2001 which decreased to 918 girls per 1000 boys in 2011.

• Reason for the Initiative: Sex-selective abortion, female feticide.

Q54. Answer: (b) GDP

The correct answer is GDP.

• A good indicator of economic growth is a steady increase in the GDP.

Key Points

• GDP: is the standard measure of the value-added created through the production of goods and services.

• GST: is an indirect tax used in India on the supply of Goods and Services

• It is a destination-based tax.

• It is imposed at every step in the production process which is meant to be refunded to all parties in various stages of final production other than the final consumer.

• Petroleum products, electricity, and alcoholic drinks are exempted from GST.

Q55. Answer: (d) immediately after the Second World War

The correct answer is immediately after the Second World War.

• The UN was founded as a successor to the League of Nations in 1945 immediately after the Second World War.

Key Points

• The United Nations is an intergovernmental organization whose purpose is to maintain international peace and security, to develop friendly relations between nations, to achieve international cooperation and to be the center of harmonious work of nations.

• The United Nations Charter was signed on 26 June 1945 and the Charter came into force on 24 October 1945.

• Its headquarter is in New York City.

• The United Nations was preceded by the League of Nations, which came into force on 10 January 1920.

• The League of Nations suffered frequent failures in the Japanese invasion of Manchuria and the Second Italo-Ethiopian War.

• To prevent future wars, the United Nations was established after World War II.

• The organization's objectives include maintaining international peace and security, protecting human rights, providing humanitarian assistance, promoting sustainable development, and upholding international law.

• The initial membership of the United Nations was 51 member states, which increased to 193 member states (as of 2021).

• Official languages: Arabic, Chinese, English, French, Russian, Spanish.

• The current Secretary-General is Antonio Guterres.

Important Points

• The United Nations has six principal organs namely

• The General Assembly.

• The Security Council.

• The Economic and Social Council(ECOSOC).

• The Trusteeship Council.

• International Court of Justice.

• The UN Secretariat.

• The United Nations system also includes a multitude of specialized agencies such as the World Bank Group, the World Health Organization, the World Food Programme, UNESCO, UNICEF.

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Q56. Answer: (b) 3, 2

Shortcut Trick

Using Cross-Multiplication Method: Initial Ratio = 3 : 2, Final Ratio = 5 : 4

Changes in terms = −8 and −6

Cross-product difference of ratios = |3 × 4 − 5 × 2| = 12 − 10 = 2 units

Cross-product difference of final ratio & changes = |5 × (−6) − 4 × (−8)| = |−30 + 32| = 2

=> 2 units = 2 => 1 unit = 1 => Numbers are 3 × 1 = 3 and 2 × 1 = 2

Therefore The correct answer is 3, 2.

Alternate Method

Given:

Initial ratio of the two numbers = 3 : 2

Number subtracted from the first number = 8

Number subtracted from the second number = 6

New ratio formed = 5 : 4

3x

2x

−8

−6

5 parts

4 parts

Ratio Change Operation

Calculation:

=> Let the initial two numbers be 3x and 2x respectively.

=> According to the given condition:

=> (3x − 8) ÷ (2x − 6) = 5 ÷ 4

=> Cross-multiplying the equation:

=> 4 × (3x − 8) = 5 × (2x − 6)

=> 12x − 32 = 10x − 30

=> 12x − 10x = 32 − 30

=> 2x = 2

=> x = 1

=> First number = 3x = 3 × 1 = 3

=> Second number = 2x = 2 × 1 = 2

Therefore The correct answer is 3, 2.

Additional Information

Cross-Multiplication Method in Ratio

It is a powerful algebraic technique to directly find the equivalent value of ratio units when both terms of a ratio are increased or decreased to form a new ratio. It equates the cross-product differences directly.

Proportion Fundamentals

When two ratios are equivalent, they are said to be in proportion, written as a : b = c : d. The foundational rule dictates that the product of the extremes equals the product of the means (a × d = b × c).

Negative Application in Ratios

In mathematical representations, values derived from ratios can technically be negative elements depending on the context, but the proportionality and equality defined by ratio equations will strictly hold true irrespective of the signs.

Q57. Answer: (a) Rs.3,400

Given:

SP of sofa = Rs. 23400

Discount % = 10%

Concept used:

Profit = SP - CP

SP = MP × (100 - Discount%)/100

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Calculation:

According to the question,

CP = 23400 × 100/90× 100/130

=> Rs. 20000

So, profit = 23400 - 20000

=> Rs. 3400

Therefore He earned Rs. 3400

Q58. Answer: (b) Vegetable

The logic followed here is:

Kiwi is a fruit.

Similarly,

Zuchhini is a vegetable.

Hence, the correct answer is "Vegetable".

Confusion PointsWhile it is often thought of and used as a vegetable, zucchini is technically a fruit.

Zucchini, (Cucurbita pepo), also called courgette, variety of summer squash in the gourd family (Cucurbitaceae), grown for its edible fruits and the young fruits are cooked as a vegetable.

In cookery, it is a vegetable, usually cooked and eaten as a savory dish or accompaniment.

Q59. Answer: (d) Pratibha Patil

The correct answer is Pratibha Patil.

• The first woman to serve as the President of India was Pratibha Patil.

Key Points

• Pratibha Devisingh Patil is an Indian politician and lawyer.

• She hails from Maharashtra.

• She is the only woman president to hold the position.

• Pratibha Patil served as the 12th President of India from 2007 to 2012.

• She served as the Governor of Rajasthan from 2004 to 2007.

Important Points

• Sucheta Kripalani was an Indian freedom fighter and politician. She was India's first woman Chief Minister, serving as the head of Uttar Pradesh.

• Sumitra Mahajan is an Indian politician who was the Speaker of the Lok Sabha from 2014 to 2019. He belongs to Bharatiya Janata Party.

• Rajkumari Amrit Kaur was an Indian activist and politician. After a long association with the Indian independence movement, she was appointed India's first health minister in 1947 and held the position until 1957.

Q60. Answer: (b) 33

The logic followed here is:-

We add 7 in the first number and get second number, then we add 7 in second number we get third number and so on.

Hence, "option 2" is the correct answer.

Q61. Answer: (a) Optical Character Recognition

The correct answer is Optical Character Recognition.

• OCR stands for Optical Character Recognition.

Key Points

• Optical character recognition is the electronic or mechanical conversion of images of typed, handwritten, or printed text into machine-encoded text, whether a photograph of a document from a scanned document, a visual photo, or an image with subtitle text applied to it.

• It is widely used as a form of data entry from printed paper data records whether passport documents, invoices, bank statements, computerized receipts, business cards, mail, printouts of static data, or any suitable documentation.

• It is a common method of digitizing printed texts so that they can be electronically edited, searched, stored more compactly, displayed on-line, and used in machine processes such as cognitive computing, machine translation, text to speech, key data, and text mining.

• OCR is a field of research in pattern recognition, artificial intelligence, and computer vision.

Important Points

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• Applications: Automatic Number Plate Recognition.
• Data entry for business documents(Cheque,passport,invoice).
• Passport recognition and information extraction.
• Traffic sign recognition.
• Automatic insurance documents.

Q62. Answer: (c) Bharat Ratna

The correct answer is Bharat Ratna.
• Pranab Mukherjee received Bharat Ratna in 2019.

Key Points
• Pranab Kumar Mukherjee was an Indian politician and statesman.
• He served as the 13th President of India from 2012-2017.
• He was preceded by Pratibha Patil and was succeeded by Ram Nath Govind.
• He received Padma Vibhushan in the year 2008 and Bharat Ratna in the year 2019.
• Books: Challenges Before the Nation: A Saga of Struggle and Sacrifice, Beyond Survival: Emerging Dimensions of the Indian Economy.

Additional Information
• Bharat Ratna is the highest civilian award of the Republic of India.
• Established on 2 January 1954, the award is presented in recognition of "extraordinary service/performance of the highest order" without distinction of race, occupation, status or gender.

Q63. Answer: (d) Geosynchronous Satellite Launch Vehicle

The correct answer is Geosynchronous Satellite Launch Vehicle.
• GSLV stands for Geosynchronous Satellite Launch Vehicle.

Key Points
• Geosynchronous Satellite Launch Vehicle is an expendable launch system operated by the Indian Space Research Organization.
• The first stage comprises a solid booster with a propellant and four liquid strap-on motors.
• The second stage is a liquid engine carrying liquid propellant.
• The third stage is the indigenously built Cryogenic Upper Stage.

Important Points
• PSLV vs GSLV
• GSLV can put a heavier payload in the orbit than Polar Satellite Launch Vehicle.
• GSLV can carry weight up to 5000 kg and reach up to 36000 km.
• PSLV can carry weight up to 2000 kg into space and reach up to the altitude of 600-900 km.

Q64. Answer: (c) Mimosa pudica

The correct answer is Mimosa pudica.
• Mimosa pudica is the scientific name of the 'Touch-Me-Not' plant.

Key Points
• Pudica is a Latin word that means shy.
• It is also called tickle me plant, sensitive plant, shy plant, humble plant, sleeping plant.
• It got the name touch-me-not as the green leaves of this tiny plant shut or shrink inwardly when someone touches them (even with a tender touch).
• Characteristics: The plant is native to central and South America.
• The plant is not at all shade tolerant and is known for its fastest development.
• They close during the nighttime and resume during light.
• Uses: Customary roots of the plant are utilized for treating snake bites, small pox, diarrhea, fever, ulcer, jaundice, leucoderma, hemorrhoids, fistula, asthma. sleep disorder, infections in the urinary tract.
• The entire plant is used for operating stiffness, depression, muscle torment, cancer, elephantiasis.

Q65. Answer: (b) ELQ

The logic followed here is:-

We add 1 in each letter of word.

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Hence, "option 2" is the correct answer.

Q66. Answer: (d) Hindustan Aeronautics Limited

Hindustan Aeronautics Limited was NOT a Maharatna as of October 2020.

Key Points

Central Public Sector Enterprises functions under the Government of India.

• The government of India categorizes all the CPSE s as Maharatna, Navaratna, Miniratna.

• As of the year 2021, there are 11 Maharatna's, 13 Navratna's, and 73 mini Ratna's.

• Factors for categorization: Turn over, Net worth, Net profit every year, and companies present in the stock exchange as per SEBI's rules.

Important Points

Maharatna's status was started in 2009.

• The investment ceiling of the company rises from 1000 crores to 5000 crores after the attainment of status.

• Maharatna firm has the permission to invest 15 % of the network in a project.

• Conditions to acquire the status of Maharatna: Company should have a turnover of more than 25000 crores for the last three years.

• The company should have a net worth of more than 15000 crores for the last three years.

• The company should have a net profit of more than 5000 crores for the last three years after paying tax.

Additional Information

List of Maharatna's:

• Bharat Heavy Electricals Limited.

• Bharat Petroleum Corporation Limited.

• Coal India Limited.

• Gas Authority of India Limited.

• Hindusthan Petroleum Corporation Limited.

• Indian Oil Corporation Limited.

• National Thermal Corporation Limited.

• Oil and Natural Gas Corporation.

• Power Grid Corporation of India.

• Steel Authority of India Limited.

• Power Finance Corporation Limited.

Q67. Answer: (c) Satpura National Park

The correct answer is Satpura National Park.

• Satpura National Park is the first reserve forest of India.

Key Points

• Satpura National Park is a wildlife habitat located on the border of Satpura in the Hoshangabad district of Madhya Pradesh.

• It is surrounded by Bori and Pachmarhi Wildlife Sanctuaries.

• It was first introduced by the popular bird watcher Dr. Salim Ali in the year 1981.

• Terrain: Sandstone peaks, narrow valleys, ravines, and dense forests.

• Fauna: Indian giant squirrel, porcupine, hornbill, peacock.

• Flora: Sal, teak, tendu, Phyllanthus Emblica, medicinal plants.

• The Denwa River is the main water source of the park.

Important Points

• Jim Corbett National Park is located in the Nainital district of Uttarakhand.

• Also known as Hailey National Park, it is the oldest national park established in the year 1936.

• The park includes the Patli Doon valley formed by the Ram Ganga river.

• Ranthambore National Park is located in Sawai Madhapur, Rajasthan.

• It is bounded by the Banas River in the north and the Chambal River in the south.

• Gir National Park is a wildlife sanctuary in Gujarat, western India.

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Q68. Answer: (a) 206

The correct answer is 206.

• The number of bones in an adult human body is 206.

Key Points

• The adult human skeleton is made up of 206 bones.

• These include the bones of the skull, spine, ribs, arms and legs.

• Bones are made of connective tissue reinforced by calcium and specialized bone cells.

• Most bones contain bone marrow where blood cells are made.

• Femur is the longest bone in the human body.

• Stapes is the smallest bone found in the ear

Q69. Answer: (d) 7

The logic followed here is:-

Each number and word coded on the same place, which is given below:-

7 stands for 'be' in that language.

Hence, "option 4" is the correct answer.

Q70. Answer: (a) malaria

The correct answer is malaria.

• The female Anopheles mosquito is a transmitter of malaria.

Key Points

• Malaria is an acute febrile disease caused by the Plasmodium parasite that is transmitted to people by the bite of a female Anopheles mosquito.

• Plasmodium groups are single-celled microorganisms.

• The disease is widespread in tropical and sub-tropical regions around the equator.

Additional Information

• Dengue virus (DENV) is the cause of dengue fever. It is a mosquito-borne, single positive-stranded RNA virus of the family Flaviviridae; genus Flavivirus.

• Cholera is an acute diarrhoeal infection caused by ingestion of food or water contaminated with the bacterium Vibrio cholerae.

• Typhoid is a bacterial infection that can lead to a high fever, diarrhea, and vomiting.

• It can be fatal.

• It is caused by the bacteria Salmonella typhi.

Q71. Answer: (a) $2^2 \times 3^4 \times 5^3$

Given:

24 × 34 × 53 × 72 and 22 × 36 × 55

Concept used:

HCF by Prime Factorization Method

Calculation:

24 × 34 × 53 × 72 and 22 × 36 × 55

If we calculate the HCF of these two numbers

then we can see highest common factors are $2^2 \times 3^4 \times 5^3$

Therefore Required HCF is 22 × 34 × 53

Q72. Answer: (b) President

The correct answer is President.

• President has the ultimate command of the Union Defense Forces.

• Droupadi Murmu is an Indian politician serving as the 15th and current president of India since 25 July 2022.

Key Points

• The Indian It consists of three professional uniformed services:

• Indian Army

• Indian Navy

• Indian Air Force

• The Department of Defence Production of the Ministry of Defence is responsible for the indigenous production of equipment used by the Indian Armed Forces.

• It comprises the 41 Indian Ordnance Factories under the control of the Ordnance Factories Board, and eight Defence PSUs namely: HAL, BEL, BEML, BDL, MDL, GSL, GRSE and Midhani.

Additional Information

• Article 53 in The Constitution of India:

• The executive power of the Union shall be vested in the President and shall be exercised by him either directly or through officers subordinate to him under this Constitution.

• Without prejudice to the generality of the foregoing provision, the supreme command of the Defence Forces of the Union Shall be vested in the President and the exercise thereof shall be regulated by law. Hence, Option 2 is correct.

• Nothing in this article shall.

• Be deemed to transfer to the President any functions conferred by any existing law on the Government of any State or other authority; or

• Prevent Parliament from conferring by law functions on authorities other than the President.

• President is the supreme commander of the Indian Armed forces. This is the military power vested in him.

• The President can declare war or conclude peace on the advice of the Union Council of Ministers headed by the Prime Minister.

• All important treaties and contracts are made in the President's name.

• He appoints chiefs of all branches of armed forces.

Important Points

Force	Chief
Indian Army	Gen. Upendra Dwivedi
Indian Navy	Admiral Dinesh Kumar Tripathi
Indian Air Force	Air Chief Marshal Amar Preet Singh

Q73. Answer: (c) 5 percent

The correct answer is 5 percent.

• The premium payable for the annual commercial/horticulture crops under the Pradhan Mantri Fasal Bima Yojana, as a percentage of the sum insured/actuarial rate, is 5 percent.

Key Points

• Pradhan Mantri Fasal Bima Yojana was launched on 18 February 2016.

• This scheme replaced the two earlier schemes, namely the Rashtriya Krishi Bima Yojana and the Revised National Agricultural Insurance Scheme.

• It provides insurance against failure of crops due to non-preventable risks like cyclones, typhoons, hurricanes, tornados, landslides, drought, dry season, pests, and diseases which stabilizes the income of the farmers.

• Implementing Agencies: Listed General Insurance Companies which are done by the State Government through bidding, Department of Agriculture Cooperation and Farmers Welfare, Ministry of Agriculture Cooperation and Farmers Welfare.

• Coverage of crops: Food and oilseed crops, commercial and horticultural crops.

• Applicable: The scheme is applicable for farmers availing crop loan/KCC account for notified crops and voluntarily for others.

• Premium: Farmers will have to pay 2% on all Kharif crops, 1.5% on Rabi crops, 5% on commercial and horticultural crops.

• Note: There is no upper limit for government subsidy.

Q74. Answer: (a) 1

Given that:-

Rakhi goes 3 meters North then turns right and walks 4 meters, then again turns right and walks 2 meters, then a again turns right and walks 4 meters.

The figure is given below:-

Thus she is 1 meter from her original position.

Hence, "option 1" is the correct answer.

Q75. Answer: (c) 13

Given:

Numbers = 55, 72, 123

Remainders = 3, 7, 6

Concept used:
H.C.F of certain numbers
Calculation:
55 - 3 = 52
72 - 7 = 65
123 - 6 = 117
H.C.F of 52, 65, 117
=> 52 = 13 × 2^2
=> 65 = 13 × 5
=> 117 = 13 × 3^3
So H.C.F = 13
Therefore The largest number which divides the numbers is 13

Q76. Answer: (a) 32

Given:
Sixteen men can complete a work in 24 days
Twenty four women can complete the same work in 32 days
Concept used:
x man can complete a work in n days
So total work = xn
Calculation:
16 men can complete the work in 24 days
1 man can complete the work in = 16 × 24
=> 384 days
24 women can complete the work in 32 days
1 woman can complete the work in = 32 × 24
=> 768 days
Ratio between man and woman = 384 : 768 =1 : 2
then 1 man = 2 women
16 women = 8 men
So, the number of men complete the work in 12 days = 16 + 8 = 24 men
Since 24 men takes 16 days to complete the work
So, after 12 days, 4 days' work will be left for 24 Men
So, the work left can be completed in 2 days by = 4/2 × 24
=> 48 days
Additional men required to complete the work in 2 days = 48 – 16 = 32 men
Therefore More 32 men is required to complete the work in 2 days

Q77. Answer: (b) 3.12 km/h

Given:
Total distance = 200 m
Speed of Shruti = 4 km/h
Concept used:
Speed = Distance/time
km/h × 5/18 = m/sec
Calculation:
Speed of Shruti in m/sec = 4 × 5/18
=> 10/9 m/sec
Time taken by Shruti to cover 200 m = 200 × 9/10
=> 180 sec
Time taken by Veena to complete the race = 180 + 30 = 210 sec
Distance cover by Veena = 200 - 18 = 182 m

Speed of Veena = 182/210 × 18/5

=> 3.12 km/h

Therefore Veena's speed is 3.12 km/h

Q78. Answer: (a) Antonio Guterres

The correct answer is Antonio Guterres.

• Antonio Guterres is the current Secretary-General of the UN.

Key Points

• The United Nations is an intergovernmental organization whose purpose is to maintain international peace and security, to develop friendly relations between nations, to achieve international cooperation, and to be the center of harmonious work of nations.

• The United Nations Charter was signed on 26 June 1945 and the Charter came into force on 24 October 1945.

• Its headquarter is in New York City.

• The United Nations was preceded by the League of Nations, which came into force on 10 January 1920.

• The League of Nations suffered frequent failures in the Japanese invasion of Manchuria and the Second Italo-Ethiopian War.

• To prevent future wars, the United Nations was established after World War II.

• The organization's objectives include maintaining international peace and security, protecting human rights, providing humanitarian assistance, promoting sustainable development, and upholding international law.

• The initial membership of the United Nations was 51 member states, which increased to 193 member states (as of 2021).

• Official languages: Arabic, Chinese, English, French, Russian, Spanish.

• The current Secretary-General is Antonio Guterres.

Important Points

• The United Nations has six principal organs namely

• The General Assembly.

• The Security Council.

• The Economic and Social Council (ECOSOC).

• The Trusteeship Council.

• International Court of Justice.

• The UN Secretariat.

• The United Nations system also includes a multitude of specialized agencies such as the World Bank Group, the World Health Organization, the World Food Programme, UNESCO, UNICEF.

Q79. Answer: (c) Jamsetji Tata

The correct answer is Jamsetji Tata.

• Jamsetji Tata built the Taj Mahal Palace Hotel in Mumbai by integrating Indian and European styles.

Key Points

• The Taj Mahal Palace is a heritage, five-star, luxury hotel in the Colaba area of Mumbai, located next to the Gateway of India.

• It was opened in the year 1903.

• The hotel is built in the Saracenic Revival style that was used by the British in the 19th century.

Additional Information

• Ratan Naval Tata is an Indian industrialist and former chairman of Tata Sons.

• Jamsetji Nasrwanji Tata was an Indian pioneer, an industrialist who founded the Tata Group.

• Jehangir Ratanji Dadabhoy Tata was an Indian aviator, industrialist, entrepreneur and chairman of Tata Group.

Q80. Answer: (c) 24 m

Shortcut Trick

For a tower of height h, if the angles of elevation from two points at distances a and b from its foot are complementary (sum = 90°), the height is the geometric mean of the distances:

h = √(a × b)

=> h = √(18 × 32)

=> h = √576 = 24 m

Therefore The correct answer is 24 m.

Alternate Method

Given:

Distance of point C from foot B = 18 m

Distance of point D from foot B = 32 m

The angles of elevation are complementary.

Let the height of the tower be AB = h.

Let the angle of elevation at C be θ, then the angle at D is (90° − θ).

=> In right triangle ABC: tan θ = AB / BC = h / 18 — (Eq. 1)

=> In right triangle ABD: tan(90° − θ) = AB / BD = h / 32

=> cot θ = h / 32 — (Eq. 2) [Since tan(90° − θ) = cot θ]

=> Multiplying (Eq. 1) and (Eq. 2):

=> tan θ × cot θ = (h / 18) × (h / 32)

=> 1 = h^2 / 576 [Since tan θ × cot θ = 1]

=> h^2 = 576

=> h = √576 = 24 m

Therefore The correct answer is 24 m.

Additional Information

Complementary Angles

Two angles are called complementary if their sum is exactly 90°. In trigonometry, tan(90° − θ) = cot θ.

Angle of Elevation

The angle of elevation is the angle between the horizontal line of sight and the line of sight up to an object.

Geometric Mean Property

In height and distance problems involving complementary angles from the base, the height is always the geometric mean of the two horizontal distances: h = √(d1 × d2).

Q81. Answer: (c) Damanganga

The correct answer is Damanganga.

• Damanganga is the major river that flows through the Union Territory of Dadra and Nagar Haveli.

Key Points

• Daman Ganga

• The main water of the river is on the western slope of the Western Ghats range and it flows west into the Arabian Sea.

• The river flows through Maharashtra, Gujarat as well as the union territories of Dadra and Nagar Haveli and Daman and Diu.

• The industrial cities of Vapi, Dadra, and Silvassa are situated on the north bank of the river.

• The city of Daman is situated on both the banks of the river estuary.

Additional Information

• The Narmada River, also known as the lifeline of Madhya Pradesh, is the 5th longest river in India.

• It rises from the Amarkantak plateau in Annupur district of Madhya Pradesh.

• It forms a traditional boundary between North India and South India.

• Pinjal is a river in Maharashtra.

• Par is a river originating in Vadapara village, Nashik, Maharashtra.

Q82. Answer: (d) Bombay Plan

The correct answer is Bombay plan.

• It is a joint venture between the big industrialists to establish a planned economy in the country after Bombay plan independence.

Key Points

• Bombay Plan was drafted in 1944 in the want of states to take major initiatives in industrial and other economic investment through a joint proposal of a section of the big industrialist for setting up a Planned Economy.

• This plan was published in two parts or volumes- first in 1944 and second in 1945.

• The Bombay Plan offers a comprehensive vision of mass education, including primary, secondary and vocational, and university schooling. It was also made for adult education and scientific training and research.

Additional Information

• People associated with the Bombay Plan are:

• Mr. J. R. D. Tata.

• Mr. G. D. Birla.

• P. Thakurdas.
• Kasturbhai Lalbhai.
• Sir Shri Ram, Ardeshir Dalal.
• Mr. A. D. Shroff.
• Dr. John Matthai

Q83. Answer: (a) the young population in India began to attend schools

The correct answer is the young population in India began to attend schools X4 was the first.

Key Points

• The Salt March was notable for at least three reasons.

• First, it was this event that first brought Mahatma Gandhi to world attention and was widely covered by the European and American press. Hence, Statement 2 is correct.

• Second, it was the first nationalist activity in which women participated in large numbers. Hence, Statement 3 is correct.

• The socialist activist Kamaladevi Chattopadhyay had persuaded Gandhiji not to restrict the protests to men alone and was herself one of the numerous women who courted arrest by breaking the salt or liquor laws.

• Third, and perhaps most significant, it was the Salt March which forced upon the British the realization that their Raj would not last forever, and that they would have to devolve some power to the Indians. Hence, Statement 4 is correct.

• To that end, the British government convened a series of Round Table Conferences in London.

Q84. Answer: (d) Kenya

The correct answer is Kenya.

• Kenya is NOT a member of OPEC.

Key Points

• Organization of Petroleum Exporting Countries (OPEC) is an intergovernmental organization(national sovereignty over natural resources).

• It was founded on 14th September 1960 in Bagdad.

• It is headquartered in Vienna, Austria(Austria not a member of OPEC state).

• Mission: Coordinate and unify the petroleum policies of its member countries and ensure the stabilization of oil markets.

• To secure an efficient, economic, and regular supply of petroleum to consumers, a steady income to producers, and a fair return on capital for those investing in the petroleum industry.

• Current OPEC members: Algeria, Angola, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, the United Arab Emirates, and Venezuela.

Q85. Answer: (a) 12

Given:

11, 15, 8, 9, k, 11, 12, 12, 15, 14

Concept used:

The mode is the value that occurs the most often in a given set of data.

Calculation:

In the data set provided here, the mode is 12, hence 12 should occur the most number of times.

11, 15, 8, 9, k, 11, 12, 12, 15, 14

Excluding k and arranging these numbers in ascending order,

8,9,11,11,12,12,14,15,15

Here 11, 12, and 15 are occurring twice.

Since 12 is the mode, it should occur more than twice.

Therefore The value of k should be 12.

Q86. Answer: (c) D

Total product in state A = 8 + 10 + 9 + 11 + 11

=> 49

Total production in state B = 11 + 12 + 10 + 9 + 8

=> 50

Total production in state C = 12 + 13 + 14 + 11 + 14

=> 60

Total production in state D = 6 + 8 + 8 + 9 + 7

=> 38

Total production in state D = 18 + 17 + 15 + 16 + 14

=> 80

Therefore State D contributed the least to the total production of wheat

Q87. Answer: (c) E

Total production of all states in 2015 = 8 + 11 + 12 + 6 + 18

=> 55

So 1/3rd of 55 = 18.33

Therefore State E is close to 1/3rd of the total production of all states in 2015

Q88. Answer: (c) 60000

According to the question

Animals are 1/12th part of the town's population [30°/360° = 1/12]

So Animals = 720000 × 1/12

=> 60000

Therefore The number of animals in the town is 60000

Q89. Answer: (d) C

In state C there was a continuous fixed increase in production

12, 13, 14

Therefore In state C there was a continuous and fixed increase in production, from the year 2015 to 2017

Q90. Answer: (a) JSZ

The alphabet template is given below:-

The logic followed here is:-

• We add 1 in each letter.

Hence, "option 1" is the correct answer.

Q91. Answer: (a) 22172151225

The alphabet template is given below:-

The logic followed here is:-

• We put the place value of each letter.

• Given A → 1, V → 22, E → 5

Hence, "option 1" is the correct answer.

Q92. Answer: (c) 3125

The logic followed here is as follows:-

Hence, “Option 3” is the correct answer.

Q93. Answer: (c) 5

Given that:-

Mistake Points Assuming that each is counted only once to fulfil all the conditions listed:

• Two birds in front of a bird.

That means there are two birds here.

• Two birds behind a bird.

That means two more birds are there.

• A bird between two birds.

That means one more bird is there.

So, total number of birds = 2 + 2 + 1 = 5

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Hence, "option 3" is the correct answer.

Confusion Points

Some difference of question Language only "Assuming that each is counted only once to fulfil all the conditions listed" this is already mentioned in question so according to this 5 will be the right answer. If this statement is not given then answer will be 3.

For example:

Wolves move in packs. What is the smallest number of wolves that could move in the following formation: 2 Wolves in front of a Wolf, 2 behind a Wolf and 1 Wolf in between 2 Wolves?

(1) 2 Wolves in front of a Wolf.

(2) 2 behind a Wolf.

(3) 1 Wolf in between 2 Wolves.

So, there can be minimum 3 Wolves.

After solving this question, we get answer is 3.

Q94. Answer: (c) FLXR : YESM

The alphabet template is given below:-

The logic followed here is:-

In the first letter, we add 7 and shift to the fourth letter, then in the second letter, we add 7 and shifted to the third letter and so on.

BQZH → OGXI

Similarly,

From option 1:-

It is not followed.

From option 2:-

It is not followed.

From option 3:-

It is followed.

From option 4:-

It is not followed.

Hence, "option 3" is the correct answer.

Q95. Answer: (d) 34

The alphabet template is given below:-

The logic followed here is:-

We add all the place value of letter.

A(1) V(22) E(5) R(18) Y(25) = 1 + 22 + 5 + 18 + 25 = 71

Similarly,

A(1) M(13) A(1) N(14) D(4) A(1) = 1 + 13 + 1 + 14 + 4 + 1 = 34

Hence, "option 4" is the correct answer.

Q96. Answer: (b) 1818

The logic followed here is:-

Hence, "option 2" is the correct answer.

Q97. Answer: (b) 61

The alphabet template is given below:-

The logic followed here is:-

We add all the place value of letter.

R(18) A(1) H(8) U(21) L(12) = 18 + 1 + 8 + 21 + 12 = 60

Similarly,

R(18) A(1) J(10) E(5) S(19) H(8) = 18 + 1 + 10 + 5 + 19 + 8 = 61

Hence, "option 2" is the correct answer.

Q98. Answer: (a) 768

The logic followed here is:-

Hence, "option 1" is the correct answer.

Q99. Answer: (d) S

Given that:-

Six persons are playing a card game. They are sitting in a circle facing the centre

1) S is facing R who is to the left of A and the right of P.

Here who is used for R not for S. So S is facing R and R is to the left of A and the right of P.

2) A is to the left of D and Y is to the left of P.

If D exchanges his seat with Y and P exchanges his seat with R,

Then the final arrangement is given below:-

Thus S is sitting to the left of D.

Hence, "option 4" is the correct answer.

Q100. Answer: (a) South-east

We know that:

Given that:-

Arun walks 10 yards straight from his house which is facing north and then he walks 20 yards in the reverse direction.

Further, he takes a left turn and walks 10 yards.

The figure is given below:-

Arun is South-East direction now from his original position.

Hence, "option 1" is the correct answer.

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