RRB NTPC CBT-I Official Paper (Held On: 2 Feb 2021 Shift 2) (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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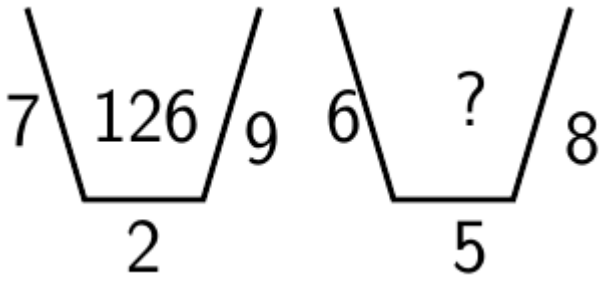
Q1. ESS is a Computer based system that allows users to transform enterprise data. ESS stands for:

(a) Executive Service System
(b) Executive Senior System
(c) Executive Support System
(d) Executive Series system

Q2. As of January 2020, which of the following is NOT a Maharatna company?

(a) Hindustan Newsprint Limited (HNL)
(b) Indian Oil Corporation Limited (IOCL)
(c) Gas Authority of India Limited (GAIL)
(d) Bharat Heavy Electricals Limited (BHEL)

Q3. Study the given pattern carefully and select the number from among the given options that can replace the question mark (?).



(a) 320
(b) 126
(c) 177
(d) 240

Q4. Where did the Prime Minister inaugurate the Pandit Deendayal Upadhyaya Institute of Archaeology in 2019?

(a) Varanasi
(b) Mumbai
(c) Greater Noida
(d) Mughalsarai

Q5. 18 skilled workers can complete a task in 12 days while 24 semi-skilled workers need 15 days to complete the same task. 12 skilled workers started the task but 3 of them left after a few days. How many semi-skilled workers should replace the 3 skilled ones who left so that the task can be completed in stipulated time?

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

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Q6. The Sepoy Mutiny or First war of Independence against British rule took place in the year:

(a) 1857
(b) 1757
(c) 1716
(d) 1836

Q7. In a circle, two chords of lengths x and y subtend the angles of 60° and 90° at the center respectively. Which of the following is correct in this scenario?

(a) y = 2x
(b) x = 2y
(c) y = √2 x
(d) y = √2x

Q8. National Skill Development Mission was launched by the Prime Minister of India in:

(a) 2013
(b) 2015
(c) 2014
(d) 2016

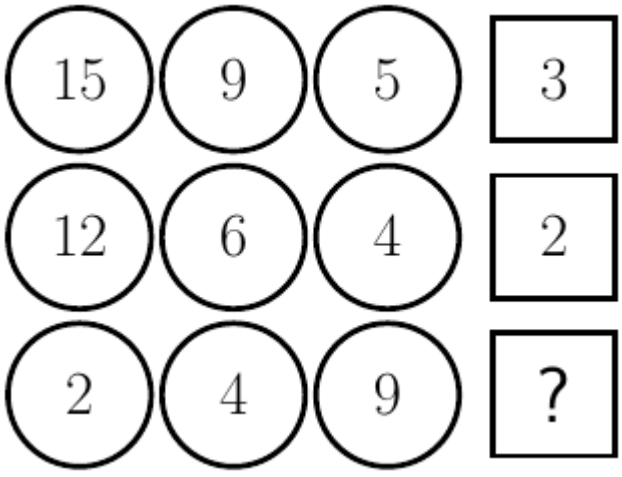
Q9. Amir Khusrau was born at _____ in Uttar Pradesh.:

(a) Patiyali
(b) Agra
(c) Ghaziabad
(d) Kanpur

Q10. The LCM of x and y is 2079 and their HCF is 27. If x = 189, what will be the value of y?

(a) 267
(b) 167
(c) 197
(d) 297

Q11. Study the given pattern carefully and select the number from among the given options that can replace the question mark (?).



(a) 8
(b) 18
(c) 10
(d) 6

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Q12. X can work as fast as Y and Z together. X and Y together can finish the same task 3 times as fast as Z. If all three working together can finish the task in 15 days, how many days, will Z take to finish the task?

(a) 80
(b) 90
(c) 70
(d) 60

Q13. In a given population, 20% of the population is affected with asthma out of which 90% of asthma patients used to work in flour mills. If 30% of the total population was working in flour mills, then what will be the percentage of the people working in flour mills who are suffering from asthma?

(a) 40%
(b) 50%
(c) 30%
(d) 60%

Q14. The sum of cost prices of two bikes is Rs. 1,00,000. One bike was sold at a profit of 20% and the second one was sold at a loss of 20%. If the selling prices are same, what is the cost price of the first bike sold?

(a) Rs. 50,000
(b) Rs. 35,000
(c) Rs. 40,000
(d) Rs. 60,000

Q15. If $\cos\theta + \sec\theta = \sqrt{3}$, then the value of $\cos^3\theta + \sec^3\theta$ is:

(a) $1/(\sqrt{3})$
(b) $2\sqrt{3}$
(c) 0
(d) $3\sqrt{3}$

Q16. If 50L of liquid containing 20% spirit is added with 10L of water then what would be the percentage of spirit in resulting mixture?

(a) 162/3%
(b) 121/2%
(c) 331/3%
(d) 20%

Q17. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

Some eggs are onions.

All onions are blue.

Conclusions:

I. All eggs are blue.

II. All onions are eggs.

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

Q18. If the sum of three numbers is zero, then which of the options below will always be equal to the value of the sum of the cubes of those numbers?

(a) one
(b) product of the three numbers
(c) zero

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(d) three times the product of the three numbers

Q19. Who is/are the author/s of the book 'The General Theory of Employment, Interest and Money'?

(a) David Ricardo
(b) Harrod and Domar
(c) Lewis Carroll
(d) John Maynard Keynes

Q20. Select the option in which the words share the same relationship as that shared by the given pair of words.

Train : Travel

(a) Food : Noodles
(b) Round : Circle
(c) Pen : Write
(d) Ideas : Dreams

Q21. Which among the following is the tallest tree species in the world?

(a) Redwood
(b) Deodar
(c) Oak
(d) Eucalyptus

Q22. Who has won the 'battle of Hydaspes'?

(a) Porus
(b) Ashoka
(c) Alexander
(d) Babur

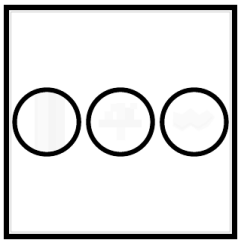
Q23. Which Article of the Constitution of India provides for universal adult suffrage?

(a) 327
(b) 326
(c) 325
(d) 329A

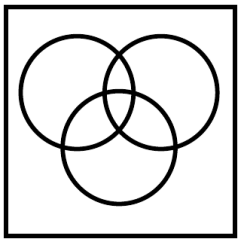
Q24. Select the Venn diagram that best represents the relationship between the following classes.

Rivers, Ganga, Water bodies

(a)

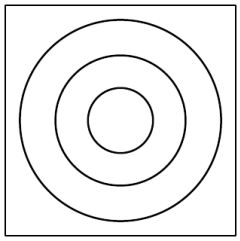


(b)

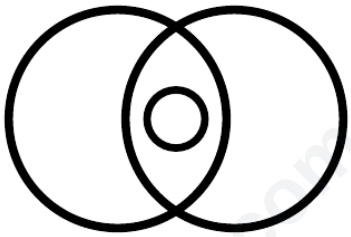


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(c)



(d)



Q25. What is the maximum value of a given item per kg out of the given years of the given table:-

Year	Quantity (in kg)	Value (in Rs.)
1993	110	230
1994	95	210
1995	125	340
1996	130	430

(a) 2.09
(b) 3.3
(c) 2.21
(d) 2.7

Q26. Who was the first person to fly into space?

(a) Yelena Serova
(b) Valentina Tereshkova
(c) Yuri Gagarin
(d) Neil Armstrong

Q27. From a watch tower of 200 m height, angles of depression of two cliffs in a horizontal line through the base of the tower are 45° and 30°. Find the distance between the cliffs if they are on the same side.

(a) 200/(1 - √3) m
(b) 200√3 m
(c) 200/(√3) m
(d) 200(√3 - 1) m

Q28. Who wrote the novel 'A Passage to India'?

(a) Gunnar Myrdal
(b) Aziz Ahmed
(c) Nirad C Chaudhari
(d) EM Forster

Q29. Which article of Indian Constitution says, 'The state shall take steps to separate the judiciary from the executive in the public services of the state'?

(a) Article 50
(b) Article 25
(c) Article 35

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(d) Article 55

Q30. What is the value of
7/9 - 11/12 + 13/16 - 1/8?
(a) 79/144
(b) 150/144
(c) 34/144
(d) 144/79

Q31. The OECD (The Organisation for Economic Co-operation and Development) headquarters are situated in:
(a) Paris
(b) Geneva
(c) Tokyo
(d) Washington DC

Q32. Who among the following were awarded the Nobel Peace Prize for 2018?
(a) Denis Mukwege and Arthur Ashkin
(b) Arthur Ashkin and George P Smith
(c) Denis Mukwege and Nadia Murad
(d) Nadia Murad and Arthur Ashkin

Q33. Which is the longest river in the world?
(a) Ganga
(b) Nile
(c) Amazon
(d) Yangtze

Q34. Which gas is produced during the process of photosynthesis?
(a) Carbon dioxide
(b) Hydrogen
(c) Oxygen
(d) Carbon monoxide

Q35. A train service got disrupted due to an accident after a travel of 30 km. The speed was reduced to four-fifth of the original speed. This caused it a delay of 45 min. If the accident had happened 18 km farther, it would have been running late for 36 min. What was the original speed of the train?
(a) 40 km/h
(b) 30 km/h
(c) 50 km/h
(d) 60 km/h

Q36. Who among the following represents the full authority of the Lok Sabha?
(a) Speaker
(b) President
(c) Vice President
(d) Prime Minister

Q37. Which is the highest waterfall of the world on land?
(a) Gavarnie
(b) Angel
(c) Jog
(d) Ribbon

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Q38. Settling down of heavier insoluble components of a mixture of water and insoluble substances is called:

(a) evaporation
(b) decantation
(c) filtration
(d) sedimentation

Q39. What is the number of divisors of 120?

(a) 17
(b) 15
(c) 19
(d) 16

Q40. A Man sold 2 articles for Rs. 4,000 each, gained 15% on one and lost 15% on the other. What is the total gain or loss rounded to the nearest integer?

(a) Rs. 175 gain
(b) Rs. 190 loss
(c) Rs. 184 loss
(d) Rs. 200 gain

Q41. Study the given pattern carefully and select the numbers from among the given options that can replace the question marks (?).

$25 \blacklozenge 64 = 5;\ 8;\ 13$

$144 \blacklozenge 36 = 12;\ 6;\ 18$

$121 \blacklozenge 81 = ?;\ ?;\ ?$

(a) 12; 18; 30
(b) 2; 5; 7
(c) 11; 9; 20
(d) 7; 10; 17

Q42. In 1991, the government set up the Tax Reforms Committee under the chairmanship of:

(a) Raja J Chelliah
(b) Raghuram Rajan
(c) Vijay Kelkar
(d) Narasimha Rao

Q43. Who among the following is the author of the book 'The Indian Struggle'?

(a) Subhash Chandra Bose
(b) Maulana Abul Kalam Azad
(c) Jawaharlal Nehru
(d) Mahatma Gandhi

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Q44. The compound of a metal found in nature is called:

(a) mineral
(b) slag
(c) ore
(d) flux

Q45. If the length of a rectangle is increased by 70%, what would be the percentage of decrease (correct to nearest integer) in the width to maintain the same area?

(a) 58.2 %
(b) 41.17 %
(c) 61.26%
(d) 60%

Q46. Five girls Priya, Usha, Riya, Shreya and Tina wrote a novel. The one who wrote first gave it to Riya. The one who wrote last took it from Priya. Tina was not the first or the last to write. There were two writers in between Usha and Priya. Who was the last to write the novel.

(a) Usha
(b) Priya
(c) Riya
(d) Shreya

Q47. What is the remainder of function $4a^3 - 12a^2 + 14a - 3$ when it is divided by a-1/2 ?

(a) • 3/2
(b) • 2/3
(c) 3/2
(d) 2/3

Q48. A sum of money, invested for 8 years on 5% per annum simple interest, amounted to Rs. 175 on maturity. What was the sum invested?

(a) Rs. 175
(b) Rs. 125
(c) Rs. 120
(d) Rs. 140

Q49. A question is given followed by two arguments. Decide which of the arguments is/are strong with respect to the question.

Question:

Is boarding school system beneficial to children?

Arguments:

(i) Yes, boarding school system separates children from their homes which is beneficial.

(ii) No, getting separated from parents for long periods of time may damage children's relationship with them, leaving the children feeling anxious or alone.

(a) Both the arguments are strong.
(b) Only argument (ii) is strong.
(c) Only argument (i) is strong.
(d) None of the arguments is strong.

Q50. Which of the following nations was the part of 'Axis Powers' in World War II?

(a) Germany
(b) USA
(c) Britain
(d) Russia

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Q51. If the value of 1/36.18 is 0.0276, then what is the value of 1/0.0003618 ?

(a) 27.60
(b) 2760
(c) 2.76
(d) 276.0

Q52. Who has built the Hawa Mahal?

(a) Maharana Pratap Singh
(b) Raja Jai Singh
(c) Maharaja Kumar Singh
(d) Maharaja Sawai Pratap Singh

Q53. What is the value of (6 + 4) × 4/2 + 5 - 3 ?

(a) 42
(b) 12
(c) 24
(d) 22

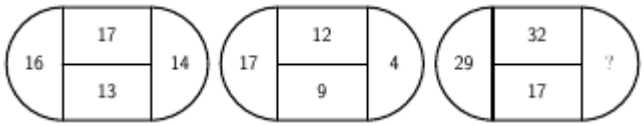
Q54. The energy currency of the cell is called as:

(a) ATP
(b) AMP
(c) RNA
(d) DNA

Q55. How many factors of $2^3 \times 3^3 \times 5^{\wedge}4 \times 7^2$ are divisible by 50 but not by 100?

(a) 36
(b) 38
(c) 40
(d) 42

Q56. Study the given pattern carefully and select the number from among the given options that can replace the question mark (?).



(a) 28
(b) 32
(c) 22
(d) 20

Q57. Which of the following is CORRECT statement for Kishor category under Pradhan Mantri Mudra Yojana?

(a) Loan to small businessmen from 35 thousand up to 7.5 lakhs
(b) Loan to small businessmen from 50 thousand up to 5 lakhs
(c) Loan to small business from 75 thousand up to 15 lakhs
(d) Loan to small businessmen from 25 thousand up to 5 lakhs

Q58. What was the total time taken to draft the Constitution of India?

(a) 2 years, 11 months and 18 days
(b) 2 years, 9 months and 10 days
(c) 2 years, 7 months and 17 days
(d) 2 years, 10 months and 17 days

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Q59. _____ is the only State of India where the Sangai deer is found.

(a) Kerela
(b) Manipur
(c) Assam
(d) Madhya Pradesh

Q60. Walter is Heisenberg's twin brother. Heisenberg is Eva's brother. Newton is Eva's father and Skyler's brother. Skyler is the mother of two children and has two nephews and three nieces. How is Skyler related to Walter's mother?

(a) Father's sister
(b) Mother's sister
(c) Husband's sister
(d) Husband's mother

Q61. The Quit India Movement started in the year:

(a) 1922
(b) 1942
(c) 1935
(d) 1940

Q62. In which of the following years, Queen Victoria's Proclamation declared that thereafter India would be governed by and in the name of the British Monarch through a secretary of State?

(a) 1857
(b) 1855
(c) 1858
(d) 1856

Q63. A cube of volume 324 cm^3 is molded into a cuboid whose length, width and height are in the ratio 3 : 2 : 2. Find the length of the cuboid.

(a) 12 cm
(b) 7.5 cm
(c) 9 cm
(d) 6 cm

Q64. _____ a 17 year old girl from Surat has been appointed as regional Ambassador for India by United Nations Environment Programme Tunza Eco-Generation in Sept 2020.

(a) Rani Patel
(b) Rina Navlekha
(c) Khushi Chindaliya
(d) Janhvi Shah

Q65. What is the place value of 3 in 367892141?

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

Q66. As of October 2020, who is the Chief Election Commissioner of India?

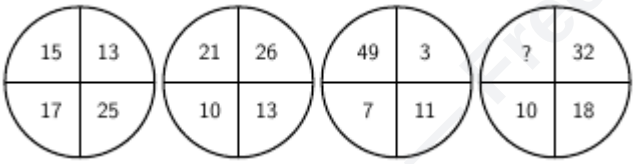
(a) Sunil Arora
(b) Nasim Zaidi
(c) Om Prakash Rawat
(d) Achal Kumar Jyoti

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Q67. What is the greatest number which divides 13, 26 and 39 and gives the remainders as 1, 2 and 3 respectively?

(a) 12
(b) 4
(c) 2
(d) 6

Q68. Study the given pattern carefully and select the number from among the given options that can replace the question mark (?).



(a) 69
(b) 65
(c) 8
(d) 10

Q69. A question is given followed by two arguments. Decide which of the arguments is/are strong with respect to the question.

Question:

Should parents buy war-type video games for their children?

Arguments:

(i) Yes, such games are useful in developing strategy and planning skills in children.

(ii) No, war-type toys do not teach children good values.

(a) None of the arguments is strong.
(b) Only argument (i) is strong.
(c) Both the arguments are strong.
(d) Only argument (ii) is strong.

Q70. When was the National Green Tribunal established by the Government of India?

(a) 2010
(b) 2011
(c) 2009
(d) 2012

Q71. Kaziranga National Park is famous for:

(a) Tiger
(b) One-horn rhino
(c) Thar
(d) Lion

Q72. A bowl contains 9 blue balls, 7 white and 5 black balls. If 2 balls are drawn in one go, then the probability of exactly one ball being white is:

(a) 7/15
(b) 7/14
(c) 1/14
(d) 7/21

Q73. The speeds of three cars are in the ratio of 2 : 3 : 4. The ratio of respective time taken by these cars to travel the same distance is:

(a) 6 : 5 : 3
(b) 6 : 4 : 3
(c) 1 : 2 : 3

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(d) 2 : 4 : 6

Q74. Who won the women's doubles Australian Open 2020?

(a) Timea Babos and Kristina Mladenovic
(b) Gabriela Dabrowski and Mate Pavic
(c) Kristina Mladenovic and Caroline Garcia
(d) Samantha Stosur and Zhang Shuai

Q75. The Indian Air Force was established on:

(a) 16 December 1932
(b) 10 April 1932
(c) 8 October 1932
(d) 10 September 1932

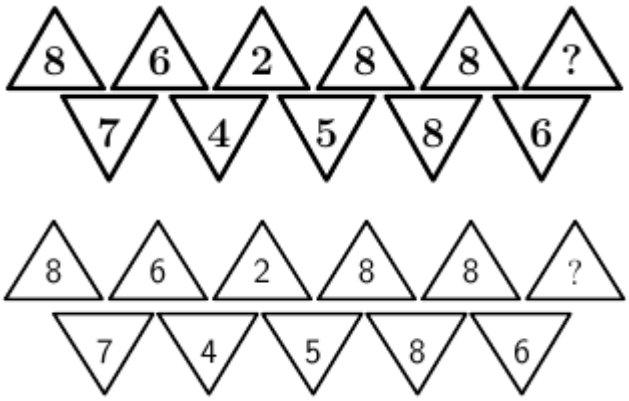
Q76. In a certain code language, ALBINISM is written as 79. How will NEURON be written in that code?

(a) 39
(b) 87
(c) 45
(d) 98

Q77. The measure of an angle is one half of its supplementary angle. Find its measure.

(a) 60°
(b) 30°
(c) 120°
(d) 90°

Q78. Study the given pattern carefully and select the number from among the given options that can replace the question mark (?).



(a) 8
(b) 4
(c) 2
(d) 3

Q79. The battle in which Babur defeated Ibrahim Lodi was the:

(a) Battle of Panipat
(b) Battle of Khanwa
(c) Battle of Chausa
(d) Battle of Chanderi

Q80. 12 people can sweep the floor in 4 days with 12 brooms. In how many days can 8 people sweep the floor with 8 brooms?

(a) 9
(b) 1

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(c) 5
(d) 7

Q81. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.
(a) Doctor
(b) Teacher
(c) Engineer
(d) Principal

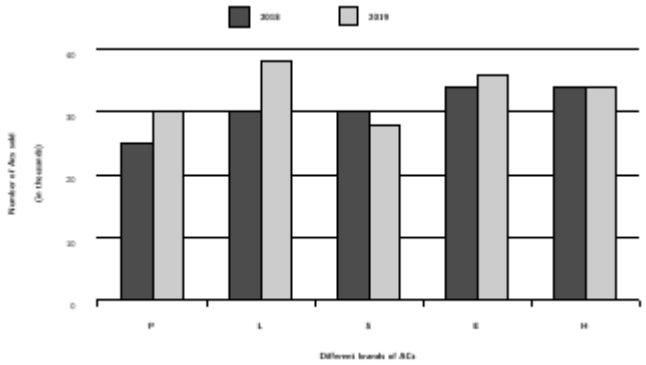
Q82. When did India carry out the first nuclear test at Pokhran?
(a) 18 June 1974
(b) 18 May 1974
(c) 28 May 2005
(d) 18 May 1975

Q83. What is the value of √75 + √147 ?
(a) 7√3
(b) 12√3
(c) 5√3
(d) 12/(√3)

Q84. What is the value of (6 × 2)/(8 - 1 + 5) ?
(a) 1
(b) 6
(c) 9
(d) 2

Q85. Entomophily pollination occurs with the help of:
(a) insects
(b) wind
(c) animals
(d) water

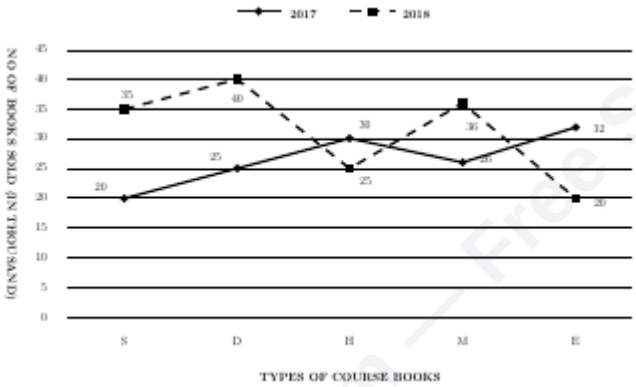
Q86. The given bar graph shows the total number of air conditioners (ACs) of different brands, P, L, S, E and H (in thousand numbers) sold by a supplier in 2018 and 2019. Study the graph carefully and answer the following question.



For which of the following pairs of brands was the total number of ACs sold in 2018 and 2019 together equal?
(a) H and L
(b) E and H
(c) S and H
(d) P and S

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Q87. The given line graph shows the total number of course books of Science (S), Drawing (D), Hindi (H), Mathematics (M) and English (E) (in thousand numbers) sold by a printing company in 2017 and 2018. Study the graph carefully and answer the following question.



The difference in the Sales of books of which subject is minimum between 2017 and 2018?

(a) Hindi
(b) Drawing
(c) English
(d) Maths

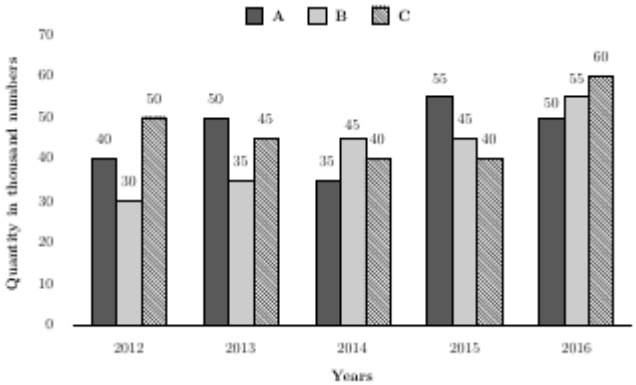
Q88. Study the given table that shows the number of students who appeared in the UPSC exam from five different states of India, and answer the following question.

States	A.P	U.P	MP	Punjab	Kerala
Years					
2014	280	300	250	500	440
2015	320	400	280	450	400
2016	260	450	240	320	350
2017	400	500	400	500	380
2018	350	430	540	410	420

What is the ratio of the total number of students who appeared in the UPSC exams in 2016 and 2017 from AP to that of students who appeared from UP for these years?

(a) 2 : 6
(b) 85 : 52
(c) 66 : 95
(d) 15 : 7

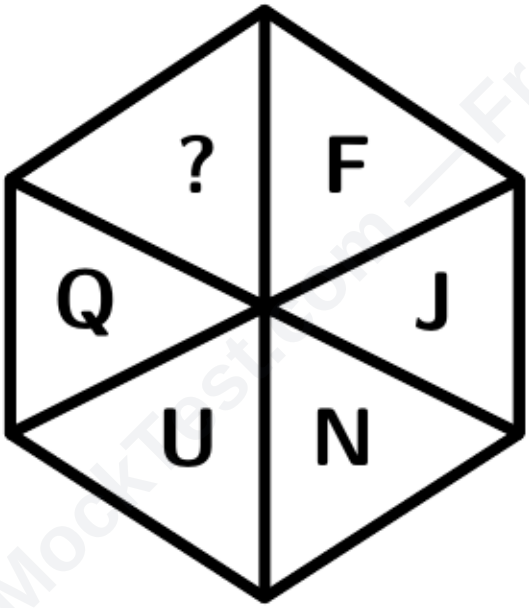
Q89. The given bar graph shows the data of the production of XYZ automobiles (in thousand numbers) by three branches, A, B and C of, a company over 5 years (2012-2016).



Which branch has recorded the highest percentage growth in production of XYZ automobiles in the given period?

(a) Branch B with approximately 50% growth
(b) Branch A with greater than 50% growth
(c) Branch B with greater than 80% growth
(d) Branch C with 100% growth

Q90. Study the given pattern carefully and select the letter from among the given options that can replace the question mark (?).



(a) O
(b) M
(c) Q
(d) P

Q91. Select the term from among the given options that can replace the question mark (?) in the following series.
2A, 3C, 5F, 7J, 11O, ?
(a) 17U
(b) 13U
(c) 15U
(d) 13V

Q92. In a certain code language, BAYWATCH is written as ZYWUYRAF. How will EFRON be written in that code?
(a) BCOLK
(b) DEQNO
(c) DCOLN
(d) CDPML

Q93. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.
(a) Premolars
(b) Canines
(c) Fillers
(d) Incisors

Q94. Select the term from among the given options that can replace the question mark (?) in the following series.
D4W, G5T, K9P, ?, S23H, V37E
(a) O13M
(b) P13L
(c) O14L
(d) O13L

Q95. Select the option in which the words share the same relationship as that shared by the given pair of words.

Kingfisher: Bird

(a) Fur : Cat
(b) Apple : Fruit
(c) Cold : Hot
(d) Fat : Body

Q96. Four word-pairs have been given, out of which three are alike in some manner and one is different. Select the odd one.

(a) Nut : Almond
(b) Tomato : Fruit
(c) Adidas : Brand
(d) Cricket : Sport

Q97. Select the combination of mathematical symbols from among the given options that when sequentially placed in the blank boxes will result in a balanced equation.

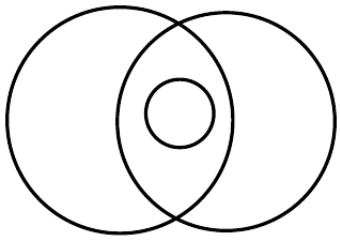
57 ☐ 3 ☐ 2 ☐ 2 ☐ 15 ☐ 25 ☐

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

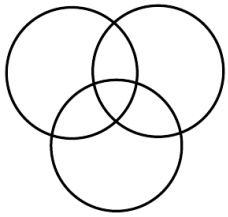
Q98. Select the Venn diagram that best represents the relationship between the following classes.

Honesty, Banana, Virtue

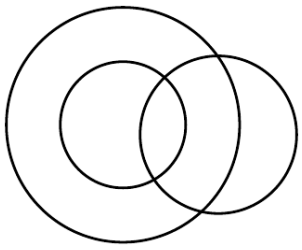
(a)



(b)

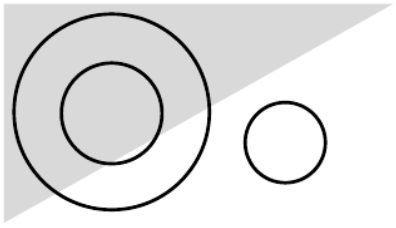


(c)



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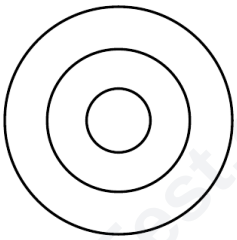
(d)



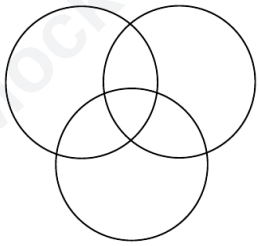
Q99. Select the Venn diagram that best represents the relationship between the following classes.

Blue, Water, Star

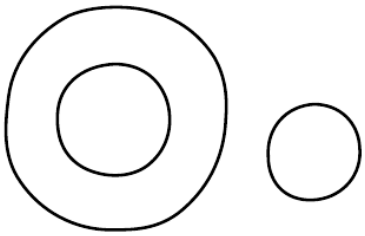
(a)



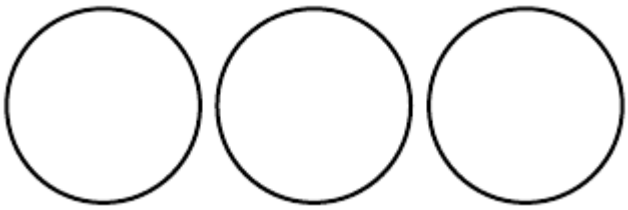
(b)



(c)

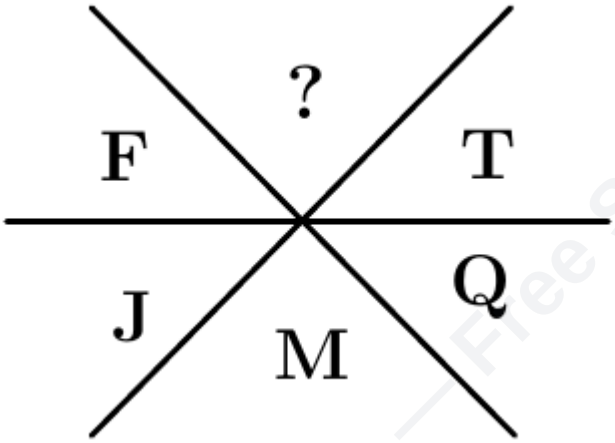


(d)



Q100. Study the given pattern carefully and select the letter from among the given options that can replace the question mark (?).

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(a) X
(b) U
(c) V
(d) W

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) Executive Support System

The correct answer is Executive Senior System.

Key Points

• The Executive Support System (ESS) belongs to software which allows users to interchange enterprise data into fast accessible and executive-level reports, such as those used by billing, accounting and staffing departments.

• The ESS improves decision-making for executives.

• ESS is also called Executive Information System (EIS).

Additional Information

• Advantages of ESS(Executive support system):

• Easy for upper level executive to use.

• Ability to analyze trends.

• Augmentation of managers' leadership capabilities.

• Enhance personal thinking and decision-making.

• Contribution to strategic control flexibility.

• Enhance organizational competitiveness in the market place.

• Instruments of change.

Q2. Answer: (a) Hindustan Newsprint Limited (HNL)

The correct answer is Hindustan Newsprint Limited (HNL).

Key Points

• Hindustan Newsprint Ltd. is a government company i Central Public Sector.

• This industrial unit is renamed as Kerala Paper Products Limited.

• HNL was established under the Companies Act, 1956, on 7 June 1983, in Kerala.

• The GOI(Government of India) announced the privatization of Hindustan Newsprint On 28 October 2017.

Additional Information

• Indian Government has approved the Maharatna status for NTPC, IOC, ONGC and SAIL.

• Indian Oil Corporation Limited is an Indian government-owned oil and gas explorer and producer, The headquarter of IOCL is located in New Delhi.

• The Oil and Natural Gas Corporation is an Indian oil and gas explorer and producer, The headquarter of ONGC is Located in New Delhi.

• Bharat Heavy Electricals Limited is an Indian govt. owned engineering and manufacturing enterprise which is based in New Delhi, India.

• It is under the of Ministry of Heavy Industries, Government of India

Q3. Answer: (d) 240

Given:

Explanation:

Logic : Multiply all outer numbers = Inner number

First jar

7 × 2 × 9 = 126

Similarly,

Second jar

6× 5× 8 = 240

Hence, "240" is the correct answer.

Q4. Answer: (c) Greater Noida

The correct answer is Greater Noida.

Key Points

• Prime Minister inaugurates the Pandit Deendayal Upadhyaya Institute of Archaeology at Greater Noida in Uttar Pradesh.

• The Institute's aims is to provide a supportive and enthusiastic academic atmosphere to help students achieve their full potential in the field of archaeology.

• “The institute will provide modern amenities for research scholars and students from India and also from all over the world."

• The institute was inaugurated on 9 March 2019.

Additional Information

• List of Top Archaeology Colleges In India based on 2022 Ranking

• BAMU, Aurangabad.

• BHU, Varanasi.

• Panjab University - [PU], Chandigarh.

• SPPU, Pune.

• Guru Gobind Singh Indraprastha University - [GGSIPU], New Delhi.

• B.K Birla College Of Arts Science & Commerce, Thane.

• University of Calcutta, Kolkata.

• Mumbai University, Mumbai.

Q5. Answer: (a) 5

Given:

Number of days taken by 18 skilled workers to do a task = 12 days

Number of days taken by 24 semi-skilled workers to do a task = 15 days

Number of workers left from skilled workers = 3

Concept Used:

Total Efficiency = Total Number of workers × Number of days taken

Calculation:

=> Let the efficiency of skilled workers be a and semi-skilled workers be b.

=> Total Efficiency for skilled workers = 18a × 12

=> So, Total Efficiency for semi-skilled workers = 24b × 15

=> According to the question, efficiencies will be same for both types of workers.

=> 18a× 12=24b× 15

=> 3a = 5b

=> This means efficiency of 3 skilled workers is equals to the efficiency of 5 semi-skilled workers.

=> If 12 skilled workers started the work and 3 of them left,

=> We have already derived the equation,

=> So, Number of semi-skilled workers who will replace 3 skilled workers = 5

Therefore, 5 semi-skilled workers will replace the 3 skilled ones who left the task.

Q6. Answer: (a) 1857

The correct answer is 1857.

Key Points

• Indian Mutiny, which is also called Sepoy Mutiny, widespread but unsuccessful rebellion against British rule in India in the year 1857–59.

• The present cause of the Indian Revolt of 1857, or Sepoy Mutiny, was a seemingly change in the weapons used by the British East India Company's army.

• The Company had updated to the new Pattern Enfield Rifle in the year 1853, which used greased paper cartridges.

• On 29 March 1857 at the Barrackpore parade ground, near Calcutta, 29-year-old Mangal Pandey of the 34th BNI, angered by the recent actions of the East India Company, declared that he would rebel against his commanders.

Additional Information

• The Battle of Plassey was a victory of the British East India Company over the Nawab of Bengal, on 23 June 1757, under the leadership of Robert Clive

• Texas Revolution, which is also known as War of Texas Independence, fought from October 1835 to April 1836 between Mexico and Texas colonists that resulted in Texas's independence from Mexico and the founding of the Republic of Texas

Q7. Answer: (c) y = √2 x

Given:

Lengths of chords = x and y

Angles subtended = 60º and 90º

Calculation:

=> In triangle COD, we have

=> All the radius length will be equal.

=> So, OA = OB = OC = OD = r

=> Applying Pythagoras theorem,

=> Hypotenuse = (Base² + Height²)^(1/2)

=> $y=\sqrt{(r^2+r^2)}=\sqrt{2}r$

=> $r=y/\sqrt{2}$

=> So, x = r because triangle AOB is an equilateral triangle.

=> Replacing the values, we get

=> $x=y/\sqrt{2}$

=> $y=\sqrt{2}x$

Therefore, the condition which is satisfied for the given chords is $y=\sqrt{2}x$

Q8. Answer: (b) 2015

The correct answer is 2015.

Key Points

• Indian PM Shri Narendra Modi on 15 July 2015, SKILL INDIA MISSION aims to train over 40 crore people in India in different skills by 2022.

• The National Skill Development Mission was Approved by the Union Cabinet in the year 2015.

• The main aim of the Skill India program is to provide adequate training in market-relevant skills to over 40 crore youth by 2022.
• It also aims to create opportunities for the development of talent in the country and improve the scope and space for undeveloped sectors.

Additional Information

• National Missions
• National semiconductor mission for a new era in electronics.
• National mission on natural language translation.
• Smart Cities Mission.
• National Skill Development Mission (NSDM).
• Digital India.
• Ayushman Bharat -National Health Protection Mission (AB-NHPM).
• Atal Innovation Mission.

Q9. Answer: (a) Patiyali

The correct answer is Patiyali.

Key Points

• Amīr Khusrau was born in Patiyali, presently located in Kasganj district, in modern-day Uttar Pradesh.
• Amir Khusrau was born on 19^(th) May 1253.
• He was a classical poet associated with the royal courts of the Delhi Sultanate.
• He is also associated with the courts of Alauddin Khilji the ruler of Khilji Dynasty.

Additional Information

• Famous Books are written by Amir Khusro:
• Ghazal.
• Masnavi.
• Qata.
• Rubai.
• Do-baiti.
• Tarkib-band.
• Excerpts of the works done by him are
• Tughluq Nama.
• Wast-ul-Hayat.
• Nuh Sipihr.
• Ashiqa.
• Khamsa.
• Baqia-Naqia.

Q10. Answer: (d) 297

Given:

LCM of x and y = 2079

HCF of x and y = 27

x = 189

Concept Used:

HCF × LCM = Product of two numbers

Calculation:

=> HCF × LCM = Product of two numbers

=> 27 × 2079 = 189 × y

=> 56133 = 189y

=> y=56133/189=297

Therefore, the value of y is 297.

Q11. Answer: (b) 18

Explanation:

Logic : Second number × Third number = A/first number = Answer

9 × 5 = 45/15 = 3

6 × 4 = 24/12 = 2

4 × 9 = 36/2 = 18

Hence, 18 is the correct answer.

Q12. Answer: (d) 60

Given:

X can work as fast as Y and Z together.

X and Y together can finish the task 3 times as fast as Z.

All three working together finishes the work in 15 days.

Calculation:

=> Let x, y and z be the per day work rate of X, Y and Z respectively.

=> According to the question,

=> x = y + z → (1)

=> x + y = 3z → (2)

=> x + y + z = 1/15 → (3)

=> Putting the value of Equation (2) into (3), we get

=> 3z + z = 1/15

=> z=1/(15× 4)=1/60

Therefore, the time Z will take to finish the task is 60 days.

Q13. Answer: (d) 60%

Given:

The population affected with asthma = 20%

Out of these 20%, patients who work in flour mills = 90%

The population working in flour mills = 30%

Concept Used:

Basic Percentage

Calculation:

=> Let the total population be 100

=> Number of people affected with asthma = 20% of 100 = 20/100× 100 = 20

=> Number of asthma patients working in flour mills = 90% of 20 = 90/100× 20 = 18

=> Number of people working in flour mills = 30% of 100 = 30/100× 100 = 30

=> Percentage of people working in mills who are suffering from asthma = 18/30× 100 = 60%

Therefore, 60% of the people working in mills are suffering from asthma.

Q14. Answer: (c) Rs. 40,000

Given:

Sum of cost prices of two bikes = Rs 1,00,000

Profit on selling of first bike = 20%

Loss on selling of second bike = 20%

Selling prices of both the bikes are same.

Concept Used:

Selling Price = (100+Gain%)/100× CP

Selling Price = (100-Loss%)/100× CP

Calculation:

=> Let the cost price of first bike be Rs x.

=> So, Cost price of second bike = Rs (100000 – x)

=> For first bike, Profit = 20%

=> So, SP of first bike = (100+20)/100× x=6x/5 Rs

=> Now, for second bike, Loss = 20%

=> So, SP of second bike = (100-20)/100× (100000-x)=(4(100000-x))/5

=> According to the question,

=> SP of first bike = SP of second bike

=> 6x/5=(400000-4x)/5

=> 6x + 4x = 400000

=> 10x = 400000

=> x=400000/10=40000

Therefore, the cost price of the first bike is Rs 40,000

Q15. Answer: (c) 0

Given:

cos θ + sec θ = √3

Concept Used:

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

cosθ=1/secθ

Calculation:

=> We have, cos θ + sec θ = √3

=> Cubing both the sides, we get

=> $\cos^3\theta+\sec^3\theta+3\times \cos\theta \times \sec\theta(\cos\theta+\sec\theta)=3\sqrt{3}$

=> Putting the given values,

=> $\cos^3\theta+\sec^3\theta+3\times 1/\sec\theta\times \sec\theta\times \sqrt{3}=3\sqrt{3}$

=> $\cos^3\theta+\sec^3\theta+3\sqrt{3}=3\sqrt{3}$

=> $\cos^3\theta+\sec^3\theta=3\sqrt{3}-3\sqrt{3}=0$

Therefore, the required value of $\cos^3\theta+\sec^3\theta$ is 0.

Q16. Answer: (a) 162/3%

Given:

Liquid solution = 50 L

Spirit percentage in liquid solution = 20%

Amount of water = 10 L

Calculation:

=> Amount of spirit in liquid solution = 20% of 50 L

=> Amount of spirit in liquid solution = 20/100× 50 = 10 L

=> If liquid solution is added with 10 L of water,

=> Resulting solution = 50 + 10 = 60 L

=> Percentage of spirit in resulting solution = 10/60× 100=50/3=162/3%

Therefore, the percentage of spirit in resulting mixture is 162/3%.

Q17. Answer: (a) Neither conclusion I nor II follows.

Explanation:

The possible Venn diagram is :

Conclusion I. All eggs are blue

False (because some eggs are onion)

Conclusion II. All onions are eggs.

False (as shown in the above venn diagram)

Hence, Neither conclusion I nor II follows is the correct answer.

Q18. Answer: (d) three times the product of the three numbers

Given:

Sum of three numbers = 0

Concept Used:

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

Calculation:

=> Let the three numbers be a, b and c.

=> According to the question, a + b + c = 0

=> Using the formula, we get

=> a3 + b3 + c3 – 3abc = (a + b + c)(a2 + b2 + c2 – ab – bc – ca)

=> Putting the value of given sum,

=> a3 + b3 + c3 – 3abc = 0 × (a2 + b2 + c2 – ab – bc – ca) = 0

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

Therefore, the value of the sum of cubes of three numbers is equals to "three times the product of the three numbers".

Q19. Answer: (d) John Maynard Keynes

The correct answer is John Maynard Keynes.

Key Points

• John Maynard Keynes's influential work was The General Theory of Employment, Interest and Money.

• He detailed these ideas in his magnum, The General Theory of Employment, Interest and Money, which was published in late 1936.

• British economist John Maynard Keynes, He was regarded as the founder of modern macroeconomics.

Additional Information

• David Ricardo was a classical economist, He was known for his theory on wages and profit, the labor theory of value, the theory of comparative advantage, and the theory of rents.

• The Harrod–Domar model is a model of economic growth. Which is used in the development of economics to explain an economy's growth rate.

• Lewis Carroll was a novelist and poet.

• He was known as the author of the children's book Alice's Adventures in Wonderland (1865) and its sequel Through the Looking-Glass

Q20. Answer: (c) Pen : Write

Explanation:

The logic followed here is :

Train : Travel : The purpose of train is that it is used for traveling and transport.

Similarly,

Pen : Write : The purpose of a pen is to write.

Hence, Pen: Write is the correct answer.

Q21. Answer: (a) Redwood

The correct answer is Redwood.

Key Points

• The world's largest tree is Hyperion, which is a coastal redwood tree and It is located in the Redwood National Park in California.

• The coastal redwood was discovered by Chris Atkins and Michael Taylor (both belonging to the USA) on 25 August 2006 and its location is kept a closely guarded secret to try and protect it.

• The height of this tree is approx 379 feet or 115 meters.

• The king of these giants tree is known as Hyperion, as per the Guinness book of World Records.

Additional Information

• Deodar Forests are forests dominated by Cedrus deodara, Which is also known as Deodar Cedars tree.

• These types of trees are found naturally in Western Himalayas from the Gandaki river in central Nepal to the Hindukush Mountain range in Afghanistan.

• The oak is a tree or shrub. There are approximately 500 extant species of oaks.

• Eucalyptus which is also known as southern blue gum or blue gum, is a species of tall, evergreen tree endemic to southeastern Australia.

Q22. Answer: (c) Alexander

The correct answer is Alexander.

Key Points

• The Battle of Hydaspes was a battle fought between Alexander the Great and the King Porus in 326 BC.

• It ended in a victory for Alexander's Macedonian Army.

• The Battle of the Hydaspes was also the most costly battle fought by the Macedonians.

• Sikandar is the Persian rendition of the name Alexander.

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Additional Information

• The battle of Hydaspes resulted in a victory and the surrender of King Porus.

• The Kalinga War was fought in ancient India between the Mauryan Ruler Ashoka the great and the state of Kalinga, an independent kingdom located on the east coast of Odisha.

• Important Battle fought by Babur.

• Battle of Khanwa.(1527).

• Battle of Ghaghra.(1529).

• 1^(st) Battle of Panipat(1526).

Q23. Answer: (b) 326

The correct answer is Article 326.

Key Points

• Article 326 of the Indian Constitution allows that the elections to the House of the People and to the Legislative Assembly for every Indian State will be on the basis of adult suffrage.

• As per Universal Adult Suffrage, women are not eligible to vote. Article 326 of the Indian Constitution is associated with Universal Adult Suffrage.

• Universal suffrage gives the right to vote to all adult Indian citizens, regardless of wealth, income, gender, social status, race, political stance, or any other restriction.

Additional Information

• Article 327: Power of Parliament allows making provision with respect to elections to legislature.

• Article 325: No person to be ineligible for inclusion or to claim to be included in a special electoral roll on grounds of religion, race, caste or sex.

• The validity of any law relating to the delimitation of constituencies or the allotment of seats to such constituencies, made or purporting to be made under Article 327 or Article 328, shall not be called in question in any court;

Q24. Answer: (c) [figure]

Explanation :

Ganga is a river and a river is a water body.

Hence option 3 is the correct answer.

Q25. Answer: (b) 3.3

Given:

Year	Quantity (in kg)	Value (in Rs.)
1993	110	230
1994	95	210
1995	125	340
1996	130	430

Calculation:

=> In 1993, value of 110 kg of an item = Rs 230

=> Value of 1 kg item = 230/110 = 2.1 Rs

=> In 1994, value of 95 kg of an item = Rs 210

=> Value of 1 kg item = 210/95 = 2.21 Rs

=> In 1995, value of 125 kg of an item = Rs 340

=> Value of 1 kg item = 340/125 = 2.72 Rs

=> In 1996, value of 130 kg of an item = Rs 430

=> Value of 1 kg item = 430/130 = 3.3 Rs

Therefore, the maximum value of a given item per kg out of given years is Rs 3.3.

Q26. Answer: (c) Yuri Gagarin

The correct answer is Yuri Gagarin.

Key Points

• Yuri Gagarin, a Soviet astronaut, became the first person to fly into space on April 12, 1961.

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• Orbited Earth aboard Vostok 1 for about 108 minutes.
• His flight marked a milestone in space exploration.
• Established the Soviet Union's lead in the space race.
• Inspired global advancements in space technology.
• Symbolizes humanity's capability for space exploration.

Additional Information

• Yelena Serova:
• Yelena Serova is a Russian cosmonaut who flew to the International Space Station (ISS) in 2014.
• She became the fourth Russian woman in space and the first Russian woman to visit the ISS since 1997.
• Valentina Tereshkova:
• First woman to fly into space.
• Launched aboard Vostok 6 on June 16, 1963.
• Completed 48 orbits around the Earth during her three-day mission.
• Became a symbol of women's achievements in space exploration.
• Neil Armstrong:
• Neil Armstrong was an American astronaut and the first person to walk on the moon on July 20, 1969, during NASA's Apollo 11 mission.
• His iconic words, "That's one small step for a man, one giant leap for mankind," were broadcast worldwide.

Q27. Answer: (d) 200(√3 - 1) m

Shortcut Trick

For two objects on the same side of a tower of height (h), the distance (d) between them is given by:

$d = h \times (\cot \theta_{(smaller)} - \cot \theta_{(larger)})$

Here, h = 200 m, $\theta_{(smaller)} = 30°$, and $\theta_{(larger)} = 45°$.

$d = 200 \times (\cot 30° - \cot 45°) = 200 \times (\sqrt{3} - 1)$ m.

Therefore The correct answer is $200(\sqrt{3} - 1)$ m.

Alternate Method

Given:

Height of the watch tower (AB) = 200 m

Angle of depression of first cliff (C) = 45° → Angle of elevation at C = 45°

Angle of depression of second cliff (D) = 30° → Angle of elevation at D = 30°

In right-angled triangle ABC:

=> tan 45° = AB / BC

=> 1 = 200 / BC

=> BC = 200 m

In right-angled triangle ABD:

=> tan 30° = AB / BD

=> 1 / √3 = 200 / BD

=> BD = 200√3 m

The distance between the two cliffs (CD) is:

=> CD = BD − BC

=> CD = 200√3 − 200

=> CD = 200(√3 − 1) m

Therefore The correct answer is 200(√3 − 1) m.

Additional Information

Angle Relationship

The angle of depression from a point is numerically equal to the angle of elevation from the observed object to that point because they are alternate interior angles.

Opposite Sides Formula

If objects are on opposite sides of the tower, the distance between them is $d = h(\cot \theta 1 + \cot \theta 2)$.

Trigonometric Values

Standard values used: tan 45° = 1, tan 30° = 1/√3, cot 45° = 1, and cot 30° = √3 (where √3 ≈ 1.732).

Q28. Answer: (d) EM Forster

The correct answer is EM Forster.

Key Points

• Edward Morgan Forster was an English author, He was best known for his novels, particularly A Room with a View, Howards End, and A Passage to India.

• He also wrote various short stories, essays, speeches and broadcasts, as well as limited number of biographies and some plays.

• It is widely known as Forster's finest work and it became his last novel, the fact that he remained active as a writer and critic for more than four decades after its publication.

• A Passage to India was published in the year 1924.

Additional Information

• Karl Gunnar Myrdal was a Swedish economist and sociologist.

• In 1974, he received the Nobel Memorial Prize in Economic Sciences.

• Nirad Chandra Chaudhuri was an Indian writer.

• In the year 1990, Oxford University awarded Nirad Chandra Chaudhuri, by then a long-time resident of the city of Oxford, an Honorary Degree in Letters.

• In the year 1992, he was made an honorary Commander of the Order of the British Empire.

Q29. Answer: (a) Article 50

The correct answer is Article 50.

Key Points

• Article 50: According to this Article the State shall take steps to separate the judiciary from the executive.

• In India, separation of functions rather than of powers is followed. Unlike in the US, in India, the concept of separation of powers is not adhered to strictly.

• Most of the constitutional systems do not have a separation of powers between the various organs in the classical sense because it is impractical.

• The purpose of separation of powers is to prevent abuse of power by a single person or a group of individuals.

Additional Information

• Separation of Powers

• This concept was first seen in the works of Aristotle, in the 4th century BCE, wherein he described the three agencies of the government as General Assembly, Public Officials and Judiciary.

• In the Ancient Roman Republic too, a similar concept was followed.

• In modern times, it was 18th-century French philosopher Montesquieu who made the doctrine a highly systematic and scientific one, in his book De l’esprit des lois (The Spirit of Laws).

• His work is based on an understanding of the English system which was showing a propensity towards a greater distinction between the three organs of government.

• The idea was developed further by John Locke.

Q30. Answer: (a) 79/144

Given:

7/9 - 11/12 + 13/16 - 1/8

Calculation:

=> Taking the LCM of denominators 9, 12, 16 and 8,

=> LCM of 9, 12, 16, and 8 = 144

=> 7/9 - 11/12 + 13/16 - 1/8 = (7× 16-11× 12+13× 9-18)/144

=> (112-132+117-18)/144=79/144

Therefore, the required value of the given expression is 79/144.

Q31. Answer: (a) Paris

The correct answer is Paris.

Key Points

• The Organisation for Economic Co-operation and Development (OECD) is a group of 37 member countries that discuss and develop economic and social policy.

• 12 OECD members are typically democratic countries that support free-market economies.

• The OECD's headquarters are at the in Paris, France.

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• India is now the 27th member of the Centre, joining many OECD countries as well as Argentina, Brazil and Chile.

Additional Information

• International organizations have been formed with the aim of helping to set the international agenda, strengthen political relationships, providing a place for developmental initiatives, etc.

• The city of Geneva itself is host to 39 international institutions, organizations, bodies as well as a secretariat established under a treaty.

• Some Important Organization and there Headquartes:

• United Nations University (UNU)- Tokyo, Japan.

• World Food Programme (WFP)- Rome, Italy.

• International Maritime Organisation (IMO)- London, United Kingdom.

• United Nations Educational Scientific and Cultural Organisation (UNESCO)-Paris, France.

Q32. Answer: (c) Denis Mukwege and Nadia Murad

The correct answer is Denis Mukwege and Nadia Murad.

Q33. Answer: (b) Nile

Correct answer is Nile.

Key Points

• The Nile River is roughly 4,100 miles long and was factually thought to be the longest river in the world.

• There is many of discussion surrounding this, however, for many believe the Amazon River in South America might be longer.

• The Nile River flows through south to north through eastern Africa.

• It starts in the rivers that flow into Lake Victoria, and empties into the Mediterranean Sea more than 6,600 kilometers (4,100 miles) to the north, making it one of the longest river in the world.

Additional Information

• The River Ganges emerges in the western Himalayas and flows down over northern India into Bangladesh, where it empties into the Bay of Bengal.

• The Amazon is the significant river of South America and the largest drainage system in the world in terms of the volume of its flow and the area of its basin.

• Yangtze is the country's chief waterway, and its basin is China's great granary and contains nearly one-third of the national population.

Q34. Answer: (c) Oxygen

The correct answer is Oxygen.

Key Points

• Carbon dioxide is released during photosynthesis.

• During photosynthesis, plants take in carbon dioxide (CO_2) and water (H_2O) from the air and soil.

• The raw materials required for photosynthesis are carbon dioxide, water and sunlight primarily.

• Oxygen is given out as a waste product during photosynthesis.

Additional Information

• Photosynthesis is a process used by plants and other organisms to convert light energy into chemical energy that, through cellular respiration, can later be released to fuel the organism's activities.

• Within the plant cell, the water is oxidized, meaning it loses electrons, while the carbon dioxide is reduced, meaning it gains electrons.

• This transforms the water into oxygen and the carbon dioxide into glucose.

Q35. Answer: (b) 30 km/h

Given:

Distance travelled by train before accident = 30 km

Reduced speed = Four-fifth of the original speed

Delayed time = 45 min

If accident would have happened 18 km farther, then delayed time = 36 min

Concept Used:

Speed = Distance ÷ Time

Calculation:

=> Let the original speed of train be x.

=> Reduced speed of train after accident = 4x/5

=> Time difference in covering extra 18 km due to change in speed = 45 – 36 = 9 min

=> According to the question,

=> 18/(4x/5)-18/x=9/60

=> (18× 5)/4x-18/x=3/20

=> (90-72)/4x=3/20

=> 3 × 4x = 20 × 18

=> x=360/12 = 30 km/h

Therefore, the original speed of the train is 30 km/h.

Q36. Answer: (a) Speaker

The correct answer is Speaker.

Key Points

• The speaker of the Lok Sabha is that the leader and also the highest authority of the Lok Sabha, the lower house of the Parliament of India.

• The speaker is elected generally whithin the first meeting of the Lok Sabha following general elections.

• Serving for a term of 5 years, the speaker chosen from sitting members of the Lok Sabha.

• Parliament is that the supreme legislative body of India.

Additional Information

• The President is liable for implementing and enforcing the laws written by Congress and, to it end, appoints the heads of the federal agencies, including the Cupboard.

• The Vice President is additionally a part of the chief Branch, able to assume the Presidency should the requirement arise.

• The Prime minister acts because the leader of the house of the chamber of parliament—generally the Lok Sabha—they belongs to.

• The Prime minister is tasked with representing the manager whithin the legislature, announces important legislation, and is further expected to reply to the opposition's concerns.

Q37. Answer: (b) Angel

The correct answer is Angel.

Key Points

• The highest or tallest waterfall in the world is Angel Falls, which means 'waterfall of the deepest place', is known in Venezuela.

• It is the world's tallest uninterrupted waterfall, with a height of 979 meters and a plunge of 807 m.

• The waterfall drops from the Auyán-tepui mountain in the Canaima National Park, a UNESCO World Heritage site in the Gran Sabana region of Bolívar State.

• Angel Falls exists as the highest continuous waterfall in the world.

Additional Information

• The Gavarnie Falls is a waterfall located in France. with the height of 422 meters, it is the highest waterfall in France.

• Jog is located in Siddapur taluk in Uttara Kannada district of Karnataka state, India.

• Ribbon Fall, which is located in Yosemite National Park in California, flows off on the west side of Capitan and is the longest single-drop waterfall in North America

Q38. Answer: (d) sedimentation

The correct answer is Sedimentation.

Key Points

• The process of separating insoluble substances which are heavier than liquid by allowing them to settle down on their own due to gravity is called sedimentation.

• Sedimentation is the process of deposition of sediments.

• It tooks place when particles in suspension are settled out of the fluid in which they are entrained and come to rest against a barrier.

• The particles which settled out from the suspension become sediment, and in water treatment is called as sludge.

Additional Information

• Evaporation is a procedure of vaporization which occurs on the surface of a liquid as it changes into the gas phase.

• Decantation is the process of separation of liquid from solid and other non-merging liquids.

• The process in which solid particles in a liquid or gaseous fluid are removed by the use of a filter medium that permits the fluid to

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pass through but retains the solid particles.

Q39. Answer: (d) 16

Given:

Divisors of 120

Calculation:

=> We have to find the divisors of 120

=> Divisors of 120 = 1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120

=> Total divisors = 16

Therefore, the total number of divisors of 120 is 16.

Q40. Answer: (c) Rs. 184 loss

Given:

Selling price of two articles = Rs 4,000 each

Profit percentage on first article = 15%

Loss percentage on second article = 15%

Concept Used:

Cost Price = 100/(100+Gain%)× SP

Cost Price = 100/(100-Loss%)× SP

Calculation:

=> For the first article with profit of 15%,

=> Cost Price = 100/(100+15)× 4000=100/115× 4000

=> Cost Price = Rs 3,478.26

=> For the second article with loss of 15%,

=> Cost Price = 100/(100-15)× 4000=100/85× 4000

=> Cost Price = Rs 4,705.88

=> Total Selling Price = Rs 8000

=> Total Cost Price = 3478.26 + 4705.88 ≈ Rs 8,184

=> Loss = CP – SP = 8184 – 8000 = Rs 184

Therefore, the loss on the selling of both articles costs to Rs 184.

Q41. Answer: (c) 11; 9; 20

Explanation:

Logic :√ (1^(st) number) +√ (2^(nd) number)= Third number

√25 = 5, √64 = 8

5 + 8 = 13

√144 = 12, √36 = 6

12 + 6 = 18

√121 = 11, √81 = 9

11 + 9 = 20

Hence, Option 3 is the correct answer.

Q42. Answer: (a) Raja J Chelliah

The correct answer is Raja J Chelliah.

Key Points

• The government constituted the Tax Reforms Committee (TRC) in August 1991, under the chairmanship of Professor Raja J. Chelliah to recommend measures for the reform of Central taxes.

• This TRC came up with three reports in 1991, 1992 and 1993 with several measures, which can be summarized in these points.

• Reforming the personal taxation system by reducing the marginal tax rates.

• Reduction in the corporate tax rates.

• Reducing the cost of imported inputs

• Reforming the personal taxation system by reducing the marginal tax rates.

• by lowering the customs duties.

Additional Information

• Raghuram Govindarajan is an Indian economist and the Katherine Dusak Miller Distinguished Service Professor of Finance at the University of Chicago Booth School of Business.

• Between 2003 and 2006 he was Chief Economist and director of research at the International Monetary Fund.

• Vijay L. Kelkar is an Indian economist and academic, who is currently the Chairman of the Forum of Federations, Ottawa & India Development Foundation, New Delhi.

• Pamulaparthi Venkata Narasimha Rao was an Indian lawyer and politician who served as the 9th Prime Minister of India from 1991 to 1996. He is often referred to as the "Father of Indian Economic Reforms"

Q43. Answer: (a) Subhash Chandra Bose

The correct answer is Subhash Chandra Bose.

Key Points

• The Indian Struggle, 1920–1942, is a two-division book by the Indian leader Netaji Subhash Chandra Bose.

• This book covers 1920–1942, this part elaborates the history of the Indian independence movement to end British imperial rule over India.

• The book analyzes a period of the Indian independence struggle from the Non-Cooperation and Khilafat Movements of the early 1920s to the Quit India and Azad Hind movements of the early 1940s.

• The first part of The Indian Struggle covers the years 1920–1934 and was published in London in 1935 by Lawrence and Wishart.

Additional Information

• India wins Freedom is a book written by Maulana Abul Kalam Azad.

• The Discovery of India and A letter from a father to his daughter are the books given by Pandit Jawaharlal Nehru.

• The Story of My Experiments with Truth is the autobiography of Mahatma Gandhi, covering his life from early childhood through to 1921.

Q44. Answer: (a) mineral

The correct answer is Mineral.

Key Points

• The compounds of metals in which the metals forms occur naturally are called minerals.

• Most pure metals on the earth come from the earth's crust.

• They are found in ores, which is a solid materials that minerals and metals can be taken from.

• The most valuable ore contains metals to industry and trade, like copper, gold, and iron.

Additional Information

• The fused material formed during the melting or refining of metals by combining the flux with gangue, impurities in the metal, etc is known as Slag.

• A naturally occurring mineral containing a valuable constituent (such as metal) for which it is mined and worked is known as Ore.

• Flux is the presence of a force field in a specified physical medium, or the flow of energy through a surface.

Q45. Answer: (b) 41.17 %

Given:

Increase in length of rectangle = 70%

Concept Used:

Area of rectangle = Length × Breadth

Calculation:

=> Let the length of rectangle be x and breadth be y.

=> Area of rectangle = xy

=> New length after increase = x + 70% of x

=> New length after increase = x+70/100× x=x+7x/10=17x/10

=> As the area is same, the breadth will be,

=> Breadth = xy/(17x/10)=10xy/17x=10y/17

=> So, Percentage decrease in width = 7y/17× 1/y× 100=700/17=41.17%

Therefore, the percentage decrease in the width to maintain the same area is 41.17 %.

Q46. Answer: (d) Shreya

Explanation:

STEP1. The one who wrote first gave it to Riya so Riya becomes the second to receive novel.

STEP2. The one who wrote last took it from Priya so Priya becomes 4th out of 5 girls to receive the novel.

STEP3.Tina was not the first or the last to write. Here Riya and Priya have already been placed at 2nd and 4th position respectively so Tina will be the 3rd girl to receive the novel.

STEP4. There were two writers in between Usha and Priya and to follow this logic we will place Usha at 1st and the remaining 5th posotion will be taken by Shreya.

Hence, Shreya is the correct answer.

Q47. Answer: (c) 3/2

Given:

Function = $4a^3 – 12a^2 + 14a – 3$

Divisor = a – 1/2

Calculation:

=> To get the value of a, equate the equation equals to 0.

=> So, a – 1/2 = 0

=> a = 1/2

=> Putting the value of a, in the function to get the remainder.

=> $f(1/2) = 4 \times (1/2)^3 – 12 \times (1/2)^2 + 14 \times (1/2) – 3$

=> $f(1/2) = 4 \times 1/8 – 12 \times 1/4 + 7 – 3$

=> $f(1/2) = 1/2 – 3 + 7 – 3$

=> f(1/2)=(1+2)/2=3/2

Therefore, the remainder of the given function when divided by a-1/2 is 3/2.

Q48. Answer: (b) Rs. 125

Given:

Amount = Rs 175

Time = 8 years

Rate = 5% per annum

Concept Used:

Simple Interest = (P× R× T)/100

Amount = Principal + Simple Interest

Calculation:

=> Let the sum invested be Rs x.

=> So, 175=x+(x× 5× 8)/100=(100x+40x)/100

=> 140x = 17500

=> x=17500/140 = 125

Therefore, the sum invested was Rs 125

Q49. Answer: (b) Only argument (ii) is strong.

Explanation :

Argument (ii) is valid because parents play biggest role in development and separation over long period of time damages children's relationship with them, leaving the children feeling anxious or alone.

Argument (i) is a baseless argument because separation from their homes is not beneficial

Hence, Only argument (ii) is strong is the correct answer.

Q50. Answer: (a) Germany

The correct answer is Germany.

Key Points

• The Axis powers (Germany, Italy, Japan) were opposed by the Allied Powers (led by Great Britain, the U.S, and also the Soviet Union).

• Five other nations joined the Axis during Warfare II: Hungary, Romania, Bulgaria, Slovakia, and Croatia.

• The decline and fall of the Axis alliance began in 1943.

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• The Axis Powers ruled much of Europe,geographical area and Africa.

Additional Information

• World War II or the Second World War, was a global war that lasted from 1939 to 1945.

• It involved the overwhelming majority of the world's countries—including all of the nice powers—forming two opposing military alliances: the Allies and therefore the Axis powers.

• Hitler's invasion of Poland in September 1939 drove Great Britain and France to declare war on Germany, marking the starting of World War II.

Q51. Answer: (b) 2760

Given:

1/36.18 = 0.0276

Calculation:

=> 1/36.18=0.0276

=> We have to find the value of 1/0.0003618,

=> To get this value, we will divide by 100000,

=> 1/(36.18/100000) = 0.0276 × 100000

=> 1/0.0003618 = 2760

Therefore, the value of 1/0.0003618 is 2760.

Q52. Answer: (d) Maharaja Sawai Pratap Singh

The correct answer is Maharaja Sawai Pratap Singh.

Key Points

• The Hawa Mahal is a palace in the city of Jaipur, Located in India.

• It is Built from red and pink sandstone.

• It is on the edge of the City Palace, Jaipur, and It can be extended to the Zenana.

• The structure was built in the year 1799 by Maharaja Sawai Pratap Singh, Who was the grandson of Maharaja Sawai Jai Singh, the Founder of the city of Jaipur, India.

Additional Information

• The Jantar Mantar was constructed in the year 1724, by King Sawai Jai Singh, the Raja of Jaipur.

• The Jantar Mantar in Delhi was the first to be built and was one of five-Jaipur, Ujjain, Varanasi, and Mathura.

• The memorial is a life-sized bronze statue of Maharana Pratap balanced on his loyal and favorite horse, Chetak.

• It is believed that Chetak was a faithful horse.

Q53. Answer: (d) 22

Given:

(6 + 4) × 4/2 + 5 – 3

Concept Used:

BODMAS = Bracket, Of, Division, Multiplication, Addition, Subtraction

Calculation:

=> (6 + 4) × 4/2 + 5 – 3

=> 10 × 2 + 5 – 3

=> 20 + 2 = 22

Therefore, the required value of the expression is 22.

Q54. Answer: (a) ATP

Correct answer is ATP.

Key Points

• Adenosine triphosphate, or ATP, is the chief molecule for storing and transferring energy in cells.

• The structure of ATP is a nucleoside triphosphate, made up of a nitrogenous base (adenine), a ribose sugar, and three serially bonded phosphate groups.

• ATP is generally mentioned as the "energy currency" of the cell, as it provides readily releasable energy in the bond between the second and third phosphate groups.

• ATP plays an important role in the transport of macromolecules such as proteins and lipids into and out of the cell.

Additional Information

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• Adenosine monophosphate (AMP) is one of the components of RNA and also the organic component of the energy-carrying molecule ATP.

• Ribonucleic acid (RNA) is a nucleic acid present in all living cells that has structural similarities to DNA.

• DNA, or deoxyribonucleic acid, is the hereditary material in humans and nearly all other organisms.

Q55. Answer: (a) 36

Given:

$23 \times 33 \times 54 \times 72$

Divisor = 50

Calculation:

=> We can write 50 as 2×5^2,

=> Extracting this term, we get

=> $2 \times 5^2 \times 2^2 \times 3^3 \times 5^2 \times 7^2$

=> Excluding 2^2 because multiplying any power of 2 with 50 will be divisible by 100

=> Now, the total factors will be +1 in each remaining terms power.

=> Factors of $23 \times 33 \times 54 \times 7^2$ which are divisible by 50 but not by 100 = $(3 + 1) \times (2 + 1) \times (2 + 1) = 4 \times 3 \times 3 = 36$

Therefore, total factors of $23 \times 33 \times 54 \times 7^2$ which are divisible by 50 but not by 100 equals to 36.

Q56. Answer: (d) 20

Explanation :

17 - 16 = 1, 14 - 13 = 1

17 - 12 = 5, 9 - 4 = 5

Similarly,

32 - 29 = 3, 20 - 17 = 3

Hence, 20 is the correct answer.

Q57. Answer: (b) Loan to small businessmen from 50 thousand up to 5 lakhs

Correct answer is Loan to small businessmen from 50 thousand up to 5 lakhs.

Key Points

• Pradhan Mantri MUDRA Yojana (PMMY) is a scheme launched by the Hon'ble Prime Minister on April 8, 2015, for providing loans up to 10 lakh to non-corporate, non-farm small/micro enterprises.

• Anyone who runs a small business enterprise is eligible to try for a Mudra Loan.

• The scheme offers a sanction that ranges from Rs. 50,000 to Rs. 5 lakh at the Mudra interest rate decided by the lending institution in question.

• In Kishore Mudra Yojana, the interest rate may range from 8.60% to 11.15% or more and is based on the scheme's guidelines and your credit history.

• Additional Information

• Pradhan Mantri Jan-Dhan Yojana (PMJDY) is a National assignment for Financial Inclusion to make sure access to financial services, namely, basic savings & deposit accounts, remittance, credit, insurance, and pension in an affordable manner.

• Pradhan Mantri Awas Yojana (PMAY) to provide affordable housing to all citizens by 2022.

• The Government of India started the Stand Up India scheme on April 5, 2016, as part of efforts to support entrepreneurship among women and Scheduled Caste & Scheduled Tribe (SC & ST) communities.

Q58. Answer: (a) 2 years, 11 months and 18 days

Correct answer is 2 years, 11 months and 18 days.

Key Points

• The Constitution process took 2 years, 11 months, and 18 days—at a total expenditure of Rs. 6.4 million to finish.

• The Republic is ruled in terms of the Constitution of India which was adopted by the Constituent Assembly on 26th November 1949 and effective on 26th January 1950.

• The Constitution of India is the supreme law of India.

• A constitution is a set of fundamental principles according to which a country can be governed.

• Additional Information

Qualities of the Indian Constitution are given below:

• World's Longest Constitution

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• Independent and Integrated Judicial System
• Directive Principles of State Policy
• Federal System with Unitary Features

Q59. Answer: (b) Manipur

Correct answer is Manipur.

Key Points

• The sangai, endemic to Manipur, is found only at the Keibul Lamjao National Park (KLNP), the world's only floating national park.
• It is largely seen over the floating biomass, locally known as “phumdi” in the South Eastern part of Loktak Lake inside the park.
• The park covers an area of 40 km² and the home range of the deer in the park is confined to 15–20 km².
• Sangai, also known as the brow-antlered deer or the dancing deer.
• Additional Information
• Periyar Wildlife Sanctuary is the biggest wildlife sanctuary in Kerala which is Spread over an area of approximately 777 sq km.
• The Kaziranga National Park is a famous wildlife sanctuary in Assam.
• Nauradehi Wildlife Sanctuary, covering about 1,197 km²is the largest wildlife sanctuary in Madhya Pradesh state in India.

Q60. Answer: (c) Husband's sister

Explanation:

The name written in the blue boxes refer to women's names and the remaining are the name of males.The bold vertical line represents parents- children while the bold horizontal line represents the relationship of siblings. The blue horizontal line represents wife-husband relations. Naming the mother of Walter 'Mother' we get to know that Skyler is Mother's Husband's sister.

Hence, Husband's sister is the correct answer.

Q61. Answer: (b) 1942

The correct answer is 1942.

Key Points

• On 8 August 1942 at the All-India Congress Committee session in Bombay, Mohandas Karamchand Gandhi start the 'Quit India' movement.
• A while later, Gandhi, Nehru, and many other leaders of the Indian National Congress were arrested by the British Government.
• The Quit India Movement was announced by the Indian National Congress after the failure of the Cripps Mission.
• The movement began in a speech in Bombay, where Mahatma Gandhi asked Indians to Do or Die.
• Additional Information
• The Khilafat movement (1919-1924) was a trouble by Indian Muslims allied with Indian nationalism in the years following World War I.
• Dandi March was a 24-day non-violent march conduct by Mahatma Gandhi.
• Champaran has been the starting point of India's independence movement began by Gandhi.

Q62. Answer: (c) 1858

Correct answer is 1858.

Key Points

• Queen Victoria's Proclamation of 1 November 1858 announced that then India would be governed by and in the name of the British Monarch through a Secretary of State.
• Government of India Act, 1858 is also famous as the act of good governance.
• Parliament to hand over administrative control of British India from the East India Company.
• The act made India a direct British Colony and scraped the dual government proposed by Pitt's India Act of 1784.

Additional Information

• Pitt's India Act established the system of dual control of India and these changes continued through 1858.
• The Government of India Act 1919 was an act of the British Parliament that sought to increase the participation of Indians in the administration of their country.
• The Government of India Act, of 1935 was an Act adapted from the Parliament of the United Kingdom.

Q63. Answer: (c) 9 cm

Given:

Volume of cube = 324 cm³

Ratio of length, width and height of cuboid = 3 : 2 : 2

Concept Used:

Volume of Cuboid = l × b × h

Calculation:

=> Let the length, breadth and height of cuboid be 3x, 2x and 2x respectively.

=> Even if cube is moulded into cuboid, the volume remains same.

=> Volume of cuboid = 324 cm^3

=> $3x \times 2x \times 2x = 324$

=> $12x^3 = 324$

=> $x^3 = 324/12 = 27$

=> So, x = 3

=> Length of cuboid = $3x = 3 \times 3 = 9$ cm

Therefore, the length of cuboid is 9 cm.

Q64. Answer: (c) Khushi Chindaliya

Correct answer is Khushi Chindaliya.

Key Points

• Khushi Chindaliya, a 17-year-old girl from Surat has been scheduled as Regional Ambassador for India by the United Nations Environment Programme - Tunza Eco-Generation.

• She says, "Impassioned about conserving the environment, I appeal to everyone to spread awareness to safeguard it."

• Brand ambassadors are additionally hired by the government or a private entity to affect the mindset of targeted customers or societies.

• Additional Information

• The United Nations Environment Programme (UNEP) is the main environmental authority in the United Nations system.

• UNEP works on delivering transformational change for people and nature by dessert on the root causes of the three planetary crises of climate change, nature and biodiversity loss, and pollution and waste.

•

Q65. Answer: (d) 3 × 10 ^8

Given:

Number = 367892141

Calculation:

=> Place value of 3 in 367892141 = 3 × 100000000

=> Place value of 3 in 367892141 = 3 × 10^8

Therefore, the place value of 3 in 367892141 is 3 × 10^8.

Q66. Answer: (a) Sunil Arora

Correct answer is Sunil Arora.

Key Points

• Sunil Arora was the 23rd Chief Election Commissioner of India.

• Sunil Arora is as well the chairman of the Association of World Election Bodies (A-WEB).

• He is a retired 1980-batch Indian Administrative Service (IAS) officer of the Rajasthan cadre.

• Additional Information

• Syed Nasim Ahmad Zaidi served as the 20th Chief Election Commissioner of India.

• Om Prakash Rawat is a retired 1977 batch Indian Administrative Service (IAS) officer of the Madhya Pradesh cadre as 22nd Chief Election Commissioner of India.

• Achal Kumar Jyoti is a retired 1975 IAS officer of Gujarat cadre as 21st Chief Election Commissioner of India.

Q67. Answer: (a) 12

Given:

Dividend = 13, 26 and 39

Remainders = 1, 2 and 3

Calculation:

=> Let the HCF of the numbers be x.

=> In order to make 13, 26 and 39 completely divisible by x, we need to deduct the remainders from them respectively.

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=> Required number = 12, 24 and 36

=> Factors of 12 = 2 × 2 × 3

=> Factors of 24 = 2 × 2 × 2 × 3

=> Factors of 36 = 2 × 2 × 3 × 3

=> HCF = Common factors = 2 × 2 × 3 = 12

Therefore, the greatest number which divides 13, 26 and 39 and gives remainders as 1, 2 and 3 respectively is 12.

Q68. Answer: (d) 10

Explanation:

The logic followed here is sum of all the number given in the circle will be equal to 70.

15 + 13 +17 + 25 = 70

21+ 26 + 10 + 13 = 70

49 + 3 + 7 + 11 = 70

10 + 32 +10 + 18 = 70

Hence, 10 is the correct answer.

Q69. Answer: (c) Both the arguments are strong.

Explanation :

Argument (i) and (ii) both are valid because it presents the fact that on one side war- type games helps in developing strategy and planning skills in children on the other side such games do not teach children good values.

so, both arguments are strong

Hence, Option 3 is the correct answer.

Q70. Answer: (a) 2010

Correct answer is 2010.

Key Points

• The National Green Tribunal was established in 2010.

• The National Green Tribunal Act is a specialised judicial body equipped with skill simply for the motive of adjudicating environmental cases in the country.

• The National Green Tribunal was set up under the National Green Tribunal Act, 2010 (NGT Act).

• The objective of the NGT Act is to provide effective and expeditious disposal of cases relating to the protection of the environment.

• Additional Information

• The NGT has five places for sittings, New Delhi is the chief place of sitting, and Bhopal, Pune, Kolkata, and Chennai are the other four.

• The NGT act directs and gives authority to the central government to form an NGT to deal with environmental issues.

• It is a trained body begin for the effective and timely resolution of matters involving environmental protection.

Q71. Answer: (b) One-horn rhino

Correct answer is One-horn rhino.

Key Points

• The Kaziranga National Park hosts two-thirds of the world's great one-horned rhinoceroses, is a World Heritage Site.

• Kaziranga National Park is a national park in the Golaghat and Nagaon districts of the state of Assam, India.

• Kaziranga is regarded as one of the finest wildlife refuges in the world.

• Kaziranga National Park is also known as an important birdlife area by Birdlife International for conserving varied species of birdlife.

• Additional Information

• The largest tiger reserve in India is the Nagarjunsagar-Srisailam Tiger Reserve.

• The Darrah National Park is one of the most popular national parks in Rajasthan.

• Gir forests of Gujarat is the only place where this race of lions i.e. Asiatic lion is found in its natural habitat.

Q72. Answer: (a) 7/15

Shortcut Trick

We need exactly 1 white ball and 1 non-white ball from 21 total balls (7 white, 14 non-white).

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Probability = P(First is White, Second is Non-White) + P(First is Non-White, Second is White)

P = (7/21 × 14/20) + (14/21 × 7/20)

P = (1/3 × 7/10) + (2/3 × 7/20)

P = 7/30 + 7/30 = 14/30 = 7/15

Therefore The correct answer is 7/15.

Alternate Method

Given:

Number of blue balls = 9

Number of white balls = 7

Number of black balls = 5

Number of balls drawn = 2

Formula Used:

Probability = Number of Favorable Outcomes ÷ Total Possible Outcomes

Combination formula: ${}^{n}C_r = n! \div [r! \times (n-r)!]$

Calculations:

=> Total number of balls = 9 + 7 + 5 = 21

=> Total possible outcomes when drawing 2 balls = ${}^{21}C2$

=> ${}^{21}C2 = (21 \times 20) \div (2 \times 1) = 210$

=> Number of non-white balls = 9 (blue) + 5 (black) = 14

=> We need exactly one white ball, which implies drawing 1 white ball AND 1 non-white ball.

=> Number of favorable outcomes = ^7C1 × ^(14)C1

=> Favorable outcomes = 7 × 14 = 98

=> Required Probability = 98 ÷ 210

=> Divide numerator and denominator by 14: 98 ÷ 14 = 7 and 210 ÷ 14 = 15

=> Required Probability = 7/15

Therefore The correct answer is 7/15.

Additional Information

Combinations in Probability

When drawing multiple items simultaneously, combinations (${}^{n}C_r$) are used to find the number of ways to select r items from a total of n items without regard to order.

Mutually Exclusive Events

Events that cannot occur at the same time. The probability of either event A or event B occurring is the sum of their individual probabilities: P(A or B) = P(A) + P(B).

Multiplication Rule for Dependent Events

When drawing items one after another without replacement, the outcome of the first draw affects the probabilities of the second draw: P(A and B) = P(A) × P(B after A).

Q73. Answer: (b) 6 : 4 : 3

Given:

Ratio of speeds of three cars = 2 : 3 : 4

Concept Used:

Speed is inversely proportional to time taken.

Speed = Distance / Time

Calculation:

=> Let the distance be 1.

=> LCM of 2,3 and 4 = 12

=> Ratio of time taken = 1/2× 12:1/3× 12:1/4× 12 = 6 : 4 : 3

Therefore, the ratio of time taken by these cars is 6 : 4 : 3

Q74. Answer: (a) Timea Babos and Kristina Mladenovic

Correct answer is Timea Babos and Kristina Mladenovic.

Key Points

• Tímea Babos and Kristina Mladenovic won their second Australian Open title.

• They defeated Hsieh Su-wei and Barbora Strýcová whithin the final, 6–2, 6–1. Despite the loss, Hsieh regained the WTA no.
• Tímea Babos may be a Hungarian professional tennis player who could be a former world No. 1 in doubles.
• Mladenovic is a French professional tennis player who is a former world No. 1 in doubles.
• Additional Information
• Gabriela Dabrowski is a Canadian tennis player With Mate Pavić, she further won the 2018 Australian Open mixed doubles title.
• The pair of Caroline Garcia and Kristina Mladenovic clinched the 2022 French Open women's doubles title.
• Zhang Shuai and Samantha Stosur won 6-3, 3-6, 6-3 to clinch the US Open women's doubles trophy.

Q75. Answer: (c) 8 October 1932

Correct answer is 8 October 1932.

Key Points

• The Indian Air Force was officially accepted on 8 October 1932.
• The Indian Air Force arise and on 1st April 1954 Air Marshal Subroto Mukherjee, one of the founding members of the Air Force took over as the first Indian Chief of Air Staff.
• The Indian Air Force is the air arm of the Indian Armed Forces.
• Its primary mission is to fix Indian airspace and to conduct aerial warfare during armed dispute.
• Additional Information
• The Indian Army was setup in 1895 along the side of the long accepted presidency armies of the East India Company, which too were absorbed into it in 1903.
• The Royal Indian Navy was formally inaugurated on 2 October 1934, at Bombay.
• Its ships carried the prefix HMIS, for His Majesty's Indian Ship.

Q76. Answer: (b) 87

Explanation :

Table of english alphabet positional value

According to above table

ALBINISM is written as 79

A(1) + L(12) + B(2) + I(9) + N(14) + I(9) + S(19) + M(13) = 79

Similarly,

NEURON will be written as 87

N(14) + E(5) + U(21) + R(18) + O(15) + N(14) = 87

Hence, 87 is the correct answer.

Q77. Answer: (a) 60°

Given:

The measure of an angle is one half of its supplementary angle.

Concept Used:

Supplementary Angles = if sum of their measures is 180°

Calculation:

=> Let one angle be x so another angle will be 180 – x.

=> 180 – x = 1/2 × x

=> 180 = x+x/2=3/2x

=> x=(180× 2)/3

=> x = 120°

=> other angle would be, 180 – x = 180 – 120 = 60 °

Therefore, the measure of the angle would be 60°

Q78. Answer: (b) 4

Given :

Explanation:

Logic : 1^(st)number + 2^(nd)number divide by 2 = Answer

8 + 6 = 14 ÷ 2 = 7

6 + 2 = 8 ÷ 2 = 4

2 + 8 = 10 ÷ 2 = 5

8 + 8 = 16 ÷ 2 = 8

Similarly,

The number that will replace the question mark is 4

8 + 4 = 12 ÷ 2 = 6

Hence, Option 2 is the correct answer.

Q79. Answer: (a) Battle of Panipat

Correct answer is Battle of Panipat.

Key Points

• The First Battle of Panipat was challenge between the invading forces of Babur and the Lodi Empire, which happened on 21 April 1526 in North India.

• It marked the starting of the Mughal Empire.

• This was one of the earliest battles involving gunpowderfirearms and field artillery.

• Babur was invited by Daulat Khan Lodi to enter India and defeat Ibrahim Lodi.

• Additional Information

• Battle of Khanwa was challenge between the forces of the first Mughal Emperor Babur and the Rajput forces led by Rana Sanga of Mewar, after the Battle of Panipat.

• The Battle of Chausa was fought between the Mughal emperor, Humayun, and the Afghan, Sher Shah Suri.

• The Battle of Chanderi happened in the aftermath of the Battle of Khanwa in which the Mughal Emperor Babur had defeated a confederacy of Rajputs and Afghans.

Q80. Answer: (a) 9

Given:

12 people sweep the floor with 12 brooms in = 4 days

Concept Used:

M1 × D1 × H1= M2 × D2× H2

Calculation:

Putting the values in the formula,

=> 12 × 4 × 12 = 8 × D2× 8

=> D2 = (12 ×4×12)/(8× 8)

=> D2 = 9

Therefore, 8 peoples sweep the floor with 8 brooms in 9 days.

Q81. Answer: (d) Principal

Explanation :

Doctor, Teacher, Engineer all are profession whereas principal is a designation.

So, odd one out is principal

Hence, Option 4 is the correct answer.

Q82. Answer: (b) 18 May 1974

Correct answer is 18 May 1974.

Key Points

• It was on May 18, 1974, that India tested its first nuclear bomb successfully in Rajasthan's Pokhran.

• Codebook "Smiling Buddha", India became world's sixth nuclear power outside the five permanent members of the United Nations.

• The bomb was detonated on the army base Pokhran Test Range (PTR), in Rajasthan, by the Indian Army under the supervision of many key Indian generals.

• Pokhran-I was also the first confirmed nuclear weapons test by a nation outside the five permanent members of the United Nations Security Council.

• Additional Information

• India's nuclear arsenal, which includes approximately 160 warheads.

• The Pokhran-II tests were a series of five nuclear bomb test eruptions held by India at the Indian Army's Pokhran Test Range in May 1998.

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• Work on a nuclear fission device had been permit by Indian Prime Minister Indira Gandhi on September 7, 1972.

Q83. Answer: (b) 12√3

Given:

√75 + √147

Concept used:

Basic Factorization

Calculations:

=> Factorization of 75 = 3 × 5 × 5

=> Factorization of 147 = 3 × 7 × 7

=> √75+√147=5× √3+7× √3

=> √3(5+7)=12 × √3

Therefore, the value of √75+√147 is 12√3

Q84. Answer: (a) 1

Given:

(6× 2)/(8-1+5)

Calculation:

=> (6× 2)/(8-1+5)=12/12=1

Therefore, the value (6× 2)/(8-1+5) is 1.

Q85. Answer: (a) insects

Correct answer is Insects.

Key Points

• Entomophily or insect pollination is a form of pollination by which pollen of plants, especially but not only of flowering plants, is distributed by insects.

• In entomophily, insects are the most common pollinators.

• The flowers give rise to nectar and fragrance with bright colours attract the insects.

• The most usual insect pollinators are – moths, flies, butterflies, wasp, bees, beetles etc.

• Additional Information

• Pollination is the act of transferring pollen grains from the male anther of a flower to the female stigma.

• When pollen is transported by wind, this is called anemophily.

• Water pollinated plants are aquatic. Pollen floats on the water's surface drifting until it contacts flowers.

Q86. Answer: (a) H and L

Given:

Calculation:

=> Total ACs sold by H in both the years = 34 + 34 = 68

=> Total ACs sold by E in both the years = 36 + 34 = 70

=> Total ACs sold by S in both the years = 28 + 30 = 58

=> Total ACs sold by L in both the years = 38 + 30 = 68

=> Total ACs sold by P in both the years = 30 + 25 = 55

Therefore, for the brands of H and L, the number of ACs sold in the both the years together are equal.

Q87. Answer: (a) Hindi

Given:

Calculation:

=> Difference in number of books sold for Science subject = 35 – 20 = 15

=> Difference in number of books sold for Hindi subject = 30 – 25 = 5

=> Difference in number of books sold for Drawing subject = 40 – 25 = 15

=> Difference in number of books sold for Mathematics subject = 36 – 26 = 10

=> Difference in number of books sold for English subject = 32 – 20 = 12

Therefore, The difference in the Sales of books of Hindi subject is minimum between 2017 and 2018.

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Q88. Answer: (c) 66 : 95

Given:

States	A.P	U.P	MP	Punjab	Kerala
Years					
2014	280	300	250	500	440
2015	320	400	280	450	400
2016	260	450	240	320	350
2017	400	500	400	500	380
2018	350	430	540	410	420

Concept Used:

Simple Sum and Ratio

Calculation:

=> Total number of students who appeared in the UPSC exams in 2016 and 2017 from AP = 260 + 400 = 660

=> Total number of students who appeared in the UPSC exams in 2016 and 2017 from UP = 450 + 500 = 950

=> Required ratio = 660/950=66/95

Therefore, the ratio of the total number of students who appeared in the UPSC exams in 2016 and 2017 from AP to that of students who appeared from UP is 66 : 95

Q89. Answer: (c) Branch B with greater than 80% growth

Given:

Concept Used:

Basic Percentage Calculation

Calculation:

=> For the branch A, increase in production for the given period = 50 – 40 = 10

=> Percentage increase in branch A = 10/40× 100 = 25%

=> For the branch B, increase in production for the given period = 55 – 30 = 25

=> Percentage increase in branch B = 25/30× 100=250/3 = 83.33%

=> For the branch C, increase in production for the given period = 60 – 50 = 10

=> Percentage increase in branch C = 10/50× 100 = 20%

Therefore, Branch B has highest recorded growth in the given period for more than 80%.

Q90. Answer: (b) M

Explanation:

According to the English alphabets and their positional values:

The pattern followed in the given series is:

Alphabets opposite to each others are of opposite positional values.

Hence the correct answer is option 2.

Q91. Answer: (b) 13U

Explanation:

According to the English alphabets and their positional values:

The pattern followed in the given series is:

Numbers are changing into next prime number

Alphabets increase by +1 increment in the previous difference of the positional value.

Hence the correct answer is option 2.

Q92. Answer: (d) CDPML

Explanation:

According to the English alphabets and their positional values:

The pattern followed in the given series is:

Alphabets are increased to 2 positional values.

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Similarly,

Hence the correct answer is option 4.

Q93. Answer: (c) Fillers

Explanation:

From the given words:

1) Premolars : Type of teeth

2) Canines : Type of teeth

3) Fillers : Artificial material to replace teeth

4) Incisors : Type of teeth

So, Fillers is odd one.

Hence the correct answer is option 3.

Q94. Answer: (c) O14L

Explanation:

According to the English alphabet and their positional values:

The pattern followed in the given series is:

First alphabet increase by 3, 4, 4, 4, and 3 positional value.

Numbers increase by sum of numbers in two previous clusters.

Last alphabet decrease by 3, 4, 4, 4, and 3 positional value.

Hence the correct answer is option 3.

Q95. Answer: (b) Apple : Fruit

Explanation:

The relation in the given pair is:

Kingfisher: Bird -- Bird is a species and Kingfisher is its type.

From the given options:

Option 1) Fur : Cat -- Cat is an animal and fur is its coat.

Option 2) Apple : Fruit -- Fruit is a species and Apple is a type.

Option 3) Cold : Hot -- Hot is a sensation and cold is its opposite.

Option 4) Fat : Body -- Body is a piece and fat is its part.

So, Apple : Fruit follows the pattern.

Hence the correct answer is option 2.

Q96. Answer: (a) Nut : Almond

Explanation:

The pattern used in the given options:

Type of group : Group

Option 1) Nut : Almond -- Nut is not a type of almond.

Option 1) Tomato : Fruit -- Tomato is a type of Fruit.

Option 1) Adidas : Brand -- Adidas is a type of Brand

Option 1) Cricket : Sport -- Cricket is a type of Sport

So, Nut : Almond is odd one.

Hence the correct answer is option 1.

Q97. Answer: (b) ÷, ×, +, =, +

Explanation:

We use the BODMAS rule to solve the equation:

Now we solve the given equation using each option:

Option 1) +, =, ÷, ×, +

$57 + 3 = 2 \div 2 \times 15 + 25$

$57 + 3 = 1\times 15 + 25$

$57 + 3 = 15 + 25$

$60 \neq 40$

Option 2) ÷, ×, +, =, +
57 ÷ 3 × 2 + 2 = 15 + 25
19 × 2 + 2 = 15 + 25
38 + 2 = 15 + 25
40 = 40
Option 3) ÷, ×, =, +, +
57 ÷ 3 × 2 = 2 + 15 + 25
19 × 2 = 2 + 15 + 25
38 = 2 + 15 + 25
38 ≠ 42
Option 4) ÷, ×, –, =, ×
57 ÷ 3 × 2 - 2 = 15 × 25
19 × 2 - 2 = 15 × 25
38 - 2 = 375
36 ≠ 375
Hence the correct answer is option 2.

Q98. Answer: (d) [figure]

Explanation:
From the given words:
Honesty, Banana, Virtue
We know that Banana is a fruit whereas Honesty and Virtue are moral traits.
So the Venn diagram will be:
The only option that matches this diagram is option 4)
Hence the correct answer is option 4.

Q99. Answer: (d) [figure]

Explanation:
From the given words:
Blue, Water, Star
We know that Blue is a color, Water is a liquid and Star is a object in space. There is no relation between all of them.
So the Venn diagram will be:
The only option that matches this diagram is option 4)
Hence the correct answer is option 4.

Q100. Answer: (a) X

Explanation:
According to the English alphabets and their positional values:
The pattern followed in the given series is:
Even placed alphabets are increased to 3 positional values.
Odd placed alphabets are increased to 4 positional values.
Hence the correct answer is option 1.

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