RRB NTPC CBT-I Official Paper (Held On: 5 Feb 2021 Shift 1) (Previous Year Paper)

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

Take this paper as a timed mock test

Practise under exam conditions, then review your answers after you submit.

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Scan the QR code or click the link to open it.

Q1. Find the value of 18 – [6 – {4 – (8 – (6 + 3))}]

(a) 11
(b) 3
(c) 6
(d) 17

Q2. Where is INS Sardar Patel Naval Base located?

(a) Porbandar
(b) Vishakhapatnam
(c) Chennai
(d) Mumbai

Q3. An artificial leaf to create fuel from sunlight was developed by which Indian organisation?

(a) BITS Pilani
(b) CSIR
(c) IIT Mumbai
(d) DRDO

Q4. In a triangle ABC, what will be the value of a(b cos C – c cos B)?

(a) $b^2 + c^2$
(b) b^2
(c) c^2
(d) $b^2 – c^2$

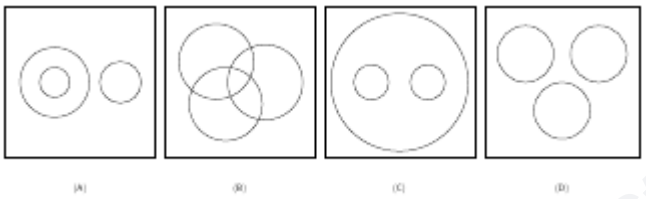
Q5. _____ was started in 2002, for ensuring drinking water supply to all villages.

(a) Antyodaya Anna Yojana
(b) Annapurna Yojana
(c) Swajaldhara Yo Annapurna Yojanajana
(d) Sampoorna Grameen Rozgar Yojana

Q6. In which state is the Mudumalai National Park located?

(a) Andhra Pradesh
(b) Gujarat
(c) Tamil Nadu
(d) Maharashtra

Q7. Select the Venn diagram that best represents the relationship between the following classes.
Scientists, Researchers, Professors



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

Q8. Select the legislation that does NOT deal with the protection of environment.
(a) The Forest (Conservation) Act,1980
(b) The Port Laws Amendment Act,1997
(c) The Water (Cess) Act,1977
(d) The Public Liability Insurance Act,1991

Q9. Which gas is also known as the laughing gas?
(a) Helium
(b) Oxygen
(c) Methane
(d) Nitrous Oxide

Q10. Who among the following is considered as the father of the world wide web?
(a) Sir Timothy John Berners-Lee
(b) Robert Cailliau
(c) Pei-Yuan Wei
(d) James H. Clark

Q11. Which of the following can be used for purification of water?
(a) Alum
(b) Nitrogen
(c) Sodium
(d) Carbon dioxide

Q12. A tank can be filled by 5 pipes in 80 minutes. How long will it take to fill the tank by 8 pipes of same dimensions?
(a) 30 minutes
(b) 128 minutes
(c) 78 minutes
(d) 50 minutes

Q13. What does World Trade Organisation (WTO) promote?
(a) Unilateral trade
(b) Global peace
(c) Financial support
(d) Multi-lateral trade

Q14. Arrange the following in a meaningful sequence:
A. Disease B. Treatment C. Infection D. Recovery E. Diagnosis
(a) D→B→E→C→A
(b) A→C→B→D→E
(c) C→A→E→B→D
(d) C→E→A→B→D

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Q15. The reason for the Constitution of India to be republican is that it:

(a) provides for adult franchise
(b) has no hereditary elements
(c) contains a bill of rights
(d) provides for an elected President

Q16. If A's salary is 20% less than B's salary, by how much percentage is B's salary more than A's?

(a) 162/3 %
(b) 331/3 %
(c) 20%
(d) 25%

Q17. Lectures A, B, C, D, E and F are to be organised in a span of seven days from Monday to Sunday, only one lecture on each day. One lecture have to be organised only once. One day there will be no lecture. C should be organised immediately before D. E should be before D and there should be gap of two days between E and D. D should be organised before Friday. No lecture should be organised immediately after E. A should be organised on Saturday. F should not be organised on last day.

How many lectures are organised between F and E?

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

Q18. The fourth proportional to 4, 9, 12 is: _____

(a) 72
(b) 36
(c) 48
(d) 27

Q19. Select the option that is related to the third term in the same way as the second term is related to the first term.

Length : Meter :: Mass : ?

(a) Weight
(b) Kilogram
(c) Heaviness
(d) Weight machine

Q20. Find the LCM and HCF of 12, 15 and 21

(a) 420, 3
(b) 240, 21
(c) 140, 3
(d) 420, 6

Q21. A, B and C can do a piece of work in 20, 30 and 60 days, respectively. A works every day. B assists A on all odd-numbered days, while C assists A on all even-numbered days. In how many days will the work be completed?

(a) 131/5
(b) 131/4
(c) 131/2
(d) 131/3

Q22. A _____ satellite GSAT-12 was launched by PSLV-C17 from Sriharikota.

(a) nano
(b) communication
(c) meteorological
(d) pico

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Q23. If 4/5 + (-3/10) = x + 11/2, then what will be the value of x?

(a) -2
(b) 2
(c) -1
(d) 1

Q24. Solve the following.

tanA/(1+secA) + (1+secA)/tanA = ?

(a) 2 sin A
(b) 2 cos A
(c) 2 secA
(d) 2 cosecA

Q25. _____ is a device by which two different photographs of the same object can be viewed together.

(a) Stroboscope
(b) Stethoscope
(c) Spectroscope
(d) Stereoscope

Q26. The financial powers of the chiefs of which Indian defence segments have been extended by the Home Ministry?

(a) Air Force
(b) Indian Navy
(c) Paramilitary
(d) Central Armed Police Forces

Q27. The height of Mt Godwin Austin (K-2) is _____ m.

(a) 8586
(b) 8126
(c) 8611
(d) 8848

Q28. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.

Pupil, Cochlea, Cornea, Iris

(a) Cornea
(b) Cochlea
(c) Iris
(d) Pupil

Q29. Name the first Indian to join viceroy's executive council.

(a) Tej Bahadur Sapru
(b) Satyendra Prasanna Sinha
(c) Satish Ranjan Das
(d) Bhupendra Nath Mitra

Q30. Consider the given statement and decide which of the given assumptions is/are implicit in the statement.

Statement:

A child should be put in school at the age of 5 years or so.

Assumptions:

I. The schools do not admit children after 6 years of age.

II. Below the age of 5 a child does not attain appropriate level of development and ability to learn.

(a) Both I and II are implicit.
(b) Neither I nor II is implicit.
(c) Only I is implicit.
(d) Only II is implicit.

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Q31. If the base and height of a triangle of a triangle are 6 cm and 8 cm respectively, then the area of the triangle is:

(a) 24 cm²
(b) 28 cm²
(c) 48 cm²
(d) 36 cm²

Q32. Which model was the First Five Year Plan based on?

(a) Gadgil Yojana
(b) John W Miller
(c) PC Mahalanobis Model
(d) Harrod-Domar

Q33. A sum of money becomes 8 times of itself in 3 years at compound interest compounded annually. The rate of interest is:_____

(a) 100%
(b) 8%
(c) 5%
(d) Data inadequate

Q34. Find the value of x if $x/\sqrt{128} = \sqrt{162}/x$

(a) 196
(b) 144
(c) 14
(d) 12

Q35. _____ is NOT a notified Biosphere Reserve in India.

(a) Nilgiri
(b) Nallamalai
(c) Agasthyamalai
(d) Pachmahri

Q36. Introducing a woman, Rohan tells Shayam, "She has a son and a daughter. I am the maternal uncle of her daughter's daughter." How is the woman related to Rohan?

(a) Mother
(b) Mother's mother
(c) Mother's sister
(d) Sister

Q37. If 2/5 of the number of girl students attending a school function is equal to 3/5 of the number of boys attending the function, what fraction of the total students attending the function will be 2/5 of the number of girl students attending the function?

(a) 2/3
(b) 6/25
(c) 5/6
(d) 1/5

Q38. If $a - b = 5$ and $a^2 + b^2 = 41$, then what is the value of ab?

(a) 7
(b) 16
(c) 8
(d) 5

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Q39. Which active volcano is known as the Light House of the Mediterranean?

(a) Cotopaxi
(b) Mt Etna
(c) Stromboli
(d) Mt Vesuvius

Q40. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.

Patna, Bengaluru, Itanagar, Chandigarh

(a) Bengaluru
(b) Chandigarh
(c) Patna
(d) Itanagar

Q41. Which of the following is a factor of the polynomial $x^2 – x – 20$?

(a) x – 5
(b) x – 4
(c) x + 2
(d) x + 5

Q42. In a box containing one rupee, 50 paise and 25 paise coins in the ratio 1 : 2 : 3, the number of 50 paise coins was eighty. How much money was there in the box?

(a) Rs. 108
(b) Rs. 110
(c) Rs. 105
(d) Rs. 100

Q43. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.

Statements:

Some dogs are white.

All white things are beautiful.

Conclusions:

I. All beautiful white things are dogs

II. Some dogs are beautiful.

(a) Both conclusions I and iI follow.
(b) Neither conclusion I nor II follows.
(c) Only conclusion I follows.
(d) Only conclusion II follows.

Q44. Select the correctly matched pair (organisation with their headquarters) from the following pairs.

(a) UNESCO : Geneva
(b) ILO : Washington
(c) UNIDO : Vienna
(d) IMF : Paris

Q45. Study the following digit-letter-symbol series carefully and answer the question that follows.

Np4@8cQ9%6TkF3=5g4&RwJX

How much such numbers are there in the sequence, each of which is immediately preceded by a letter and immediately followed by a symbol?

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

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Q46. Which out of these is the Harappan site discovered in Gujarat?

(a) Manda
(b) Khandia
(c) Balathal
(d) Dholavira

Q47. An interface between the human user and the computer hardware is known as: _____.

(a) operating system
(b) software
(c) modem
(d) operating unit

Q48. A man travelled a distance of 61 km in 9 h. He travelled partly on foot at the speed of 4 km/h and partly on bicycle at the speed of 9 km/h. What was the distance travelled on foot?

(a) 12 km
(b) 16 km
(c) 18 km
(d) 14 km

Q49. _____ broke the world record for 300 m at the Ostrava Golden Spike in June 2019.

(a) Carl Lewis
(b) Eliud Kipchoge
(c) Shaunae Miller-Uibo
(d) Usain Bolt

Q50. The area, in square units, of a triangle formed by the coordinate axis and the straight line 5x + 7y = 35 is:

(a) 35/2
(b) 35
(c) 2/35
(d) 25/2

Q51. A and B together can complete a piece of work in 35 days. A alone can complete the same work in 60 days. B alone will be able to complete same work in:

(a) 96 days
(b) 42 days
(c) 84 days
(d) 72 days

Q52. The Jallianwala Bagh tragedy was a direct result of the protest against _____.

(a) The Montague-Chelmsford Reforms
(b) Morley-Minto reforms
(c) Defence of India Act
(d) The Rowlatt Act

Q53. Find the mode if mean and median are 4 and 5 respectively.

(a) 11
(b) 7
(c) 9
(d) 5

Q54. Who composed 'The Dashakumaracharita' or 'Tales of Ten Princes'?

(a) Bhartrhari
(b) Dandin
(c) Budhasvamin
(d) Rahas Bihari Dwivedi

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Q55. In which year did the Indian National Congress split into two groups on the banks of River Tapti at The Surat Session?

(a) 1919
(b) 1916
(c) 1907
(d) 1909

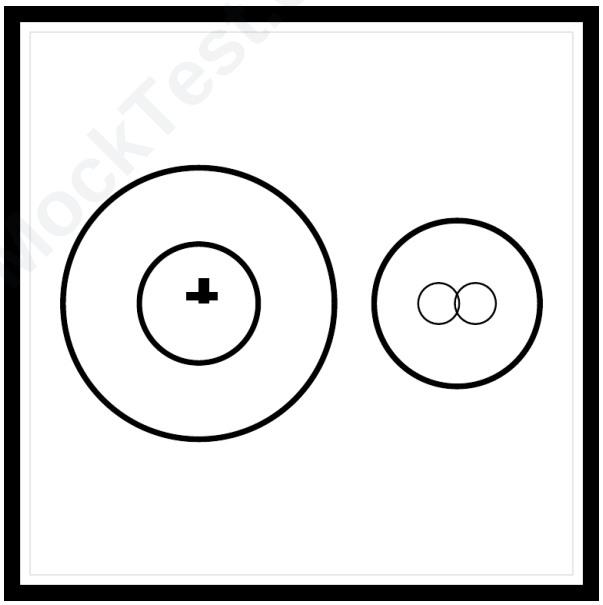
Q56. The sum of two numbers is 27 and the difference of their squares is 243. What is the difference the numbers?

(a) 72
(b) 9
(c) 3
(d) 42

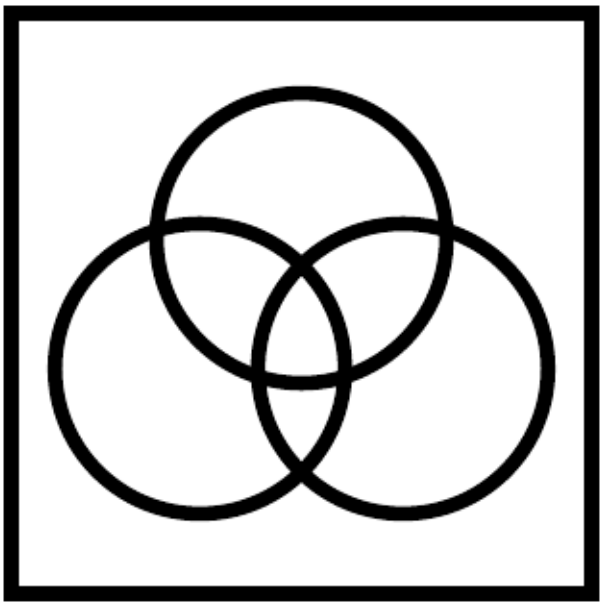
Q57. Select the Venn diagram that best represents the relationship between the following classes.

Flower, Rose, Bee

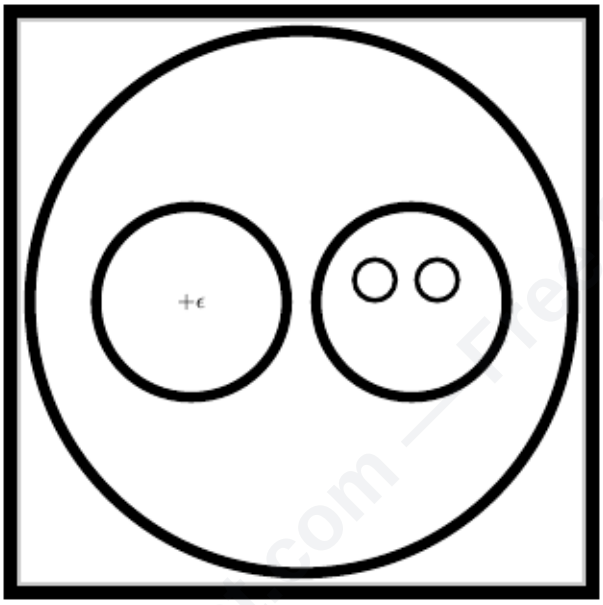
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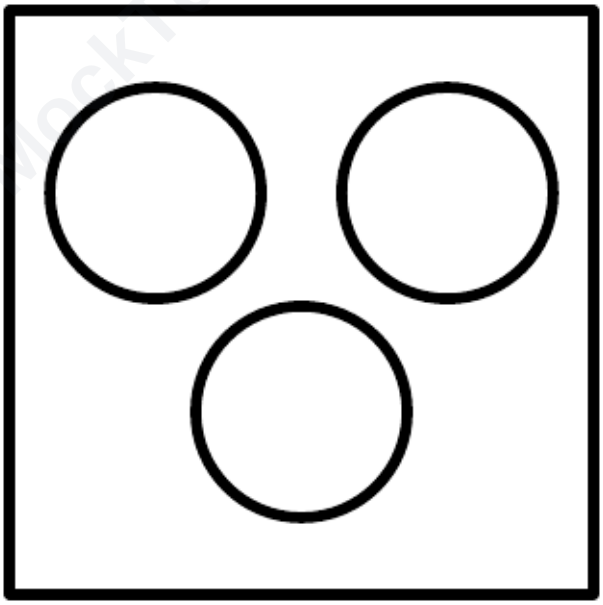
2.



3.



4.



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

Q58. Which one of the following is the main source of power generation in India?

(a) Thermal power
(b) Solar power
(c) Hydro power
(d) Nuclear power

Q59. Which of the following exponents does NOT play the Sitar?

(a) Pt Shiv Kumar Sharma
(b) Ustad Vilayat Khan
(c) Anoushka Shankar
(d) Pt Ravi Shankar

Q60. Under whose administration is the Department of Atomic Energy?

(a) Ministry of Power
(b) Cabinet Secretariat
(c) Ministry of Science and Technology
(d) Prime Minister's Office

Q61. In the Eleventh Five Year Plan, artisans related to_____ were supported by the 'Marketing Support and Services Scheme'.

(a) handlooms
(b) leather goods
(c) handicrafts
(d) gems and jewellery

Q62. Name the first Indian female Bharatnatyam dancer to be awarded with the Padma Vibhushan.

(a) Hema Malini
(b) Sonal Mansingh
(c) Yamini Krishnamurthy
(d) Vyjayanthimala Bali

Q63. Which of the following is different from the rest?

Writer, Reader, Publisher, Printer

(a) Printer
(b) Reader
(c) Writer
(d) Publisher

Q64. The position of the point (3, 4) with respect to the circle $x^2 + y^2 – 3x – 4y + 1 = 0$:

(a) lies on it
(b) lies inside it
(c) cannot be decided
(d) lies outside of it

Q65. A rectangle has 15 cm as its length and 150 cm^2 as its area. If the area is increased to 11/3 times the original area by increasing its length only, then the new perimeter is:

(a) 80 cm
(b) 50 cm
(c) 70 cm
(d) 60 cm

Q66. The decimal representation of 5/100 + 2/5 – 6/25 is:

(a) 0.51
(b) 0.35
(c) 0.45
(d) 0.21

Q67. _____ taxes are levied by the State Government in India.

(a) Capital gains
(b) Excise duty on liquor
(c) Customs
(d) Corporation

Q68. The Indian League was established in 1875 in Calcutta (now Kolkata) by_____.

(a) Anand Mohan Bose
(b) Sisir Kumar Ghosh
(c) Dwarka Nath Tagore

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(d) Devendra Nath Tagore

Q69. Which of the following is NOT a warm water current?

(a) Humboldt current
(b) Kuroshio current
(c) Alaskan current
(d) Tsushima current

Q70. Which is the official bird of Andaman Nicobar island?

(a) Sooty Tern
(b) Wood Pigeon
(c) Great Hornbill
(d) Indian Roller

Q71. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.

Statements:

All kites are birds. No bird is a bat.

Conclusions;

I. No kite is a bat.

II. Some kites are bats.

(a) Only conclusion I follows.
(b) Both conclusions I and II follow.
(c) Neither conclusion I nor II follows.
(d) Only conclusion II follows.

Q72. Who was elected as the chairperson of the Press Trust of India (PTI) in September 2020?

(a) Hormusji N Cama
(b) Mahendra Sharma
(c) Aveek Sarkar
(d) MP Virendra Kumar

Q73. A boy told his sister, "I have sisters twice the number of brothers." The sister commented, "I have the same number of brothers and sisters. "What is the number of girls in the family?

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

Q74. Which organisations have launched Blue Dot hubs to boost protection for children and families on the move across Europe?

(a) UNDP and UNICEF
(b) UNDP and UNHCR
(c) WHO and UNDP
(d) UNICEF and UNHCR

Q75. Mahindra and Mahindra collaborated with_____ to explore deployment of its electric vehicles in 2019.

(a) Savaari
(b) Meru
(c) Ola
(d) Uber

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Q76. John, Sarah, Tom and Joane bought 3 pizzas of the same size in all. John ate 2/4 of a pizza. Sarah, Tom and Joane ate 3/4 of a pizza each. How much pizza was left?

(a) 1/4 of a pizza
(b) 1/2 of a pizza
(c) 1 pizza
(d) 3/4 of a pizza

Q77. A person buys an article for Rs. 650 and gains 6% on selling it. Find the selling price (in Rs).

(a) 656
(b) 689
(c) 789
(d) 986

Q78. _____ is India's first indigenously built warship.

(a) INS Shivalik
(b) INS Arihant
(c) INS Talwar
(d) INS Godavari

Q79. FORTRAN is the _____.

(a) link to connect all the universities.
(b) language of the fifth generations of computers.
(c) first high level programming language.
(d) first electronic digital computer of the world.

Q80. Find the square root of 42.25.

(a) 7.5
(b) 6.5
(c) 5.5
(d) 4.5

Q81. If $X = 3^2 \times 2$, $Y = 2^3 \times 3$ and $Z = 3^2 \times 2^2$ then the L.C.M. of XY, YZ, ZX is:

(a) 2582
(b) 2482
(c) 2492
(d) 2592

Q82. The original price of a TV set is Rs. 9,000. The price is discounted by 20% and then raised by 10%. What is its new price?

(a) Rs. 7,900
(b) Rs. 7,920
(c) Rs. 9,920
(d) Rs. 9,000

Q83. Find the coordinates of the point which will divide the line joining the point (2, 4) and (7, 9) internally in the ratio 1 : 2

(a) (11/3,17/3)
(b) (5/3,1/3)
(c) (8/3,11/3)
(d) (3/8,3/11)

Q84. Who described Mahatma Gandhi as "the great soul in beggar's garb"?

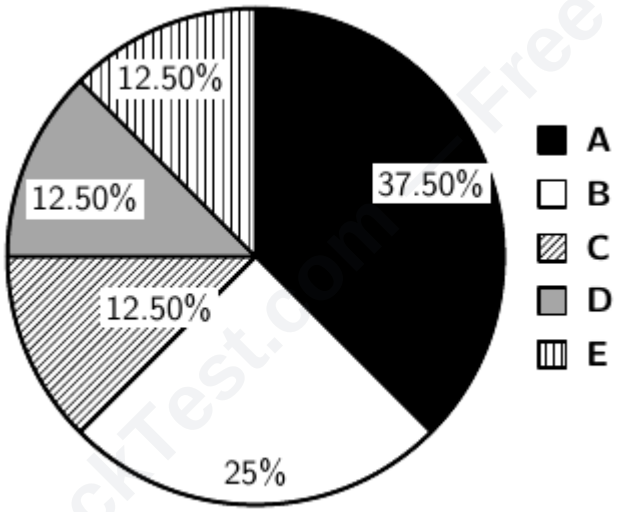
(a) Pherozeshah Mehta
(b) Rabindranath Tagore
(c) Winston Churchill
(d) Surendranath Banerjee

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Q85. In a certain code language, TEACHER is written as TFCFLJX. How will CATCHER be written as in that language?

(a) CBVFLJX
(b) BCVFLJY
(c) CBVFJLX
(d) BCVFLXJ

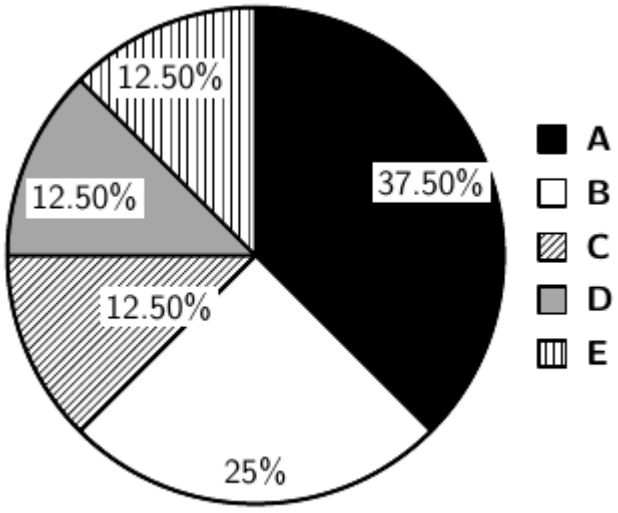
Q86. The following pie graph shows the percentage sale of 5 brands of cars, A, B, C, D and E, during current year.



Which of the following conclusions is NOT correct as per the data represented in the graph?

(a) Sales of A is greater than the sale of C and D taken together
(b) Sale of C is less than 50% of the sale of A
(c) Sale of E is double the sale of B.
(d) Sale of E is 50% of the sale of B

Q87. The following pie graph shows the percentage sale of 5 brands of ears, A, B, C, D and E, during current year.

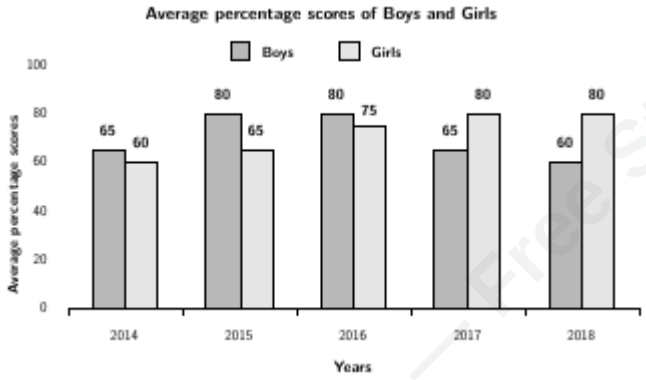


What is the combined sale of C, D and E as a percentage of A sales?

(a) 75%
(b) 125%
(c) 100%
(d) 50%

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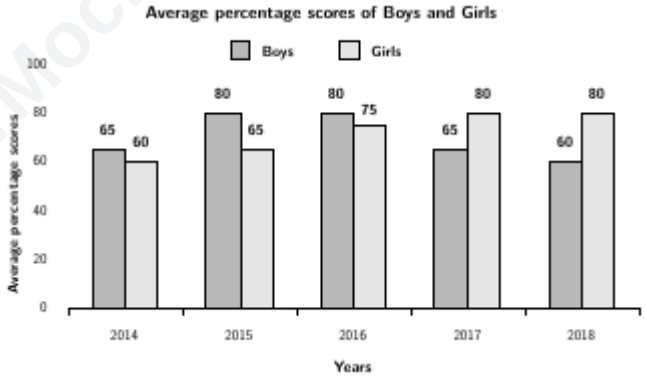
Q88. The given histogram shows average percentage score of boys and girls in an examination during the year 2014-2018.



What is the absolute difference between the overall average score of boys and that of girls during the five years?

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

Q89. The given histogram shows the average percentage score of boys and girls in an examination during the years 2014-2018.



What is the ratio of the absolute difference in percentage scores of boys and girls in 2014 as compared to the absolute difference in their percentage scores in 2018?

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

Q90. Select the letter that can replace the question mark (?) in the following series.

W, U, R, ?, I, C

(a) M
(b) N
(c) V
(d) O

Q91. In a certain code language, TELEVISION is written as UJNIYLWKTO. How will SHUTTER be written as in that language.

(a) TKWVWFV
(b) TIWUWFV
(c) THWTWEN
(d) SKUVTFE

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Q92. A family consists of 7 people with three couples. The artist is married to the politician and they have three children. The teacher is the sister-in-law of the accountant, who is the wife of the engineer. The doctor and businessman are brothers. Who among the following could be the husband of the teacher?

(a) Politician
(b) Doctor
(c) Engineer
(d) Accountant

Q93. Read the given statement and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statement.

Statement:

The government has recently announced many concessions and has offered attractive schemes for foreign tourists.

Conclusions:

I. The Government seems to be serious in attracting foreign tourists.

II. Now, more number of foreign tourists are likely to visit the country.

(a) Both conclusions I and II follow.
(b) Only conclusion II follows.
(c) Neither I nor II follows.
(d) Only conclusion I follows.

Q94. If '+' means '÷', '–' means '×', '×' means '+', and '÷' means '–', then which of the following equations is correct?

(a) 7 × 2 ÷ 6 + 3 – 4 = 13
(b) 7 × 2 + 6 ÷ 3 – 4 = 13
(c) 7 ÷ 2 + 6 × 3 – 4 = 13
(d) 7 ÷ 2 × 6 + 3 – 4 = 13

Q95. Five persons Abi, Raj, Brij, Ritz and Das are sitting on a ladder one above the other (not necessarily in the same order). Raj sits immediately above Ritz. Ritz is immediately above Abi. Only two persons sit between Ritz and Das. If Das sits below Abi, then how many persons will sit between Das and Raj?

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

Q96. Select the number that will come next in the following series.

5, 7, 3, 9, ?

(a) 3
(b) 1
(c) 13
(d) 5

Q97. Study the following digit-letter-symbol series carefully and answer the question that follows.

Np4@8cQ9%6TkF3=5g4&RwJX

Which character is 5^(th) to the right of the 18^(th) character from the right end?

(a) F
(b) T
(c) 6
(d) k

Q98. In a line of students, Rohan is 7^(th)from the left and 20^(th) from the right. How many students are there in the row?

(a) 14
(b) 13
(c) 26

(d) 27

Q99. In a certain code language, CARPENTER is written as AAPPCNREP. How will KITCHEN be written as in that language?

(a) KGTAHCN
(b) IIRCFEL
(c) IIVCFEL
(d) KKTEHGN

Q100. On interchanging signs + and ÷, and numbers 7 and 9, which of the following equations would be correct?

(a) 7 + 3 – 4 ÷ 9 × 5 = 40
(b) 7 × 3 + 3 ÷ 9 – 5 = 12
(c) 7 + 3 × 4 ÷ 9 – 5 = 14
(d) 7– 3 × 4 ÷ 9 + 3 = 2

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (d) 17

GIVEN:

18 - [6 - {4 - (8 - (6 + 3))}]

FORMULA USED:

BODMAS

B	Brackets in order	(), {},[]
O	Of	Of
D	Division	÷
M	Multiplication	×
A	Addition	•
S	Subtraction	•

CALCULATION:

Here, we have 18 - [6 - {4 - (8 - (6 + 3))}]

=> 18 - [6 - {4 - (8 - 9)}]

=> 18 - [6 - {4 + 1}]

=> 18 - [6 - 5]

=> 18 - 1 = 17.

Hence, the required value is 17.

Q2. Answer: (a) Porbandar

The correct answer is Porbandar.

Key Points

• INS Sardar Patel is a Forward Operating Base (FOB) of the Indian Navy in Porbandar, Gujarat.
• It is the Headquarters of the Naval Officer-in-Charge (Gujarat, Diu & Daman).
• It provides logistic support to the Indian Navy units deployed in the Northern Arabian Sea.
• It is the second naval base in Gujarat after INS Dwarka, which is near Okha.
• The name Sardar Patel has been chosen to signify the role of India's Iron Man Vallabhai Patel.

Additional Information

• The base was commissioned on 9 May 2015 by Anandiben Patel, the Chief Minister of Gujarat.
• Cmde BR Prakash, VSM who is the Naval Officer-in-Charge is the first Commanding Officer of INS Sardar Patel.
• The commissioning ceremony was attended by
• Admiral RK Dhowan, Chief of the Naval Staff, Vice Admiral SPS Cheema
• Flag Officer Commanding–in–Chief, Western Naval Command, senior naval officers.
• The commissioning of INS Sardar Patel at Porbandar enables the Navy to augment its infrastructure.
• It will improve coordination and synergy with other maritime agencies.

Q3. Answer: (b) CSIR

The correct answer is CSIR.

Key Points

• CSIR is the Council of Scientific and Industrial Research - National Chemical Laboratory in Pune.
• The researchers at CSIR have developed an artificial leaf.
• The leaf absorbs sunlight to generate hydrogen fuel from water.
• It is an advance that may provide clean energy for powering eco-friendly cars in the future.
• The device consists of semiconductors stacked in a manner to simulate the natural leaf system.
• When visible light strikes the semiconductors, electrons move in one direction, producing electric current.
• The current almost instantaneously splits water into hydrogen.
• Researchers believe is one of the cleanest forms of fuel as its main by-product is water.

Additional Information

• The Council of Scientific and Industrial Research was established by the Government of India in September 1942.
• It is an autonomous body that has emerged as the largest research and development organization in India.
• It runs 38 laboratories, 39 outreach centers, 3 Innovation Centres and 5 units throughout the nation.
• It has a collective staff of over 14,000, including a total of 4,600 scientists and 8,000 technical and support personnel.
• It is mainly funded by the Ministry of Science and Technology.
• It operates as an autonomous body through the Societies Registration Act, 1860.

Q4. Answer: (d) $b^2 – c^2$

GIVEN:

$a(b \cos C – c \cos B)$

FORMULA USED:

$\cos C = (a^2 + b^2 - c^2)$ over $2ab$

$\cos B = (a^2 + c^2 - b^2)$ over $2ac$

CALCULATION:

Here, we have a triangle ABC

Now, $a(b \cos C - c \cos B)$

$\Rightarrow a b \cos C - a c \cos B$

$\Rightarrow a b \times (a^2 + b^2 - c^2)$over $2\ a b - a c \times (a^2 + c^2 - b^2)$ over $2\ ac$

$\Rightarrow (a^2 + b^2 - c^2)$over $2 - (a^2 + c^2 - b^2)$ over 2

$\Rightarrow (a^2 - a^2 + b^2 + b^2 - c^2 - c^2)$over $2 = 2 \times (b^2 - c^2)$over $2 = b^2 - c^2$

Hence, the required value is $b^2 - c^2$.

Q5. Answer: (c) Swajaldhara Yo Annapurna Yojanajana

The correct answer is Swajaldhara Yojana.

Key Points

• Swajaldhara Yojana

• "Swajaldhara" project aims to achieve self-sufficiency in drinking water in rural India.

• This is in line with decentralization of planning and management as enshrined in the 73rd Constitutional Amendment.

• Shri Kumar hoped that work can be started in villages from 25th December 2002.

• All the proposals, which are received before 15th December was finalized by the Ministry.

• Government invested more than Rs.38,000 crore at constant prices.

• It is much more than Rs.100,000 crore at the current price for creating drinking water sources and systems in rural India.

Additional Information

• Antyodaya Anna Yojana

• Antyodaya Anna Yojana (AAY) is a public distribution system scheme that was implemented in India in 2000.

• The main purpose of the system is to provide food security to the people and to end hunger in India.

• It covers the poorest of the poor in our country.

• It was implemented first in the Rajasthan State.

• Annapurna Yojana

• Annapurna scheme is being implemented in this state from 1st April 2001.

• This is a 100% centrally sponsored scheme.

• Under this scheme 10 Kg of food grains per month are provided free of cost to people 65 years and above age.

• The eligibility of this scheme is that the person should not be in receipt of a pension.

• Sampoorna Grameen Rozgar Yojana

• On September 25, 2001, the Sampoorna Grameen Rozgar Yojana was established.

• Its goal was of providing productive employment to the destitute people of rural India.

• The Panchayati Raj institutions (PRIs) were in charge of implementing the initiative.

Q6. Answer: (c) Tamil Nadu

The correct answer is Tamil Nadu.

Key Points

• Mudumalai National Park

• Mudumalai National Park is a national park in the Nilgiri Mountains in Tamil Nadu.

• It covers 321 km2 at an elevation range of 850–1,250 m in the Nilgiri District.

• It shares boundaries with the states of Karnataka and Kerala.

• The national park has been part of Nilgiri Biosphere Reserve since 1986.

• It was declared a tiger reserve together with a buffer zone of 367.59 km2 in 2007.

• It receives an annual rainfall of about 1,420 mm.

• It is drained by the Moyar River and several tributaries, which harbor 38 fish species.

Additional Information

• The word Mudumalai is a Tamil word with 'mudhukadu' meaning ancient forest.

• The word 'malai' means hill or mountain.

• The name 'Mudumalai forest' was already in use when the British Government rented the forest in 1857 for logging purposes.

• In 2010, the National Tiger Conservation Authority approved the release of funds to Mudumalai Tiger Reserve in the frame of Project Tiger.

• In 2020, Project Tiger has been extended until 2021 with funding of Rs. 114.1 million borne.

• Mudumalai National Park harbors tropical and subtropical moist broadleaf forests.

• The floral diversity comprises 498 plant species including 154 tree, 77 shrub, 214 herb and 53 vine species.

Q7. Answer: (d) B

Given: Scientists, Researchers, Professors

As we can say that, some professors may be scientists or researchers. Also, some scientists may be researchers or professors.

Thus, we get the Venn diagram as:

Hence, option 4 is the correct answer.

Q8. Answer: (b) The Port Laws Amendment Act,1997

The correct answer is The Port Laws Amendment Act,1997.

Key Points

• The Port Laws Amendment Act,1997

• The Major Ports Trust Act, 1963, was amended by the Port Laws (Amendment) Act, 1997.

• It was to constitute the TAMP.

• Minor ports are outside the ambit of TAMP.

• Once the major ports are converted from trusts into corporate entities, they go out of the ambit of the Major Port Trusts Act, 1963.

Additional Information

• The Forest (Conservation) Act,1980

• The Forest (Conservation) Act of 1980 is an act by the Parliament of India.

• It ensures the conservation of forests and its resources.

• It came into force on October 25, 1980.

• The Water (Cess) Act,1977

• The Water (Prevention and Control of Pollution) Cess Act was enacted in 1977.

• It was to provide for the levy and collection of a cess on water consumed by persons.

• The Public Liability Insurance Act,1991

• The Public Liability Insurance Act, 1991, was enacted after the Bhopal gas tragedy.

• It says that the owner of a company compensates victims of accidents, irrespective of neglect.

Q9. Answer: (d) Nitrous Oxide

The correct answer is Nitrous Oxide.

Key Points

• Nitrous Oxide is also called laughing gas or happy gas due to its intoxicating effects when inhaled.

• It was initially discovered around 1772 by the English scientist and Clergyman Joseph Priestley.

• It is a colorless, non-flammable gas.

• This gas is used in medical and dental procedures as a sedative.

• It helps to relieve anxiety before the procedure and allows the patient to relax.

• Nitrous oxide is routinely used alongside other anesthetic agents in operating rooms everywhere.

• It's also used as a mild sedative and analgesic during childbirth, for emergency medical care and for dental procedures.

Additional Information

• Nitrous oxide is a depressant, so it slows your body down.

• Once it kicks in, you may feel happy, giggly, light-headed, mild-euphoria, relaxed.

• Nitrous oxide gets the name "laughing gas" because of these effects.

• Some people may also experience mild hallucinations while under the use of laughing gas.

• Physically, you might feel like your arms and legs are heavy.

• You may also experience a tingling sensation in your limbs.

Q10. Answer: (a) Sir Timothy John Berners-Lee

The correct answer is Sir Timothy John Berners-Lee.

Key Points

• Sir Timothy John Berners-Lee

• Sir Timothy John Berners-Lee also known as TimBL.

• He is an English computer scientist best known as the inventor of the World Wide Web.

• He is a Professorial Fellow of Computer Science at the University of Oxford.

• He is a professor at the Massachusetts Institute of Technology (MIT).

• Berners-Lee is the director of the World Wide Web Consortium (W3C).

• He co-founded the World Wide Web Foundation.

• He is considered as the father of the world wide web.

Additional Information

• Robert Cailliau

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• Robert Cailliau is a Belgian informatics engineer, computer scientist and author.
• He proposed the first hypertext system for CERN in 1987.
• He collaborated with Tim Berners-Lee on the World Wide Web.
• He designed the historical logo of the WWW.
• Pei-Yuan Wei
• Pei-Yuan Wei is a Taiwanese-American businessman.
• He created ViolaWWW, the first popular graphical web browser.
• Wei was a founding employee of Global Network Navigator.
• James H. Clark
• James Henry Clark is an American entrepreneur and computer scientist.
• He founded several notable Silicon Valley technology companies, including Silicon Graphics, Netscape, myCFO, and Healtheon.
• His research work in computer graphics led to the development of systems for the fast rendering of three-dimensional computer images.

Q11. Answer: (a) Alum

The correct answer is Alum.

Key Points

• Alum, also known as aluminium sulfate.
• It is added to water in order to destabilize the mud particles suspended in it.
• This process is known as coagulation.
• Alum helps in purifying water by aluminium which coagulates the mud particles.
• It has a high charge on the aluminium ion (Al+3).
• It helps the small particles of suspended solids to group together until they are of such size that they sink and can be removed.

Additional Information

• Alum is a type of compound that is very useful in daily life that you find in the grocery store for pickling and in baking powder.
• It is also used in leather tanning, as an ingredient in aftershave and as a treatment for fire-proof textiles.
• The alum used for purifying water is known as potash alum.
• Its chemical formula is KAl(SO4)2.
• It is a combination of double sulphate of potash and aluminium.

Q12. Answer: (d) 50 minutes

GIVEN:

A tank can be filled by 5 pipes in 80 minutes

CALCULATION:

Here, a tank can be filled by 5 pipes = 80 minutes

A tank can be filled by 8 pipes = 80 × 5 / 8 = 50 minutes

Hence, it will take 50 minutes to fill the tank.

Q13. Answer: (d) Multi-lateral trade

The correct answer is Multi-lateral trade.

Key Points

• The World Trade Organization (WTO) was established on January 1, 1995.
• It is the only global international organization dealing with the rules of trade between nations.
• The goal is to help producers of goods and services, exporters, and importers conduct their business.
• It is an international organization whose primary purpose is to open trade for the benefit of all.
• It promotes multi-lateral trade.
• The WTO has 151 members and 31 observer governments.

Additional Information

• The WTO is based on agreements signed by a majority of the world’s trading nations.
• Its main function is to help producers of goods and services, as well as exporters and importers, protect and manage their businesses.
• As of 2021, the WTO has 164 member countries.
• Liberia and Afghanistan are the most recent members, having joined in July 2016, and 25 “observer” countries and governments.

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• The World Trade Organization (WTO) oversees global trade rules among nations and mediates disputes.
• It has lowered trade barriers and increased trade among member countries.
• It also has also maintained trade barriers when it makes sense to do so in the global context.
• It attempts to mediate between nations in order to benefit the global economy.

Q14. Answer: (c) C→A→E→B→D

Given:

A. Disease B. Treatment C. Infection D. Recovery E. Diagnosis

Explanation:

It is true that, Infection occurs first and then we go to the doctor and seeing that he/she tells us which Disease we have got through that infection. After that, doctor Diagnosis the disease and according Treatment is given to attain Recovery finally.

Thus, the correct sequence is C→A→E→B→D.

Hence, the correct answer is 'option 3'.

Q15. Answer: (d) provides for an elected President

The correct answer is provides for an electedPresident.

Key Points

• The reason for the Constitution of India to be republican is that it provides for an electedPresident
• A democratic polity can be classified into two categories i.e. monarchy and republic.
• In a monarchy, the head of the state (usually king or queen) enjoys a hereditary position, eg. Britain.
• In a republic the head of the state is always elected directly or indirectly for a fixed period, eg, USA.
• Therefore, the term ‘republic’ in our Preamble indicates that India has an elected head called the president.

Additional Information

• The Constitution of India is the supreme law of India.
• The constitution declares India a sovereign, socialist, secular and democratic republic.
• It assures its citizens' justice, equality, and liberty, and endeavors to promote fraternity
• The document lays down the framework that demarcates the fundamental political code, structure, procedures and powers.
• It is the longest written national constitution in the world

Q16. Answer: (d) 25%

GIVEN:

A's salary = 20% less than B's salary

CALCULATION:

Let us assume B's salary is 100

Now, According to the given Question,

A's salary = 20% less than B's salary

Now, A's salary = 100 - 100 × 20/100 = (100 - 20) = 80

As, B's salary is 20 more than A's salary

Percentage = (20/80) × 100 = 25%

Hence, B's salary is 25% more than A's salary.

Shortcut TrickFORMULA USED:

If A is x% less than B, then B is (x/(100 - x) × 100)% more than A.

CALCULATION:

Here, x = 20%

Therefore B is more than A = (20/(100 - 20) × 100)%

= (20 × 100)/80

= 25%

Hence, B's salary is 25% more than A's salary.

Q17. Answer: (c) Two

Explanation :

According to the information given, we have:

1) A should be organized on Saturday.

2) D should be organised before Friday. C should be organised immediately before D.
3) E should be before D and there should be gap of two days between E and D.
So, only case 1 is left
4) No lecture should be organised immediately after E.
5) F should not be organised on last day.
6) One day there will be no lecture. Thus, the final arrangement of lectures will be:
Hence, only 'Two' lectures are organised between F and E.

Q18. Answer: (d) 27

GIVEN:
Numbers are 4, 9,12
FORMULA USED:
if four numbers a, b, c, and d are in proportion
=> a/b × c/d
CALCULATION:
Here, the numbers are 4, 9,12
Let the fourth number be x
=> 4/9 = 12/x
=> 4x = 9 × 12
=> 4x = 108
=> x = 27.
Hence, the fourth proportional is 27.

Q19. Answer: (b) Kilogram

Given: Length : Meter :: Mass : ?
Explanation:
Logic: Measurements : Units
Here, Length is measured in meter(m).
Similarly, Mass is measured using units called kilogram(kg).
Hence, the correct answer is 'Kilogram'.

Q20. Answer: (a) 420, 3

GIVEN:
Numbers are 12, 15 and 21
CONCEPT USED:
Least Common Multiple (L.C.M) = Smallest positive integer that is divisible by both a and b
Highest Common Factor (H.C.F) = largest positive integer that divides each of the integers.
CALCULATION:
L.C.M of 12, 15 and 21
Prime factorization
=> 12 = $2^2 \times 3$
=> 15 = 3 × 5
=> 21 = 3 × 7
L.C.M = Product of greatest power of each prime factor = $2^2 \times 3^1 \times 5^1 \times 7^1 = 420$.
H.C.F = Product of smallest power of each common prime factor = $3^1 = 3$.
Hence, L.C.M and H.C.F are 420 and 3 respectively.

Q21. Answer: (b) 131/4

Given:
A do a work = 20 days
B do a work = 30 days
C do a work = 60 days
A works everyday

B assists A on all odd-numbered
C assists A on all even-numbered
Concept used:
Efficiency = Total work done/ No. of days
Calculation:
As A works 20 days, B works 30 days and C works 60 days
Let the total work unit be L.C.M(20,30,60) is 60 unit
Efficiency of A = 60/20 = 3 unit/day
Efficiency of B = 60/30 = 2 unit/day
Efficiency of C = 60/60 = 1 unit/day
As, A works everyday, B assists A on all odd- day, C assists A on all even day
Work done by A and B on 1st day = 3 + 2 = 5 unit (odd day)
Work done by C and A on 2nd day = 3 + 1 = 4 unit (even day)
Now, 9 unit work is done in 2 days
=> 54 unit work is done = 2 × 6 = 12 days
Remaining work = 60 - 54 = 6 unit
On 13th day, which is odd day 5 unit work will be done
Now, remaining work = 6- 5 = 1 unit
So, on 14th day, which is even day remaining 1 unit will be done out of its 4 unit capacity i.e. 1/4 days
Total work is done 13 + 1/4 = 13 1/4 days.
Hence, work will be completed in 13 1/4 days.

Q22. Answer: (b) communication

The correct answer is communication.
Key Points
• GSAT-12
• GSAT-12 is a communication satellite designed and developed by the Indian Space Research Organisation.
• It is the second satellite to be launched and placed on a GTO using PSLV.
• It was launched onboard PSLV-XL C-17 from the second launch pad of Satish Dhawan Space Centre on July 15, 2011.
• It is considered to be a replacement of the aged satellite INSAT-3B.
• It will provide services like tele-education, telemedicine, disaster management support and satellite internet access.
• The tentative life of a satellite is 8 years.
Additional Information
• PSLV
• The Polar Satellite Launch Vehicle (PSLV) is an expendable medium-lift launch vehicle designed.
• It is operated by the Indian Space Research Organisation (ISRO).
• It was developed to allow India to launch its Indian Remote Sensing (IRS) satellites into sun-synchronous orbits.
• PSLV can also launch small-size satellites into Geostationary Transfer Orbit (GTO).

Q23. Answer: (c) -1

GIVEN:
4/5 + (-3/10) = x + 11/2
CALCULATION:
Here, we have 4/5 + (-3/10) = x + 11/2
=> 5/10 = x + 3/2
=> 1/2 = x + 3/2
=> x = (1/2 - 3/2) = -2/2 = -1.
Hence, the required value is -1.

Q24. Answer: (d) 2 cosecA

GIVEN:
tanA 1+ sec A) + (1 + sec A)/tanA
FORMULA USED:

tanA = sinA /CosA

sec A = 1/Cos A

($\sin^2 A + \cos^2 A = 1$

1/sinA = cosecA

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

Where a = 1st term, b = 2nd term

CALCULATION:

Here, we have tanA/(1+ secA) + (1 + secA)/tanA

=> sinA/(Cos A) over (1 + 1/Cos A) + (1 + 1/Cos A)over sinA/(Cos A)

=> sin Aover Cos A × cos Aover (1+ cos A) + (Cos A + 1) over Cos A × Cos A over sin A

=> sinA/(1 + CosA) + (CosA + 1)/sinA

=> $\sin^2 A + (1 + \text{CosA})^2$over sin A (1 +Cos A) = $\sin^2 A + 1 + \cos^2 A + 2$ Cos A over sinA (1 + Cos A) .(As, $(a+ b)^2 = a^2 + b^2 + 2ab$ and here a = 1 and b = Cos A)

=> 2 + 2 CosA/ sinA (1 + CosA). ($\sin^2 A + \cos^2 A = 1$)

=> 2(1 + CosA)/sinA(1+ CosA) = 2/sinA = 2cosecA.

Hence, the required value is 2cosecA.

Q25. Answer: (d) Stereoscope

The correct answer is Stereoscope.

Key Points

• Stereoscope

• A stereoscope is a device by which two different photographs of the same object can be viewed together.

• It is a device for viewing left-eye and right-eye views of the same scene, as a single three-dimensional image.

• The main advantage of stereoscopic vision is that it provides a three-dimensional image of the world.

• Each eye sees a slightly different image, and the brain combines these two images to create a three-dimensional image.

• There are different types of stereoscopes:

• Wheatstone stereoscope

• Brewster stereoscope

• Holmes stereoscope

• Multiple view stereoscope

Additional Information

• Stroboscope

• The stroboscope is used for visual analysis of objects in periodic motion and for high-speed photography.

• The principle is used for the study of rotating, reciprocating, oscillating or vibrating objects.

• Machine parts and vibrating strings are common examples.

• Using stroboscope speeds can be measured for objects that are visible but not easily accessible.

• Stethoscope

• Stethoscope is a medical instrument used in listening to sounds produced in the heart or lungs.

• The word stethoscope comes from the Greek words stethos, meaning chest, and skopein, meaning to explore.

• There are three general types of stethoscopes available to consumers:

• traditional acoustic

• amplifying

• digitizing

• Spectroscope

• A spectroscope is defined as an instrument that measures the chemical make-up or spectrum of light of an object.

• Spectroscopes also work to help scientists determine the chemical composition of atoms.

• Early astronomers used spectroscopes to study the composition of planets and stars.

Q26. Answer: (d) Central Armed Police Forces

The correct answer is Central Armed Police Forces.

Key Points

• The vice chiefs of the armed forces have been granted additional powers.

• It is to carry out specific procurements to ensure operational preparedness.

• Defence Minister Nirmala Sitharaman has approved the enhancement of powers to the vice chiefs of the three services.

• It is to make certain categories of procurement.

• This delegation will greatly enhance the ability of the armed forces to keep a high degree of serviceability of the in-service equipment.

Additional Information

• The Ministry of Home Affairs has enhanced the financial powers of the Chiefs of central armed police forces like CRPF and BSF.

• It empowers them to spend up to Rs 15 Cr for executing major projects and Rs 1 Cr for minor works including repairing of residential buildings.

• The director generals of CISF, ITBP, SSB, NSG, Assam Rifles, the National Investigation Agency will be able to exercise the financial powers.

• The amount sanctioned for major projects has gone up to Rs 15 Cr from Rs 10 Cr previously.

• The fund for minor projects has also been increased to Rs 1 Cr from Rs 50 lakh previously.

Q27. Answer: (c) 8611

The correct answer is 8611.

Key Points

• Mt Godwin Austin (K-2)

• Mt Godwin Austin is located at 8,611 meters above sea level.

• It is the second-highest mountain on Earth, after Mount Everest.

• It lies in the Karakoram range.

• It is partially in the Gilgit-Baltistan region of Pakistan-administered Kashmir and partially in a China-administered territory of the Kashmir region.

• The other nicknames are K2, the King of Mountains, the Mountaineers' Mountain and the Mountain of Mountains.

Additional InformationList of 10 highest mountain peaks in India

Sr. No.	Mountain Peak	Height(in meters)
1	Mount Everest	8848
2	K2	8611
3	Kangchenjunga	8586
4	Nanda Devi	7816
5	Kamet	7756
6	Saltoro Kangri	7742
7	Saser Kangri	7672
8	Mamostong Kangri	7516
9	Rimo I	7385
10	Hardeol	7151

Q28. Answer: (b) Cochlea

Given: Pupil, Cochlea, Cornea, Iris

Explanation:

All are the parts of the eyes except the word Cochlea.

The cochlea is a twisted tube inside the inner ear, the main organ to hear.

Hence, the odd one is 'option 2'.

Q29. Answer: (b) Satyendra Prasanna Sinha

The correct answer is Satyendra Prasanna Sinha.

Key Points

• Satyendra Prasad Sinha

• Satyendra Prasad Sinha became the first Indian to join the Viceroy’s executive council.

• He was appointed as a law member.
• Satyendra Prasanna Sinha was a prominent lawyer and statesman in British India.
• He was the first Governor of Bihar and Orissa, the first Indian Advocate-General of Bengal.
• He was the first Indian to join the Executive Council of the Viceroy and the first Indian to join the British Ministry.
• He was the first Indian to be appointed in 1905 as Bengal's Advocate-General, a post confirmed in 1908.
• He was knighted on 1 January 1915 in the New Year Honours.

Additional Information
• Indians in the Council
• Satyendra Prasanna Sinha (1909–1914)
• C. Sankaran Nair (1915–1919): Education
• B. N. Sarma (1920–1925): Revenue and Agriculture
• Muhammad Habibullah (1925–1930): Education, Health and Lands
• C. P. Ramaswami Iyer: Law (1931–1932), Commerce (1932), Information (1942)
• Kurma Venkata Reddy Naidu (1934–1937)
• Kunwar Sir Jagdish Prasad: Health, Education and Lands
• Girija Shankar Bajpai (1940): Health, Education

Q30. Answer: (d) Only II is implicit.

Given: A child should be put in school at the age of 5 years or so.

Explanation:

As per the statement, it only tells us that the child can go to school at the age of 5. It means that the child is mentally prepared at this age only and not before that. So, II is implicit.

Since nothing is mentioned about the admission or school policy after 6 years in the given statement. So, I is not implicit.

Thus, only assumption II is implicit.

Hence, 'option 4' is correct.

Q31. Answer: (a) 24 cm²

GIVEN:

Base of a triangle = 6 cm

Height of a triangle = 8 cm

FORMULA USED:

Area of a triangle = 1/2 × b × h

Where, b = base and h = height respectively

CALCULATION:

Here, we have base = 6 cm and height = 8 cm

Area of a triangle = 1/2 × b × h = 1/2 × 6 × 8 = 24 cm²

Hence, Area of a triangle is 24 cm².

Q32. Answer: (d) Harrod-Domar

The correct answer is Harrod-Domar.

Key Points
• Harrod-Domar
• The Harrod–Domar model is a Keynesian model of economic growth.
• It is used in development economics to explain an economy's growth rate in terms of the level of saving and of capital.
• It suggests that there is no natural reason for an economy to have balanced growth.
• The model was developed independently by Roy F. Harrod in 1939, and Evsey Domar in 1946.
• The Harrod–Domar model was the precursor to the exogenous growth model.
• It was the first five-year plan based on the model.

Additional Information
• Gadgil Yojana
• Gadgil Yojana was implemented for the distribution of plan transfer amongst the states.
• Its aim was the development of agriculture as well as to enhance the production of wheat.
• Gadgil yojana's purpose was to solve the problem of the economic crisis.

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• Gadgil's Yojana was India's third five-year plan
• PC Mahalanobis Model
• Mahalanobis Plan was India's second five-year plan.
• It was proposed by Professor Prasanta Chandra Mahalanobis.
• This plan gave priority to investment goods, as they were crucial for the further economic growth of India.
• The plan explores the allocation of investment between the different sectors of the economy.

Q33. Answer: (a) 100%

GIVEN:
Principle becomes 8 times of itself in 3 years
FORMULA USED:
Amount = P × (1 + R/100)^t
Amount = C.I. + P
Where, P = Principal, C.I. = Compound Interest, R = Rate of interest t = time in years
CALCULATION:
Let the principal be P
Then, according to the given question in 3 years Amount becomes 8 times
=> Amount = 8P
=> Amount = P × (1 +R/100)^t
=> 8P = P × (1 + R/100)³
=> 8 = (1+ R/100)³
=> 2³ = (1 + R/100)³
=> 2 = 1 + R/100
=> 1 = R/100
=> R = 100%
Hence, the rate of interest is 100%.

Q34. Answer: (d) 12

GIVEN:
x/ √128 = √162 /x
CALCULATION:
Here, we have xover √128 = √162 over x
=> x²= √128 × √162 = √(64 × 2) × √(81 × 2)
=> x² = 8 × √2 × 9 × √2 = 72 × 2 = 144
=> x = √144 = 12.
Hence, the value of x is 12.

Q35. Answer: (b) Nallamalai

The correct answer is Nallamalai.
Key Points
• Nallamalai is not a biosphere reserve.
• It is a hill of Eastern ghats that stretches over Kurnool, Mahabubnagar, Guntur and Kadapa districts of the state of Andhra Pradesh.
• They run in a nearly north-south alignment, parallel to the Coromandel Coast for close to 430 km between the rivers, Krishna and Pennar.
• Its northern boundaries are marked by the flat Palnadu basin while in the south it merges with the Tirupati hills.
• The hills have extensively weathered and eroded over the years.
• The average elevation today is about 520 m which reaches 1100 m at Bhairani Konda and 1048 m at Gundla Brahmeswara
Additional InformationList of Biosphere Reserve in India

Sr. No.	Name of Biosphere Reserve	Year
1	Nilgiri	1986
2	Nanda Devi	1988

3	Nokrek	1988
4	Great Nicobar	1989
5	Gulf of Mannar	1989
6	Manas	1989

Q36. Answer: (a) Mother

Explanation:

The symbols of the family tree used are:

According to the given information, the family tree formed will be:

Hence, the woman is 'mother' of Rohan.

Q37. Answer: (b) 6/25

Given:

2/5 of girls attending a school function = 3/5 of boys attending a function

Calculation:

Here, we have

2/5 of the number of girls attending function = 3/5 of boys attending a function

=> 2/5 of Girls = 3/5 of boys

=> Ratio of Girls and Boys attending function = 3:2

Let the number of girls be 3x and boys be 2x

Now, the total number of students attending the function = 5x

=> 2/5 of the number of girls attending the function = 2/5 × 3x = 6x/5

Required fraction of 2/5 of girl students of total students attending the function = (6x/5)/ 5x = 6x/5 ×1/5x = 6/25

=> Fraction = 6/25.

Hence, the required fraction is 6/25.

Q38. Answer: (c) 8

GIVEN:

a - b = 5

a² + b ^(2 =) 41

FORMULA USED:

(a - b)² = a² + b² - 2ab

CALCULATION:

Here, we have (a - b) = 5 and a² + b² = 41

Now, on squaring, we get

=> (a - b)² = a² + b² - 2ab

=> 5² = 41 - 2ab

=> 2ab = 41 - 25 = 16

=> a b = 8

Hence, the value of ab is 8.

Q39. Answer: (c) Stromboli

The correct answer is Stromboli.

Key Points

• Stromboli

• Stromboli is an island in the Tyrrhenian Sea, off the north coast of Sicily.

• It contains Mount Stromboli, one of the three active volcanoes in Italy.

• It is one of the eight Aeolian Islands, a volcanic arc north of Sicily.

• The volcano has erupted many times and is constantly active with minor eruptions.

• It gives rise to the island's nickname "Lighthouse of the Mediterranean".

Additional Information

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• Cotopaxi
• Cotopaxi is an active stratovolcano in the Andes Mountains.
• It is located in Latacunga city of Cotopaxi Province.
• It is the second highest summit in Ecuador, reaching a height of 5,897 m.
• Cotopaxi is among the highest active volcanoes in the world.
• Its most recent eruption began on 14 August 2015 and ended on 24 January 2016.
• Mt Etna
• Mount Etna is one of the world's most active volcanoes.
• Mount Etna has been designated a Decade Volcano by the United Nations.
• In June 2013, it was added to the list of UNESCO World Heritage Sites.
• It is one of the tallest active volcanoes in Europe.
• Mt Vesuvius
• Mount Vesuvius is a somma-stratovolcano.
• It is located on the Gulf of Naples in Campania, Italy.
• It is one of several volcanoes which form the Campanian volcanic arc.

Q40. Answer: (b) Chandigarh

Given: Patna, Bengaluru, Itanagar, Chandigarh
Logic: All are the capitals of a single state,
Let's check all the options:
1) Bengaluru: Bengaluru is the capital of Karnataka state.
2) Chandigarh: It is the capital of two states i.e. Haryana and Punjab.
3) Patna: It is the capital of Bihar state.
4) Itanagar: It is the capital of Arunachal Pradesh state.
Thus, all except Chandigarh have one state.
Hence, the odd one out is 'option 2'.

Q41. Answer: (a) x – 5

GIVEN:
Polynomial = x2 - x - 20
CALCULATION:
Here, we have x2 - x - 20 = 0
=> x2 - 5x + 4x - 20 = 0
=> x(x - 5) + 4 (x - 5) = 0
=> (x + 4) (x - 5) = 0
Hence, the factors are (x + 4) and (x - 5)
Since (x + 4) is not the option. So, (x - 5) is the factor of the polynomial
Hence, a factor of the polynomial x2 - x - 20 is (x - 5).

Q42. Answer: (b) Rs. 110

GIVEN:
A bag contains coins of 1 rupee, 50 paise, and 25 paise in the ratio 1 : 2 : 3
CALCULATION:
Let the number of coins of 1 rupee, 50 paise, and 25 paise be x, 2x and 3x
As the number of 50 paise coins = 80
=> 2x = 80
=> x = 40.
Value of x Rs 1 coins = Rs1 × x = Rs. x = Rs 40
Value of 2x 50 paise coins = Rs. 2x × 50/100 = Rs x = Rs 40
Value of 3x 25 paise coins = Rs 3x × 25/100 = Rs 3x/4 = Rs 3 × 40/4 = Rs 30
Total amount = Rs(40 + 40 + 30) = Rs 110.
Hence, there was Rs 110 in the box.
Shortcut Trick

Value (Rs.)	No. of Coins (in terms of x)	Total Value (Rs.)
1 (1 Rupee)	x = 40	1 × x = Rs. 40
0.50 (50 paise)	2x = 80	0.50 × 80 = Rs. 40
0.25 (25 paise)	3x = 120	0.25 × 120 = Rs. 30

Total amount in the box = Rs. (40 + 40 + 30) = Rs. 110

Q43. Answer: (d) Only conclusion II follows.

Explanation:

From the given statements, we get the Venn diagram as:

Thus, combining all the statements, we get,

Next, we will check the conclusions as:

I. All beautiful white things are dogs: Since some dogs are white and all white are beautiful. So, some beautiful white things are dogs but not all. This is not true.

II. Some dogs are beautiful: Since some dogs are white and all white are beautiful. So, some dogs are beautiful. This is true.

Thus, only conclusion II follows.

Hence, the correct answer is 'option 4'.

Q44. Answer: (c) UNIDO : Vienna

The correct answer is UNIDO : Vienna.

Key Points

• UNIDO : Vienna

• The United Nations Industrial Development Organization (UNIDO) is a specialized agency of the United Nations.

• It assists countries in economic and industrial development.

• It is headquartered at the UN Office in Vienna, Austria, with a permanent presence in over 60 countries.

• As of April 2019, UNIDO comprises 170 member states.

• They together set the organization's policies, programs, and principles through the biannual General Conference.

Additional Information

• UNESCO

• The United Nations Educational, Scientific and Cultural Organization is a specialized agency of the United Nations.

• It is aimed at promoting world peace and security through international cooperation in education, arts, sciences and culture.

• It has 193 member states and 12 associate members.

• It is headquartered at the World Heritage Centre in Paris, France.

• ILO

• The International Labour Organization (ILO) is a United Nations agency.

• Its mandate is to advance social and economic justice through setting international labour standards.

• It was founded in October 1919 under the League of Nations.

• It is headquartered in Geneva, Switzerland.

• IMF

• The International Monetary Fund (IMF) is an agency of the United Nations.

• It consists of 190 countries.

• It is headquartered in Washington, DC.

Q45. Answer: (c) 4

Given: Np4@8cQ9%6TkF3=5g4&RwJX

Explanation:

According to the given information, we need to find numbers that are immediately preceded by a letter and immediately followed by a symbol,

Thus, there are only 4 such numbers.

Hence, the correct answer is 'option 3'.

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Q46. Answer: (d) Dholavira

The correct answer is Dholavira.

Key Points

• Dholavira

• Dholavira is one of the two largest Harappan sites in India discovered in Gujarat.

• It is locally known as Kotada which means large fort.

• The excavation found a decline of the civilization in the 5th of 7th stages.

• UNESCO has included Dholavira of Kutch in the list of World Heritage Sites in 2021.

• It is one of the five largest Harappan sites.

• It is also considered as having been the grandest of cities of its time.

Additional Information

• Manda

• Manda is a village and an archaeological site in Jammu in the Indian Union Territory of Jammu and Kashmir.

• It was excavated by the Archaeological Survey of India during 1976-77 by J. P. Joshi.

• The site contains ruins of an ancient Indus Valley civilization.

• It is considered the northmost site of the Indus Valley civilization.

• Balathal

• Balathal is an archaeological site.

• It is located in Vallabhnagar tehsil of Udaipur district of Rajasthan state in western India.

• It is one of the ninety Ahar-Banas culture sites located in the Basins of the Banas river and its tributaries.

• It was excavated from 1994 to 2000.

Q47. Answer: (a) operating system

The correct answer is operating system.

Key Points

• Operating system

• An Operating System (OS) is a n interface between a computer user and computer hardware.

• It is software that performs all the basic tasks like file management, memory management, process management, etc.

• It is software that enables applications to interact with a computer's hardware.

• The software that contains the core components of the operating system is called the kernel.

• Some popular Operating Systems include Linux Operating System, Windows Operating System, MAC, Ubuntu.

Additional Information

• Software

• Software is a set of instructions, data or programs used to operate computers and execute specific tasks.

• It is the opposite of hardware, which describes the physical aspects of a computer.

• Software is a generic term used to refer to applications, scripts and programs that run on a device.

• It can be thought of as the variable part of a computer, while the hardware is the invariable part.

• Modem

• Modem stands for Modulator and Demodulator.

• It is a device that modulates signals to encode digital information.

• A modem transmits data in bits per second (bps).

• It converts the digital signal to Analog and vice versa to communicate between devices.

• It encodes the signal and decodes at the other end and vice versa between the devices.

Q48. Answer: (b) 16 km

GIVEN:

Distance travelled in 9 h = 61 km

Speed on foot = 4 km/h

Speed on bicycle = 9 km/h

FORMULA USED:

Distance = Speed × Time

CALCULATION:

Let the distance traveled on foot be x, then

Distance traveled on a bicycle be (61 - x)

Now, the Total time is taken to cover the whole distance = 9 hours

Distance/ Speed = Time

=> x/4 + (61 - x)/9 = 9

=> (9x + 244 - 4x) /36 = 9

=> (5x + 244) = 36 × 9 = 324

=> 5x = 80

=> x = 16

Hence, the distance traveled on foot is 16 km.

Q49. Answer: (c) Shaunae Miller-Uibo

The correct answer is Shaunae Miller-Uibo.

Key Points

• Shaunae Miller-Uibo

• Shaunae Miller-Uibo is a Bahamian track and field sprinter.

• She competes in the 200 and 400 meters.

• She is a two-time Olympic champion after winning the women's 400 meters at the 2016 Rio Olympics and again at the 2020 Tokyo Olympics.

• She is the 2022 World Champion over 400m having won gold in Eugene.

• She sets a new World 300m record at the 58th Ostrava Golden Spike.

• She broke the world record finishing with a huge lead in 34.41, erasing the prior mark of 35.30 by Mexico's Ana Guevara in 2003.

Additional Information

• Carl Lewis

• Frederick Carlton Lewis is an American former track and field athlete.

• He won nine Olympic gold medals, one Olympic silver medal, and 10 World Championships medals, including eight gold.

• He is one of only six Olympic athletes who won a gold medal in the same individual event in four consecutive Olympic Games.

• Eliud Kipchoge

• Eliud Kipchoge is a Kenyan professional long-distance runner.

• He is the 2016 and 2020 Olympic marathon champion.

• He holds the world record in the marathon with a time of 2:01:39 set at the 2018 Berlin Marathon.

• He is widely regarded as the greatest ever marathon runner and one of the greatest sportsmen in history.

• Usain Bolt

• Usain St. Leo Bolt is a retired Jamaican sprinter.

• He is widely considered to be the greatest sprinter of all time.

• He is the world record holder in the 100 metres, 200 metres, and 4 × 100 metres relay.

Q50. Answer: (a) 35/2

GIVEN:

Straight line : 5x + 7y = 35

FORMULA USED:

Area of a triangle = 1/2 [x1 (y2 - y3) + x2 (y3 - y1) + x3 (y1 - y2)]

Where vertices of a triangle are (x_(1,)y1), (x2, y2) and (x3, y3)

CALCULATION:

Here, straight line is 5x + 7y = 35

Now, a triangle is formed by three vertices

Now, put x = 0 in the equation of a straight line to get the first vertices

=> 5 (0) + 7y = 35

=> 7y = 35

=> y = 5

So, first vertices B(0,5)

Now, put y = 0 in the straight line equation to get the second vertices

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=> 5x + 7 (0) = 35

=> 5x = 35

=> x = 7

So, second vertices A (7,0)

Also, the third vertices = coordinate axes = C (0,0)

Now, x1 = 0, y1 = 5, x2 = 7, y2 = 0, x3 = 0, y3 = 0

Area of a triangle = 1/2 [0 (0 -0) + 7 (0 - 5) + 0 (5 - 0)] = 1/2 [-35] = 35/2 square units.

Hence, the area of a triangle is 35/2 square unit.

Q51. Answer: (c) 84 days

GIVEN:

A and B together complete work = 35 days

A alone complete the same work = 60 days

FORMULA USED:

Efficiency = Total work/No. of days

CALCULATION:

Let us assume total work to be 420 unit

(you can assume any number but for the sake of calculation, it is advised to take L.C.M of the given numbers. Here L.C.M of 35 and 60 is 420)

The efficiency of A and B together = Total work/ No. of days = 420/35 = 12 unit/day

Now, A takes 60 days

Efficiency of A = 420/60 = 7unit/day

=> Efficiency of B = (Efficiency of A and B - Efficiency of A) = (12 - 7) = 5 unit/day

No. of days taken by B to complete the work = 420/ 5 = 84 days.

Hence, B takes 84 days to complete the work.

Q52. Answer: (d) The Rowlatt Act

The correct answer is The Rowlatt Act.

Key Points

• Jallianwala Bagh tragedy

• The Jallianwala Bagh Massacre is also known as the Massacre of Amritsar.

• It was an incident that took place on April 13, 1919.

• British troops fired on a large crowd of unarmed Indians in an open space called the Jallianwala Bagh in Amritsar, in the Punjab region.

• Several hundred people, including children, died, and hundreds more were wounded.

• It was the direct result of the protest against the Rowlatt Act.

Additional Information

• Rowlatt Act

• The Rowlatt Act was passed by the British government to increase their grip on power over the common folk.

• This law was passed in March 1919.

• It was passed by the Imperial Legislative Council which gave them the power to arrest any person without any trial.

• To abolish this act, Gandhi and the other leaders called for a Hartal.

• This Hartal was to show Indians' objection to this rule, called the Rowlatt Satyagraha.

• Major riots started in Punjab after the Rowlatt Act was passed.

• On April 13, 1919, during the festival, a crowd of non-violent protesters gathered.

• General Dyer along with his troops open fired on the unarmed crowd.

Q53. Answer: (b) 7

GIVEN:

Mean = 4

Median = 5

FORMULA USED:

Mode = 3Median - 2Mean

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CALCULATION:

Here, we have mean = 4 and median = 5

=> Mode = 3Median - 2Mean

=> Mode = (3 × 5) - (2 × 4)

=> Mode = (15 - 8) = 7.

Hence, the mode is 7.

Q54. Answer: (b) Dandin

The correct answer is Dandin.

Key Points

• Dandin composed 'The Dashakumaracharita' or 'Tales of Ten Princes'.

• The Dasakumaracarita relates the adventures of ten princes in their pursuit of love and royal power.

• It contains stories of common life.

• It reflects a faithful picture of Indian society during the period couched in the colorful style of Sanskrit prose.

• It was written by Dandin, a renowned Sanskrit author of prose romances and expounder on poetics.

• Dandin was a court poet from Vidarbha.

Additional Information

• Bhartrhari

• Bhartrhari is a Hindu linguistic philosopher.

• Bhartrihari's poetry is aphoristic and comments on the social mores of the time.

• The collected work is known as Śatakatraya "the three śatakas or 'hundreds' ('centuries')".

• Budhasvamin

• Budhasvamin was a Sanskrit poet.

• He is known as the author of the Brhatkathaslokasamgraha.

• His Sanskrit is polished and easy to understand.

• Rahas Bihari Dwivedi

• Rahas Bihari Dwivedi is a Sanskrit scholar and poet from Jabalpur, Madhya Pradesh.

• He was awarded the President's Ceritificate of Honour for Sanskrit in the year 2012.

• He was the formerly the Head of the Department of Sanskrit at Rani Durgavati University, Jabalpur.

Q55. Answer: (c) 1907

The correct answer is 1907.

Key Points

• Surat split

• The Congress split at Surat took place in the year 1907 in the month of December.

• The Surat split was the splitting of the Indian National Congress into two groups:

• the Extremists

• the Moderates

• The Extremists were led by Lokmanya Tilak, Lajpat Rai and Shri Aurobindo.

• The Moderates were led by Gopal Krishna Gokhale, Pherozeshah Mehta and Surendranath Banerjee.

• The Surat session was presided by Dr. rash Behari Ghosh.

• 1885-1905 was known as the period of Moderates because they dominated the Indian National Congress.

Additional Information

• In 1907 the Surat session was held at the bank of the Tapti river in Surat.

• Dr. Rash Behari Ghosh was elected in the session but extremists had an objection to this election.

• Initially the extremists protested against the election but soon they accepted Dr. Rash Behari Ghosh as the president and offered to cooperate.

• But the session was suspended. Congress got split.

• By the time, the next session of Congress was held in Madras in 1908 under Dr. Rash Behari Ghosh.

• It was the extremist camp that was facing the Lathis and arrest by the British Government who was now in its comfortable position as Congress was divided.

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Q56. Answer: (b) 9

GIVEN:

Sum of two numbers = 27

Difference of their squares = 243

FORMULA USED:

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

CALCULATION:

Let the two numbers be x and y respectively

Now, their sum = 27

=> x + y = 27.

Also, a difference between their squares = 243

=> $(x^2 - y^2) = 243$

=> (x +y)(x - y) = 243

=> 27(x - y) = 243

=> x - y = 9.

Hence, the value of x- y is 9.

Q57. Answer: (a) 1

Given: Flower, Rose, Bee

Explanation:

As, we know that a Rose is a flower. But there is no relation between Bee and the other two (i.e.. Rose and flower).

So, the Venn diagram we get is:

Hence, the correct answer is 'option 1'.

Q58. Answer: (a) Thermal power

The correct answer is Thermal power.

Key Points

• Thermal power

• A thermal power station is the power station in which heat energy is converted into electric power.

• Thermal power is the largest source of power in India.

• There are different types of thermal power plants based on the fuel.

• They are used to generate steam such as coal, gas, and diesel, natural gas.

• About 71% of electricity consumed in India is generated by thermal power plants.

Additional Information

• Solar power

• Solar power in India is a fast developing industry as part of the renewable energy in India.

• The country's solar installed capacity was 57.705 GW as of 30 June 2022.

• The Indian Government had an initial target of 20 GW capacity for 2022, which was achieved four years ahead of schedule

• Nuclear power

• Nuclear power is the fifth-largest source of electricity in India.

• As of March 2017, India has 22 nuclear reactors in operation at seven sites, having an installed capacity of 6780 MW.

• It produces a total of 30,292.91 GWh of electricity.

• 11 more reactors are under construction to generate an additional 8,100 MW.

• Hydro power

• India is 5th globally for installed hydroelectric power capacity

• India's hydroelectric power potential is estimated at 148,700 MW at 60% of load factor.

• In the fiscal year 2019–20, the total hydroelectric power generated in India was 156 TWh.

Q59. Answer: (a) Pt Shiv Kumar Sharma

The correct answer is Pt Shiv Kumar Sharma.

Key Points

• Pandit Shivkumar Sharma

• Pandit Shivkumar Sharma was an Indian classical musician and santoor player.

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• He is credited with adapting the santoor for Indian classical music.
• He collaborated with Indian flutist Hariprasad Chaurasia under the collaborative name Shiv–Hari.
• He composed music for many Indian films including Faasle (1985), Chandni (1989), and Lamhe (1991).
• He was awarded the Sangeet Natak Akademi Award in 1986, the Padma Shri in 1991, and the Padma Bhushan in 2001.

Additional Information

• Ustad Vilayat Khan
• Ustad Vilayat Khan was an Indian classical sitar player.
• He is credited with the creation and development of gayaki ang (an attempt to mimic the sound of the human voice) on the sitar.
• He recorded his first 78-RPM disc at the age of 6, and gave his last concert in 2004 at the age of 75.
• Anoushka Shankar
• Anoushka Shankar is a British-Indian-American sitar player.
• She was the youngest and first woman to receive a British House of Commons Shield.
• She has had 7 Grammy Awards nominations and was the first Indian musician to perform live and to serve as a presenter at the ceremony.
• She performs across multiple genres and styles - classical and contemporary, acoustic and electronic.
• Pt Ravi Shankar
• Pt Ravi Shankar was an Indian sitarist and composer.
• He became the world's best-known export of North Indian classical music in the second half of the 20th century.
• He influenced many musicians in India and throughout the world.
• He was awarded India's highest civilian honour, the Bharat Ratna, in 1999.

Q60. Answer: (d) Prime Minister's Office

The correct answer is Prime Minister's Office.

Key Points

• The Department of Atomic Energy (DAE) came into being on August 3, 1954.
• It came under the direct charge of the Prime Minister through a Presidential Order
• The Secretary to the Government of India in the Department of Atomic Energy is ex-officio Chairman of the Atomic Energy Commission.
• DAE has been engaged in the development of
• nuclear power technology
• applications of radiation technologies in the fields of agriculture
• medicine
• industry
• Its vision is to empower India through technology, creation of more wealth and providing better quality of life to its citizen.

Additional InformationOrganizations under DAE

• Power Sector
• Nuclear Power Corporation of India Ltd., Mumbai
• Bharatiya Nabhikiya Vidyut Nigam Ltd., Kalpakkam
• Research and Development Centres
• Bhabha Atomic Research Centre, Mumbai
• Indira Gandhi Centre for Atomic Research, Kalpakkam
• Raja Ramanna Centre for Advanced Technology, Indore
• Industrial Organisations
• Nuclear Fuel Complex, Hyderabad
• Heavy Water Board, Mumbai
• Board of Radiation and Isotope Technology, Mumbai
• Public Sector Units
• Uranium Corporation of India Ltd., Jaduguda
• Electronics Corporation of India Ltd., Hyderabad
• Indian Rare Earths Limited, Mumbai

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Q61. Answer: (c) handicrafts

The correct answer is handicrafts.

Key Points

• Marketing Support and Services Scheme

• Marketing Support and Services Scheme' (in the Eleventh Plan) supports artisans related to handicrafts.

• This scheme was implemented in the five-year plan.

• Its aim was to provide direct marketing outlets to the craft persons for participation in various marketing events for augmenting their sales.

• This scheme has three broad components:

• Domestic Marketing

• International Marketing

• Publicity

Additional Information

• Five-year plans

• Joseph Stalin was the first person to implement the Five-Year Plan in the Soviet Union, in the year 1928.

• India launched a series of Five-Year Plans after independence to build its economy and attain development

• The idea of five-year plans is simple- The Government of India prepares a document with all its income and expenditure for five years.

• There are total 12 five-year plans.

• The budget of the central government and all the state governments is divided into two parts:

• non-plan budget

• plan budget

• The non-plan budget is spent on routine items yearly.

• The planned budget is spent on a five-year basis as per the priorities fixed by the plan.

Q62. Answer: (b) Sonal Mansingh

The correct answer is Sonal Mansingh.

Key Points

• Sonal Mansingh

• Sonal Mansingh is an Indian classical dancer and Guru Bharatanatyam and Odissi dancing style

• She has been nominated by the President of India to become a Member of Parliament, Rajya Sabha.

• She is the youngest recipient of Padma Bhushan in 1992 and Padma Vibhushan in 2003.

• She is the first Indian female Bharatnatyam dancer to be awarded with the Padma Vibhushan.

• In 2018, she was honored with Sangeet Natak Akademi Fellowship.

• She is also known as Akademi Ratna, for her contribution in the field of performing arts.

Additional Information

• Hema Malini

• Hema Malini is an Indian actress, director, producer, and politician.

• She is primarily known for her work in Hindi films.

• She is a trained Bharatanatyam dancer.

• During her career, she received eleven nominations for the Filmfare Award for Best Actress.

• She is among the most successful leading actresses of mainstream Hindi cinema.

• Yamini Krishnamurthy

• Mungara Yamini Krishnamurthy is an Indian dancer of Bharatanatyam and Kuchipudi styles of dancing.

• She has the honor of being Asthana Nartaki of the Tirumala Tirupati Devasthanam.

• She was also known as "torch bearer" of the Kuchipudi form of dance.

• She imparts dance lessons to younger dancers at her institute, Yamini School of Dance, Hauz Khas, New Delhi.

• Vyjayanthimala Bali

• Vyjayanthimala is a former Indian actress, dancer and parliamentarian.

• She is regarded as the "First Female Superstar" of Hindi cinema.

• She is the recipient of several accolades, including two BFJA Awards and five Filmfare Awards.

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Q63. Answer: (b) Reader

Given: Writer, Reader, Publisher, Printer

Explanation:

All involved in the preparation of a journal, newspaper, or magazine except Reader.

Hence, the odd one out is 'option 2'.

Q64. Answer: (d) lies outside of it

GIVEN:

Equation of the circle $x^2 + y^2 - 3x - 4y + 1 = 0$

CONCEPT USED:

If S(x, y) : $x^2 + y^2 + 2gx + 2fy + c = 0$ is a circle and

P(x_(1 ,) y1) is a point then the position of the point P

with respect to the circle can be :

P lies on the circle if S (x1, y1) = 0

P lies inside the circle if S (x1, y1) < 0

P lies outside the circle if S (x1, y1) > 0

CALCULATION:

Here, equation of the circle is S : $x^2 + y^2 - 3x - 4y + 1 = 0$ and the point P (3, 4)

Here, x1 = 3, y1= 4

First let's find out S (x1, y1)

=> $S(x1, y1) = x1^2 + y1^2 - 3x1 - 4y1 + 1 = 0$

=> $S(3, 4) = 3^2 + 4^2 - 3(3) - 4(4) + 1 = 9 + 16 - 9 - 16 + 1 = 1 > 0$

As, we know that if S (x1, y1) >0 for point P (x1, y1) then the point P lies outside the circle S.

Hence, the position of the point is it lies outside the circle with respect to the circle.

Q65. Answer: (d) 60 cm

GIVEN:

Length of the rectangle = 15 cm

Area of the rectangle = 150 cm^2.

FORMULA USED:

Area of rectangle = Length × Breadth

Perimeter of rectangle = 2(length + breadth)

CALCULATION:

Here, Length = 15 cm and Area = 150 cm^2

=> Area = Length × Breadth

=> 150 = 15 × Breadth

=> Breadth = 10 cm

Now, According to the given question, the Area becomes 11/3 times the original area by increasing its length only

So, breadth = 10 cm

=> New area = 4/3 × 150 = 200 cm^2 and breadth = 10 cm

=> New length = Area/Breadth = 200/10 = 20 cm.

New Perimeter = 2(Length + Breadth) = 2(20 + 10) = 2 × 30 = 60 cm.

Hence, the new perimeter is 60 cm.

Q66. Answer: (d) 0.21

GIVEN:

5/100 + 2/5 - 6/25

CALCULATION:

Here, we have 5/100 + 2/5 - 6/25

=> 0.05 + 0.4 - 0.24 = 0.21

Hence, the required value is 0.21.

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Q67. Answer: (b) Excise duty on liquor

The correct answer is Excise duty on liquor.

Key Points

• Excise duty is a form of indirect tax that is levied by the Central Government of India for the production, sale, or license of certain goods.

• Excise duty charges are also collected by state governments for alcohol and narcotics.

• It has been replaced by the Goods and Services Tax(GST) from 1 July 2017.

• The customer does not pay excise duty directly to the authorities.

• It is added to the cost of the product by the producer or merchant and then passed on to the consumer by way of increased prices.

• The Excise Duty Act, 1944 governs the regulations related to excise duty in India.

• The tax is administered by the Central Board of Excise and Customs.

Additional Information

• Capital gains tax

• Capital gains are the profit you make from selling or trading a "capital asset."

• A capital gains tax is a levy on the profit that an investor makes from the sale of an investment such as stock shares.

• Customs tax

• Customs duty refers to the tax imposed on goods when they are transported across international borders.

• In simple terms, it is the tax that is levied on import and export of goods.

• Corporation tax

• Corporation tax is a direct tax imposed on the net income or profit that enterprises make from their businesses.

• Companies, both public and privately registered in India under the Companies Act 1956, are liable to pay corporation tax.

Q68. Answer: (b) Sisir Kumar Ghosh

The correct answer is Sisir Kumar Ghosh.

Key Points

• Sisir Kumar Ghosh

• Sisir Kumar Ghosh was a noted Indian journalist.

• He was the founder of the Amrita Bazar Patrika, a noted Bengali language newspaper in 1868.

• He started the India League in 1875 with the object of stimulating the sense of nationalism amongst the people.

• Indian League was associated with nationalist leaders such as Ananda Mohan Bose, Durgamohan Das, Nabagopal Mitra.

• He published Lord Gauranga or Salvation for All in 1897.

• He was among the first students to pass Calcutta University's first entrance examination in 1857.

Additional Information

• Anand Mohan Bose

• Ananda Mohan Bose was an Indian politician, academician, social reformer, and lawyer during the British Raj.

• He co-founded the Indian National Association, one of the earliest Indian political organizations.

• In 1874, he became the first Indian Wrangler of Cambridge University.

• He was also a prominent religious leader of Brahmoism and with Sivanath Sastri a leading light of Adi Dharm.

• Dwarka Nath Tagore

• Dwarkanath Tagore was one of the first Indian industrialists to form an enterprise with British partners.

• He was the son of Ramlochon Tagore, the founder of the Jorasanko branch of the Tagore family.

• He was also the grandfather of Rabindranath Tagore.

• Devendra Nath Tagore

• Debendranath Tagore was an Indian Hindu philosopher and religious reformer.

• He joined Brahmo samaj in 1842.

• He was the founder in 1848 of the Brahmo religion.

Q69. Answer: (a) Humboldt current

The correct answer is Humboldt current.

Key Points

• Humboldt current

• The Humboldt Current is also called the Peru Current.

• It is a cold, low-salinity ocean current that flows north along the western coast of South America.
• It is an eastern boundary current flowing in the direction of the equator, and extends 500–1,000 km offshore.
• The Humboldt Current is named after the German naturalist Alexander von Humboldt.
• The Humboldt Current is a highly productive ecosystem.

Additional Information

• Kurushio current
• The Kuroshio Current is one of the major ocean warm water currents.
• It begins east of the Philippines then flows in a northeastward direction past Taiwan and Japan.
• It forms the western side of the clockwise North Pacific Ocean gyre.
• The surface waters of the Kuroshio Current are warm and salty.
• Alaskan current
• The Alaska Current is a southwestern shallow warm-water current.
• It is alongside the west coast of the North American continent.
• The Alaska Current produces large clockwise eddies at two sites:
• west of the Haida Gwaii
• west of Sitka, Alaska
• Tsushima current
• Tsushima current is a warm water current.
• Tsushima Current flows north, mixing with the Kuroshio Current, waters of the East China Sea from coastal China.
• Tsushima current is a surface current with warm, high-salinity, low nutrient water.

Q70. Answer: (b) Wood Pigeon

The correct answer is Wood Pegion.

Key Points

• Wood Pigeon
• The Wood Pigeon is a large species in the dove and pigeon family.
• It is the official bird of Andaman Nicobar island
• It is native to the western Palearctic.
• It belongs to the genus Columba.
• It has historically been known as the ring dove and is locally known in southeast England as the "culver".

Additional Information

• Sooty Tern
• The Sooty Tern is the state bird of Lakshadweep.
• Locally known as 'Karifettu'.
• These birds are common in Tropical oceans.
• Lakshadweep provides just the ideal condition for the Sooty terns that are very commonly found in the island.
• Great Hornbill
• Great Hornbill is the state bird of both Arunachal Pradesh and Kerala.
• It is one of the larger members of the hornbill family.
• It occurs in the Indian subcontinent and Southeast Asia.
• It has been listed as Vulnerable on the IUCN Red List since 2018.
• Indian Roller
• The Indian roller is the state bird of Odisha, Telangana, and Karnataka.
• It occurs widely from West Asia to the Indian subcontinent.
• It is listed as a species of least concern on the IUCN Red List.

Q71. Answer: (a) Only conclusion I follows.

Explanation:

From the given statements, we get the Venn diagram as:

Next, we will check the conclusions as:

I. No kite is a bat: Since no bird is a bat and all kites are birds. So no kite is a bat. This is true.

II. Some kites are bats: Since all kites are birds and so some birds are kites. But no bird is a bat and so no kite is bat. This is not

true.

Hence, the correct answer is 'option 1'.

Q72. Answer: (c) Aveek Sarkar

The correct answer is Aveek Sarkar.

Key Points

• Aveek Sarkar

• Aveek Sarkar is an Indian newspaper promoter and proprietor.

• He is the present Chairman of Press Trust of India and Vice Chairman and Editor Emeritus of ABP Group.

• Previously he was editor-in-chief of Anandabazar Patrika and The Telegraph.

• He was also the Chief Editor of ABP Group of publications.

• He was ranked as one of the most powerful Indians in 2009 by The Indian Express.

• He was elected as the chairperson of the Press Trust of India (PTI) in September 2020.

Additional Information

• The Press Trust of India Ltd., commonly known as PTI, is the largest news agency in India.

• It is headquartered in New Delhi and is a nonprofit cooperative among more than 500 Indian newspapers.

• It has over 500 full-time employees as of 1 January 2022, including about 400 journalists.

• It also has nearly 400 part-time correspondents in most of the district headquarters of the country.

• PTI also has correspondents in major capitals and important business centres around the world.

• It took over the operations of the Associated Press of India from Reuters in 1948–49.

• It provides news coverage and information of the region in both English and Hindi.

Q73. Answer: (d) 4

Calculation:

Let the no. of sister = x and no. of brothers = y

According to the question, we have:

1) Boy told - I have sisters twice the number of brothers

=> x = 2 (y - 1) -------- (i)

2) Sister told - I have the same number of brothers and sister

=> y = (x - 1) ----------(ii)

Putting the value of y from equation (ii) in (i), we will get,

=> x = 2(x - 1 - 1)

=> x = 2x - 2 - 2

=> x = 2x - 4

Using transpose method, and moving the terms 'x' and '4', we will get,

=> 4 = 2x - x

=> 4 = x

=> x = 4

Hence, there are '4' girls (sister) in the family.

Q74. Answer: (d) UNICEF and UNHCR

The correct answer is UNICEF and UNHCR.

Key Points

• The UNICEF and the UNHCR have launched “Blue Dot hubs” to boost protection for children and families on the move across Europe.

• The hubs will be located in selected strategic sites like border entry/exit points, registration sites, some strategic urban centres, etc.

• The services include:

• restoring family links

• family reunification

• child-friendly space

• dedicated mother and baby/toddler spaces

• psychosocial first aid

• legal counselling

Additional Information

• Twenty Child and Family Support Hubs, to be known as “Blue Dots".

• The hubs aim to support vulnerable families on the move, especially the many unaccompanied or separated children at risk of sickness.

• The “Blue Dot” hubs come at a time when women and children account for two-thirds of those crossing to Europe.

• The hubs will be located in selected strategic sites:

• border entry/exit points

• registration sites

• some strategic urban centres

• mobile/outreach teams

Q75. Answer: (d) Uber

The correct answer is Uber.

Key Points

• Mahindra had announced its collaboration with Uber.

• This collaboration is to explore the deployment of electric vehicles (EVs) on its platform in several cities.

• It announced the deployment of 50 of its Electric Vehicles (EVs) to Uber.

• Mahindra worked with public and private players who had initially set up over 30 common-use charging points across multiple locations here.

• The collaboration with Uber is aimed at accelerating the large-scale adoption of electric vehicles on shared mobility platforms.

• Through this tie-up, driver partners on the Uber app can avail themselves of a package that would include Mahindra electric vehicles.

• The package would be priced competitively with attractive financing and insurance premiums from Mahindra and its associates.

Additional Information

• Mahindra & Mahindra Limited (M&M) is an Indian multinational automotive manufacturing corporation headquartered in Mumbai.

• It was established in 1945 as Mahindra & Muhammad and later renamed as Mahindra & Mahindra.

• M&M is one of the largest vehicle manufacturers by production in India.

• It was ranked 17th on a list of top companies in India by Fortune India 500 in 2018.

Q76. Answer: (a) 1/4 of a pizza

GIVEN:

John ate 2/4 of a pizza.

Sarah, Tom, and Joane ate 3/4 of a pizza each

CALCULATION:

Here, we have 3 pizzas of the same size

Let each pizza be x

So, total pizza = 3x

As John ate 2/4 of a pizza

=> John ate = 1/2 × x = x/2

Now, Sarah, Tom, and Joane ate 3/4 of a pizza each

=> Sarah, Tom and Joane ate = 3x/4 + 3x/4 + 3x/4

Now, Total pizza ate by all of them = (x/2 + 3 × 3x/4) = 11x/4

Now, pizza left = (3x - 11x/4) = x/4 = 1/4 of a pizza

Hence, 1/4 of a pizza was left.

Q77. Answer: (b) 689

GIVEN:

Cost Price = Rs 650

Gain% = 6%

FORMULA USED:

Gain = S.P. - C.P.

Gain% = (Gain/C.P.) × 100

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Where, S.P. = Selling Price, C.P. = Cost Price

CALCULATION:

Here, we have C.P. = Rs 650 and Gain% = 6

Gain = S.P. - C.P. = S.P. - 650

Gain% = (Gain/C.P.) × 100

=> 6 = [(S.P. - 650)/650] × 100

=> (6 × 650)/100 = S.P. - 650

=> 39 = S.P. - 650

=> S.P. = (39 + 650) = 689.

Hence, the Selling Price is Rs 689.

Q78. Answer: (d) INS Godavari

The correct answer is INS Godavari.

Key Points

• INS Godavari

• INS Godavari (F20) was the lead ship of its class of guided-missile frigates of the Indian Navy.

• It was Built by Mazagon Dock Limited in Mumbai.

• It was the first Indian warship to be indigenously designed and built.

• It was commissioned on 10 December 1983.

• It was decommissioned on 23 December 2015 after a 32-year career.

Additional Information

• INS Shivalik

• INS Shivalik (F47) is the lead ship of its class of stealth multi-role frigates built for the Indian Navy.

• It is the first stealth warship built by India.

• It was built at the Mazagon Dock Limited (MDL) located in Mumbai.

• It underwent sea trials from thereon before being commissioned on 29 April 2010.

• INS Arihant

• INS Arihant is a designated S2 Strategic Strike Nuclear Submarine.

• It is the lead ship of India's Arihant class of nuclear-powered ballistic missile submarines.

• The 6,000-tonne vessel was built under the Advanced Technology Vessel (ATV) project at the Ship Building Centre.

• Arihant was launched on 26 July 2009,

• INS Talwar

• INS Talwar (F40) is the lead ship of the Talwar-class frigates of the Indian Navy.

• Its name means "Sword" in Hindi.

• It was built in Russia, and commissioned into the Indian Navy on 18 June 2003.

Q79. Answer: (c) first high level programming language.

The correct answer is first high level programming language.

Key Points

• FORTRAN

• The full form of FORTRAN is the FORmula TRANslation.

• FORTRAN, created by John Backus in 1957, is the very first high-level programming language.

• It is a programming language designed for numeric computation and scientific computing.

• Fortran is the oldest programming language and is still widely used.

• Its applications are found in the:

• scientific fields

• particularly numerical weather prediction

• computational fluid dynamics

• computational physics.

• Fortran is also quite popular in high-performance computing.

• It is used in program benchmarking and ranking the world's fastest supercomputers.

Additional InformationTop 10 Most Popular Programming Languages and their Inventors

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Sr. No.	Programming language	Inventor
1	JAVA	James Gosling
2	C	Dennis Ritchie
3	C++	Bjarne Stroustrup
4	Python	Guido van Rossum
5	PHP	Rasmus Lerdorf
6	Perl	Larry Wall
7	Javascript	Brendan Eich
8	Ruby	Yukihiro Matsumoto
9	Lisp	John McCarthy
10	Pascal	Niklaus Wirth

Q80. Answer: (b) 6.5

GIVEN:

Number is 42.25

CALCULATION:

Here, we have 42.25

Now, let x = 42.25

So, the square root of x

=> √x = √42.25 = √4225 over √100 = 65/10 = 6.5

Hence, the square root of 42.25 is 6.5.

Q81. Answer: (d) 2592

GIVEN:

X = 3^2× 2

Y = 2^3 × 3

Z = 3^2 × 2^2

CALCULATION:

Here, we have

X = 32 × 2, Y = 23 × 3, Z = 3^2 × 2^2

=> XY = 3^2 × 2 × 2^3 × 3 = 3^3 × 2^4

=> YZ = 2^3 × 3 × 3^2 × 2^2 = 3^3 × 2^5

=> ZX = 3^2 × 2^2 × 3^2 × 2 = 3^4 × 2^3

=> L.C.M = 3^4 × 2^5 = 81 × 32 = 2592

Therefore The correct answer is option (4).

Q82. Answer: (b) Rs. 7,920

GIVEN:

Marked Price = Rs 9,000

discount% = 20%

increased% = 10%

FORMULA USED:

S.P. = (1 - P1/100) × (1 + P2) × M.P.

Where, S.P. = Selling Price, M.P. = Marked Price P1 and P2 are discount and increased percentages respectively

CALCULATION:

Here, Marked Price = Rs 9,000, P1 = 20%, P2 = 10%

=> S.P. = (1 - 20/100) × (1 + 10/100) × 9000

=> S.P. = 4/5 × 11/10 × 9000 = Rs 7,920.

Hence, the selling price of an article is Rs 7,920.

Q83. Answer: (a) (11/3,17/3)

GIVEN:

The points are (2,4) and (7, 9)

FORMULA USED:

Section formula: If a point (x, y) divides the line joining the points (x1, y1) and (x2, y2) in the ratio m :n,

then (x, y) = (m x2 + n x1) / (m + n), (m y2 + n y1) / (m + n)

CALCULATION:

Here, we have m : n = 1 : 2, x1 = 2, y1 = 4, x2 = 7, y2 = 9

=> Co-ordinates (x, y)

x = (1 × 7 + 2 × 2) / (1 + 2) = (7 + 4) /3 = 11/3

y = (1 × 9 + 2 × 4) / (1 + 2) = (9 + 8) /3 = 17/3

Hence, the coordinates (x, y) are (11/3,17/3).

Q84. Answer: (b) Rabindranath Tagore

The correct answer is Rabindranath Tagore.

Key Points

• In April 1893, Gandhi sailed for South Africa, a young and inexperienced barrister in search of fortune.
• In January 1915 he finally returned to India with no possessions and with only one ambition - to serve his people.
• Rabindranath Tagore described Mahatma Gandhi as "the great soul in beggar's garb".
• At the end of his year's wanderings, Gandhi settled down on the bank of the river Sabarmati, on the outskirts of Ahmedabad.
• He founded an ashram in May 1915.
• He called it the Satyagraha Ashram.

Additional Information

• Rabindranath Tagore was the youngest son of Debendranath Tagore.
• He was the leader of the Brahmo Samaj.
• He was educated at home; and although at seventeen he was sent to England for formal schooling.
• He was knighted by the ruling British Government in 1915.
• Within a few years he resigned the honor as a protest against British policies in India.

Q85. Answer: (a) CBVFLJX

Explanation:

The alphabets and their positions are:

The logic for the word TEACHER is written as TFCFLJX

Similarly, the word CATCHER is written as:

Thus, it is written as CBVFLJX.

Hence, the correct answer is 'option 1'.

Q86. Answer: (c) Sale of E is double the sale of B.

Concept used:

Let total brands = 100

Calculation:

Considering option (1) we have

Sales of A is greater than the sale of C and D taken together

Sales of A = 37.5 % × 100 = 37.5

Sales of C and D = (12.5 % + 12.5%) × 100 = 25%× 100 = 25

=> Sales of A is greater than Sales of C and D together. So, it is correct.

Considering option (2), we have

Sales of C is less than 50% of the sale of A

Sales of C = 12.5% × 100 = 12.5

Sales of A = 37.5% × 100 = 37.5

=> 50% of sales A = 37.5/2 = 18.75

=> Since, sales of C = 12.5 which is less than 50% of sales of A.

Considering option (3), we have

Sale of E is double the sale of B
Sale of E = 12.5% of 100 = 12.5
Sale of B = 25% of B = 25% of 100 = 25
So, Sale of E is half of Sale of B. Hence, it is not correct
considering option (4), we have
Sale of E is 50% of the sale of B
Sale of E = 12.5 % of 100 = 12.5
Sale of B = 25% of 100 = 25 <=> 50% of Sale of B = 25/2 = 12.5
So, the sale of 50% of B = Sale of E = 12.5 Hence, it is correct.
Hence, the sale of E is not the double of sale B. So, the correct option is (3).

Q87. Answer: (c) 100%

GIVEN:
Percentage of sales of 5 brands in the current year
CONCEPT USED:
Let total sale of brands = 100
CALCULATION:
Sales of A = 37.5% of 100 = 37.5
Sales of C = 12.5% of 100 = 12.5
Sales of D = 12.5% of 100 = 12.5
Sales of E = 12.5% of 100 = 12.5
Combined sales of C + D + E = (12.5 + 12.5 + 12.5) = 37.5.
=> Percentage = 37.5/37.5 × 100 = 100%.
Hence, the required percentage is 100%.

Q88. Answer: (b) 2

GIVEN:
Average score of boys and girls during the year 2014 - 2018
CONCEPT USED:
Average = Sum of values/No. of values.
CALCULATION:
In the year 2014
score of boys = 65
score of girls = 60
In the year 2015
score of boys = 80
score of girls = 65
In the year 2016
score of boys = 80
score of girls = 75
In the year 2017
score of boys = 65
score of girls = 80
In the year 2018
score of boys = 60
score of girls = 80
=> Sum of boys in all the years = (65 + 80 + 80 + 65 + 60) = 350
=> Average = 350/5 = 70.
=> Sum of girls in all 5 years = (60 + 65 + 75 + 80 + 80) = 360
=> Average = 360/5 = 72.
=> Absolute difference = (72 - 70) = 2.
The absolute difference is 2.

Q89. Answer: (d) 1 : 4

GIVEN :

Percentage scores of boys and girls in the year 2014 -2018

CALCULATION:

In the year 2014

Percentage score of boys = 65

Percentage score of girls = 60

=> Absolute difference = (65 - 60) = 5.

In the year 2018

Percentage score of boys = 60

Percentage score of girls = 80

=> Absolute difference = (80 - 60) = 20

=> Required ratio = 5 : 20 = 1 : 4.

Therefore Required absolute difference in percentage score is 1 : 4.

Q90. Answer: (b) N

Explanation:

The alphabets and their positions are:

The logic here is:

Thus, the missing term is 'N'.

Hence, the correct answer is 'option 2'.

Q91. Answer: (a) TKWVWFV

Explanation:

The alphabets and their positions are:

The logic here is:

For the word TELEVISION is written as UJNIYLWKTO

Similarly, for the word SHUTTER be written as:

Thus, it is written as 'TKWVWFV'.

Hence, the correct answer is 'option 1'.

Q92. Answer: (b) Doctor

Explanation:

The symbols of the family tree is:

According to the given information, the family tree will be:

So, doctor or businessman may be the husband of teacher, because there are only three married couples. So, we have the artist married to politician and the accountant married to an engineer. Since the businessman is not there in the option.

Thus, the teacher is married to a doctor.

Hence, the 'doctor' is the husband of the teacher.

Q93. Answer: (a) Both conclusions I and II follow.

Given: The government has recently announced many concessions and has offered attractive schemes for foreign tourists.

Explanation:

According to the given statement, we have, the government has allowed many concessions and offers for foreign tourists. So, conclusion I follows. Also, because of the offers many more tourists will visit the country. So, conclusion II follows.

Thus, 'both conclusions I and II' follows.

Hence, the correct answer is 'option 1'.

Q94. Answer: (d) 7 ÷ 2 × 6 + 3 – 4 = 13

Given:

Sign	Replace
•	÷
•	×

×	•
÷	•

Explanation:

BODMAS Rule:

First we will check all the options are:

1) 7 × 2 ÷ 6 + 3 – 4 = 13

Interchanging the signs, we will get,

=> 7 + 2 - 6 ÷ 3 × 4 = 13

Applying the BODMAS rule, we will get,

=> 7 + 2 - 2 × 4 = 13

=> 7 + 2 - 8 = 13

=> 1 = 13, this is not possible

2) 7 × 2 + 6 ÷ 3 – 4 = 13

Interchanging the signs, we will get,

=> 7 + 2 ÷ 6 - 3 × 4 = 13

Applying the BODMAS rule, we will get,

=> 7 + 0.33 - 3 × 4 = 13

=> 7 + 0.33 - 12 = 13

=> -4.67 = 13, this is not possible

3) 7 ÷ 2 + 6 × 3 – 4 = 13

Interchanging the signs, we will get,

=> 7 - 2 ÷ 6 + 3 × 4 = 13

Applying the BODMAS rule, we will get,

=> 7 - 0.33 + 3 × 4 = 13

=> 7 - 0.33 + 12 = 13

=> 18.67 = 13, this is not possible

4) 7 ÷ 2 × 6 + 3 – 4 = 13

Interchanging the signs, we will get,

=> 7 - 2 + 6 ÷ 3 × 4 = 13

Applying the BODMAS rule, we will get,

=> 7 - 2 + 2 × 4 = 13

=> 7 - 2 + 8 = 13

=> 13 = 13, this is true.

Hence, the correct answer is 'option 4'.

Q95. Answer: (b) Three

Given: Five persons Abi, Raj, Brij, Ritz and Das are sitting on a ladder one above the other (not necessarily in the same order).

Explanation:

According to the given statements,

1) Raj sits immediately above Ritz.

2) Ritz is immediately above Abi.

So, case-4 is eliminated.

3) Only two persons sit between Ritz and Das.

So, case 2 is eliminated.

Thus, the final sitting arrangement on a ladder is:

So, we have two cases of sitting.

Next, if Das sits below Abi, then the sitting arrangement will be:

Thus, there are 'three' persons who will sit between Das and Raj.

Hence, the correct answer is 'option 2'.

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Q96. Answer: (b) 1

Explanation:

The logic here is:

Thus, the next number in the series is '1'.

Hence, the correct answer is 'option 2'.

Q97. Answer: (b) T

Given: Np4@8cQ9%6TkF3=5g4&RwJX

Explanation:

First we have to count 18th character from the right end

Next, we have 5th to the right, as:

Thus, character 'T' is 5th to the right of the 18th character from the right end.

Hence, the correct answer is 'option 2'.

Q98. Answer: (c) 26

Explanation:

According to the given statement, we will get,

Thus, the total number of students in a row = 6 + 19 + 1 = 26

OR

7 + 20 - 1 = 26

Hence, the correct answer is 'option 3'

Q99. Answer: (b) IIRCFEL

Explanation:

The alphabets and their positions are:

The logic here is:

For the word, CARPENTER is written as AAPPCNREP

Similarly, the word KITCHEN be written as:

Thus, it is written as 'IIRCFEL'

Hence, the correct answer is 'option 2'.

Q100. Answer: (c) 7 + 3 × 4 ÷ 9 – 5 = 14

Explanation:

BODMAS Rule:

Interchanging the signs and numbers we get,

First we will check options as:

1) 7 + 3 – 4 ÷ 9 × 5 = 40

Applying the changes we will get,

=> 9 ÷ 3 - 4 + 7 × 5 = 40

Using the BODMAS rule, we will get,

=> 9 ÷ 3 - 4 + 7 × 5 = 40

=> 3 - 4 + 7 × 5 = 40

=> 3 - 4 + 35 = 40

=> 34 = 40, is not possible

2) 7 × 3 + 3 ÷ 9 - 5 = 12

Applying the changes we will get,

=> 9 × 3 ÷ 3 + 7 - 5 = 12

Using the BODMAS rule, we will get,

=> 9 × 3 ÷ 3 + 7 - 5 = 12

=> 9 × 1 + 7 - 5 = 12

=> 9 + 7 - 5 = 12

=> 11 = 12, is not possible

3) 7 + 3 × 4 ÷ 9 - 5 = 14

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Applying the changes we will get,
=> 9 ÷ 3 × 4 + 7 - 5 = 14
Using the BODMAS rule, we will get,
=> 9 ÷ 3 × 4 + 7 - 5 = 14
=> 3 × 4 + 7 - 5 = 14
=> 12 + 7 - 5 = 14
=> 14 = 14, is possible
4) 7- 3 × 4 ÷ 9 + 3 = 2
Applying the changes we will get,
=> 9 - 3 × 4 + 7 ÷ 3 = 2
Using the BODMAS rule, we will get,
=> 9 - 3 × 4 + 7 ÷ 3 = 2
=> 9 - 3 × 4 + 2.33 = 2
=> 9 - 12 + 2.33 = 2
=> -0.67 = 2, is not possible
Hence, the correct answer is 'option 3'.

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