RRB NTPC CBT-I Official Paper (Held On: 9 Feb 2021 Shift 1) (Previous Year Paper)

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

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Q1. As per Census 2001 report, from which country does India receive most number of migrants?

(a) Pakistan
(b) Nepal
(c) Bangladesh
(d) China

Q2. Which traveller and scholar wrote 'Kitab-ul-Hind'?

(a) Al Biruni
(b) Duarte Barbosa
(c) Seydi Ali Reis
(d) Ibn Battuta

Q3. Read the given statements and select the option that is the most appropriate explanation for them.

Statements:

A. The prices of motorcycles have increased considerably during the past 2 years.

B. The prices of XYZ laptops have decreased considerably during the past 2 months.

(a) Statement A is the cause and statement B is its effect.
(b) Both the statements are independent causes.
(c) Statement B is the cause and statement A is its effect.
(d) Both the statements are effects of independent causes.

Q4. What was the Indira Gandhi Canal Command Area previously called as?

(a) Gujarat Canal
(b) Punjab Canal
(c) Rajasthan Canal
(d) Haryana Canal

Q5. A tyre has two punctures. The first puncture alone would have made the tyre flat in 9 min and the second alone would have done it in 6 min. If air leaks out at a constant rate, how long will it take both the punctures together to make the tyre flat?

(a) 31/2 min
(b) 41/4 min
(c) 33/5 min
(d) 11/2 min

Q6. By which river is the riverine island Majuli (Assam) formed?

(a) Kaveri
(b) Narmada
(c) Krishna
(d) Brahmaputra

Q7. Simplification of (0.2 × 0.2+0.02 × 0.02-0.4 × 0.02)/0.36 gives:

(a) 0.09
(b) 3.195
(c) 2
(d) 2.199

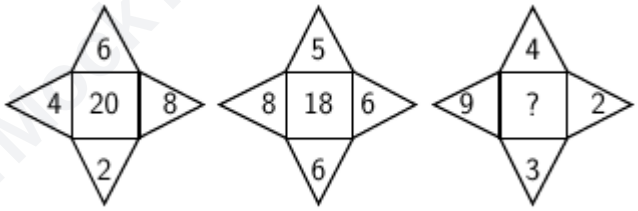
Q8. How many editions of the Indian Premier League (IPL) T20 Cricket tournament have been held till 2020?

(a) 08
(b) 09
(c) 13
(d) 11

Q9. The famous explorer _____ wanted to come to India, but instead landed on the shores of America.

(a) Genghis Khan
(b) Vasco de Gama
(c) Alexander
(d) Christopher Columbus

Q10. Study the given pattern carefully and select the number from among the given options that can replace the question mark (?) in it.



(a) 18
(b) 11
(c) 7
(d) 6

Q11. Where is the headquarters of Oil and Natural Gas Corporation located in India?

(a) Rajasthan
(b) Jharkhand
(c) Uttarakhand
(d) Mumbai

Q12. Which of the following Articles of the Constitution of India provides provisions for a joint sitting of both Houses of Parliament?

(a) Article 164
(b) Article 118
(c) Article 129
(d) Article 108

Q13. Which monarchy had the coronation ceremony of their king Maha Vajiralongkorn in May 2019?

(a) Cambodia
(b) Thailand
(c) Bhutan
(d) Tonga

Q14. In which place did Shah Mal lead the revolt in 1857?

(a) Baraut
(b) Hisar
(c) Rohtak
(d) Bhiwani

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Q15. When was the World Bank founded?

(a) Before the First World War
(b) After the Second World War
(c) During the First World War
(d) During the Second World War

Q16. Which of the following government Company manages steel plants in India?

(a) SAIL
(b) HSL
(c) GAIL
(d) DVC

Q17. A is 50% as efficient as B, C completes half of the task completed by A and B together in a day. If C alone completes the task in 40 days, then A, B and C together can complete the task in:

(a) 1/3 days
(b) 13 days
(c) 43/3 days
(d) 13 1/3 days

Q18. What is the full form of PDF in the context of file formats?

(a) Picture Disc Format
(b) Processing Digital File
(c) Portable Document Format
(d) Prefixed Detachable Format

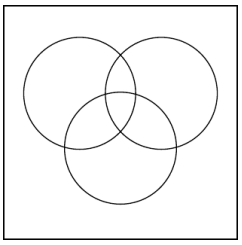
Q19. The researchers at which of the following institutes have designed and booted up India's first indigenously-developed microprocessor that can be used in mobile computing devices?

(a) IIT Delhi
(b) IIT Roorkee
(c) IIT Madras
(d) IIT Kanpur

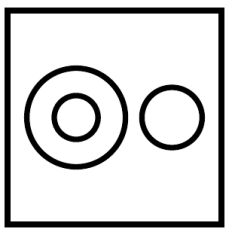
Q20. Select the Venn diagram that best represents the relationship between the given set of classes.

Magazines, Movies, Books

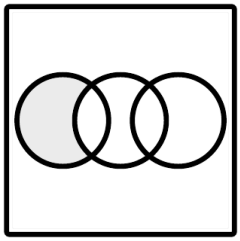
(a)



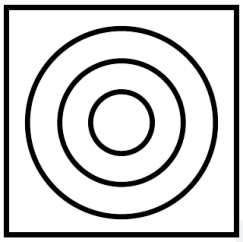
(b)



(c)



(d)



Q21. Zaman and Saman are brothers who have a single parent, Sochio. Sochio is brother to Daman, whose mother has an only brother named Sher. Daman is the paternal aunt of Zaman. Sher has only one nephew and one niece. What is the name of Sher's nephew?

(a) Daman
(b) Zaman
(c) Saman
(d) Sochio

Q22. Which country has the longest written constitution in the world?

(a) America
(b) India
(c) England
(d) France

Q23. India is an associate member of _____.

(a) ASEAN
(b) SAFTA
(c) LAIA
(d) NAFTA

Q24. Consider the following statements and decide which of them is/are correct.

1) Every prime is odd.
2) Product of any two prime numbers is odd.

(a) 2 alone
(b) 1 and 2
(c) Neither 1 nor 2
(d) 1 alone

Q25. Which supersonic cruise missile is named after the Indian river Brahmaputra and the Russian river Moskva?

(a) Putramos
(b) Mosputra
(c) Mosbrahma
(d) BrahMos

Q26. An Army General wishes to arrange his 40125 soldiers in rows and columns in the form of a square. After arranging them, he found that some of them are left out. How many soldiers are left out?

(a) 175
(b) 125

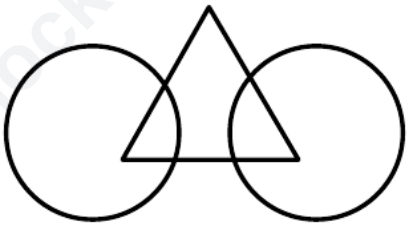
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(c) 200
(d) 150

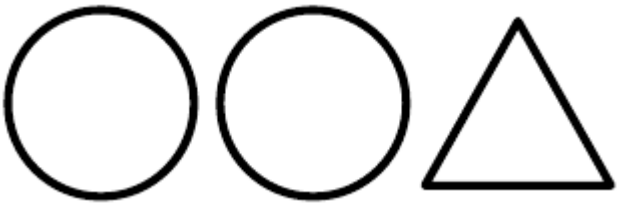
Q27. Select the number from among the given options that can replace the question mark (?) in the following series.
16, 2, 32, 3, 96, 4, ?
(a) 206
(b) 384
(c) 102
(d) 6

Q28. Solve the following.
(1/5 x - 1/6 y) (5x + 6y) = ?
(a) $x^2 + (11 x y)/30 - y$
(b) y^2
(c) $x^2 + (11 x y)/30 - y^2$
(d) $x + 11xy/30 - y^2$

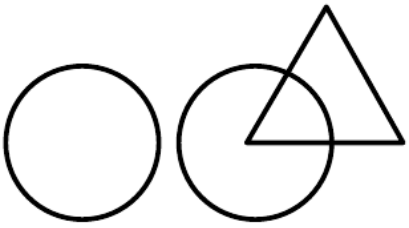
Q29. Select the diagram that best represents the relationship between the given set of classes.
Mammals, Amphibians, Turtles
(a)



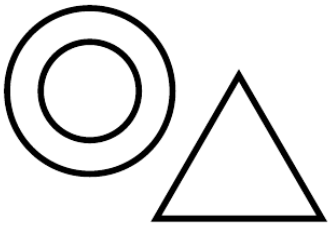
(b)



(c)



(d)



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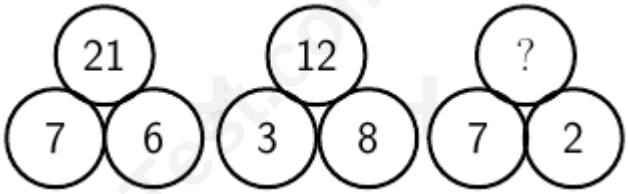
Q30. The difference between a 7% profit and a 6% loss while selling an item is Rs. 104. What is the cost price of the item?

(a) Rs. 800
(b) Rs. 780
(c) Rs. 820
(d) Rs. 850

Q31. The least number by which 294 must be multiplied to make it a perfect square, is:

(a) 3
(b) 1
(c) 6
(d) 4

Q32. Study the given pattern carefully and select the number from the given options that can replace the question mark (?) in it.



(a) 14
(b) 7
(c) 31
(d) 9

Q33. Who developed the concept of 'human development'?

(a) Amartya Sen
(b) Dalai Lama
(c) Mahbub-ul-Haq
(d) Charles Darwin

Q34. If a carton containing a dozen mirrors is dropped, which of the following can be the ratio of number of broken mirrors to unbroken mirrors?

(a) 5 : 1
(b) 3 : 2
(c) 3 : 7
(d) 4 : 7

Q35. The value of

cos(sec^(-1)x + cosec^(-1)x), |x| ≥ 1 is:

(a) 1
(b) ± 1
(c) 0
(d) 2

Q36. Which of the following universities designed and built the first electronic computer (ENIAC)?

(a) University of Pennsylvania
(b) University of Stanford
(c) University of Oxford
(d) University of Harvard

Q37. Which port city is called the 'Queen of Arabian Sea'?

(a) Mumbai
(b) Chennai
(c) Kochi

(d) Kolkata

Q38. Which of the following statement(s) is/are true.

1) Every whole number is a natural number.

2) Every integer is a rational number.

3) Every rational number is an integer.

(a) 1
(b) 2
(c) Both, 2 and 3
(d) 3

Q39. The Wildlife Crime Control Bureau (WCCB) is a statutory multi-disciplinary body under the Ministry of Environment, Forest and Climate Change (MoEF&CC). Its headquarters is in:

(a) Kolkata
(b) New Delhi
(c) Hyderabad
(d) Patna

Q40. In a certain code, OQIOIQOQQIOQ is written as OIQOQQIOQOQI. How will EFKFKEKEFFEK be written as in that code?

(a) KFKEKEFFEKEF
(b) KEKEFFEKEFKF
(c) FKEKEFFEKEFK
(d) EFKFKEKEFFEK

Q41. When was the Indian National Science Academy (NSA) established?

(a) July 1947
(b) December 1960
(c) January 1935
(d) October 1950

Q42. When 40 is subtracted from a number, it reduces to its 60%. What is the number?

(a) 160
(b) 100
(c) 200
(d) 130

Q43. Where in the body is villi found?

(a) Large intestine
(b) Small intestine
(c) Liver
(d) Stomach

Q44. The phenomenon of 'dispersion of light' into its seven constituent colours was discovered by _____ in 1666.

(a) Mendeleev
(b) Isaac Newton
(c) Archimedes
(d) Henry Moseley

Q45. The angle formed by the pages of a fully open book, with just few pages, is theoretically:

(a) Obtuse angle
(b) Straight angle
(c) Acute angle
(d) Right angle

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Q46. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.

(a) Movies
(b) Animation
(c) Documentaries
(d) Comics

Q47. The temple at Elephanta Caves located near Mumbai is dedicated to _____.

(a) Lord Vishnu
(b) Lord Krishna
(c) Lord Shiva
(d) Goddess Kali

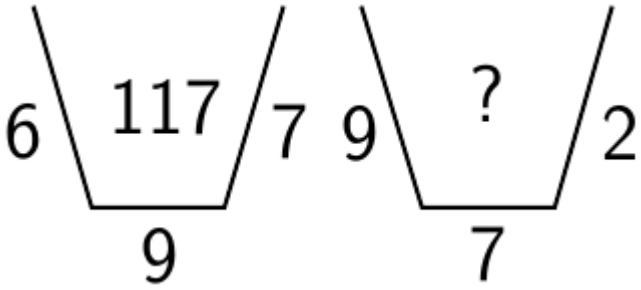
Q48. When was the Indian Constitution adopted?

(a) On 26^(th) January 1947
(b) On 26^(th) November 1946
(c) On 26^(th) November 1949
(d) On 26^(th) January 1950

Q49. If X is Y's sister, Z is Y's mother, A is Z's father and B is A's mother, then how is X related to A?

(a) Daughter's Daughter
(b) Daughter
(c) Father's Mother
(d) Mother's Sister

Q50. Study the given pattern carefully and select the number from among the given options that can replace the question mark (?) in it.



(a) 126
(b) 520
(c) 250
(d) 77

Q51. Where was Gautama Buddha born?

(a) Magadha
(b) Ayodhya
(c) Vaishali
(d) Lumbini

Q52. How much of an 80% orange juice drink must be mixed with 36 litres of a 25% orange juice drink to obtain a mixture that has 60% orange juice?

(a) 60 litres
(b) 40 litres
(c) 72 litres
(d) 63 litres

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Q53. Find the principal value of sin^(-1) (1/√2)

(a) 0
(b) π/2
(c) π
(d) π/4

Q54. Which of the following wildlife sanctuaries is located in Goa?

(a) Chinnar Wildlife Sanctuary
(b) Bhagwan Mahavir Wildlife Sanctuary
(c) Interview Island Wildlife Sanctuary
(d) Dandeli Wildlife Sanctuary

Q55. Two-fifth of one-fourth of three-seventh of a number is 15. What is the half of that number?

(a) 300
(b) 175
(c) 375
(d) 170

Q56. What will be the amount (in Rs.) of annual payment that will discharge a debt of Rs. 1,025 due in 2 years at the rate of 5% compound interest per annum?

(a) 550.0
(b) 551.60
(c) 549.23
(d) 551.25

Q57. Who founded the famous Vikramashila University in the 9^(th) century?

(a) Ballalasena
(b) Gopala
(c) Samantasena
(d) Dharmapala

Q58. What is the sum of the angle complementary to 15° and the angle supplementary to 125°?

(a) 150°
(b) 130°
(c) 120°
(d) 135°

Q59. Which organic compounds have suffix 'al'?

(a) Alkynes
(b) Aldehydes
(c) Alcohols
(d) Alkalenes

Q60. The Defence Research and Development Organisation (DRDO) was established in:

(a) 1947
(b) 1950
(c) 1991
(d) 1958

Q61. Which level of classification of organisms comes between 'Family' and 'Species'?

(a) Class
(b) Order
(c) Genus
(d) Phylum

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Q62. How many moons does planet Mars have as of October 2020?

(a) Six
(b) Two
(c) Nine
(d) Five

Q63. Select the option that is related to the third term in the same way as the second term is related to the first term.

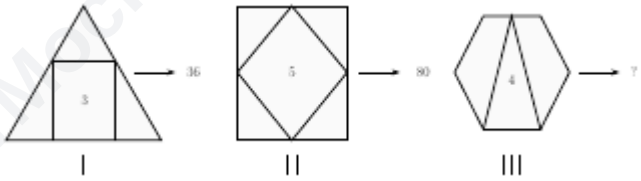
King : Palace :: Convict : ?

(a) Prison
(b) Stable
(c) Kennel
(d) Caravan

Q64. The South Indian counterpart of the North Indian instrument 'Nagada' is:

(a) Chenda
(b) Been
(c) Uddukai
(d) Damru

Q65. Study the given pattern carefully and select the number from among the given options that can replace the question mark (?) in it.



(a) 100
(b) 24
(c) 90
(d) 72

Q66. In the context of computing, which among the following is the correct order?

(a) MB > GB > TB > KB
(b) TB > KB > MB > GB
(c) GB > TB > MB > KB
(d) TB > GB > MB > KB

Q67. Who was the first General Secretary of the Indian National Congress?

(a) Gopal Krishna Gokhale
(b) Mahatma Gandhi
(c) AO Hume
(d) WC Banerjee

Q68. For the data set 1, 2, 3, 5, 2, 3, 4, 6, 6, 8, 3, 4, 5 which of the following options is INCORRECT?

(a) Mean = Mode
(b) Mean = Median
(c) Mode < Mean
(d) Median > Mode

Q69. How many members are there in the Security Council of the UN as of October 2020?

(a) 5 permanent members only
(b) 10 permanent members and 5 non-permanent members
(c) 5 permanent members and 5 non-permanent members
(d) 5 permanent members and 10 non-permanent members

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Q70. The ratio of the velocities of the hour hand and minute hand of a clock is:

(a) 1 : 12
(b) 5 : 1
(c) 1 : 1
(d) 12 : 1

Q71. The dimensions of an ice compartment in a refrigerator 8 cm × 5 cm × 4 cm. How many ice cubes will it hold, if each ice cube is 2 cm on its edge?

(a) 24
(b) 80
(c) 20
(d) 40

Q72. A retailer marks all his goods at 50% above the cost price and thinking that he will still make 25% profit, offers a discount of 25% on the marked price. What is his actual profit on the sales?

(a) 12.50%
(b) 17%
(c) 12%
(d) 12.60%

Q73. What is the value of the digits A and B?

BA × B3 = 57A

(a) A = 5, B = 2
(b) A = 2, B = 4
(c) A = 5, B = 3
(d) A = 3, B = 5

Q74. A train is moving at a uniform speed of 75 km/h. Find the time required by the train to cover a distance of 250 km.

(a) 3 h 20 min
(b) 2 h
(c) 3 h
(d) 3 h 5 min

Q75. In a certain code, DUFUDFDD is written as FUDFDDDU. How will COCACOCA be written as in that code?

(a) ACOCACOC
(b) COCOCACA
(c) AOCACOCC
(d) CACOCACO

Q76. Name the plant froqm which the anti-malarial drug Quinine is extracted.

(a) Eucalyptus
(b) Cinchona
(c) Basil
(d) Dandelion

Q77. In a five digit number, the digit in the hundred's place is 2 and the digit in the unit's place is twice the digit in the hundred's place. The number has no thousands. The digit in the ten thousand's place is the sum of the digit in the hundred's place and the digit in the unit's place. The digit in the ten's place is the digit in the ten thousand's place minus 1. The number is:

(a) 60254
(b) 60264
(c) 60224
(d) 60234

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Q78. In triangle ABC, angle A is 12° more than the measure of angle C. The measure of angle B is 4 times as great as the measure of angle C. What are the measures of the angles A, B and C respectively?

(a) 40°, 120°, 28°
(b) 40°, 112°, 18°
(c) 35°, 92°, 23°
(d) 40°, 112°, 28°

Q79. Two men start walking together to a certain destination, one at the speed of 3 km/h and another at the speed of 3.75 km/h. The latter arrives half an hour before the former. The distance is:

(a) 7.0 km
(b) 6.7 m
(c) 0.7 km
(d) 7.5 km

Q80. Find the least number that must be added to 1300 so as to get a perfect square.

(a) 36
(b) 69
(c) 63
(d) 96

Q81. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.

Statements:

All leaves are in plant.

All plants are in garden.

Conclusions:

1. All gardens have leaves.

2. All garden have plant.

(a) Only Conclusion 1 follows
(b) Only Conclusion 2 follows
(c) Neither conclusions 1 nor 2 follows
(d) Both conclusions 1 and 2 follow

Q82. What is the name of the Indian Air Force's Wing Commander who was captured and later released by Pakistani forces in 2019?

(a) Abhinandan Varthaman
(b) Ayushman Varthaman
(c) Anjuman Varthaman
(d) Ashutosh Varthaman

Q83. A shopkeeper cheats to the extent of 10% while buying as well as while selling. While he was eventually caught and punished, at what percent was he gaining till then?

(a) 20%
(b) 21%
(c) 21 1/2 %
(d) 34%

Q84. Who among the following replaced Pahlaj Nihalani as the Chairperson of Central Board of Film Certification?

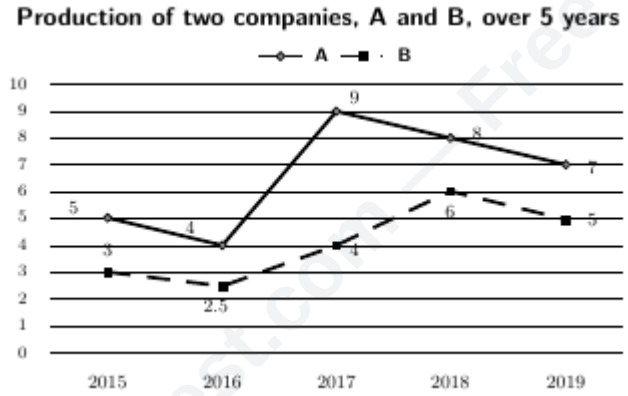
(a) Sheila Dikshit
(b) Jaya Bachchan
(c) Anupam Kher
(d) Prasoon Joshi

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Q85. Three numbers are in the ratio 1 : 2 : 3 and their HCF is 12. The respective numbers are:

(a) 10, 12, 36
(b) 12, 36, 48
(c) 12, 24, 36
(d) 12, 34, 36

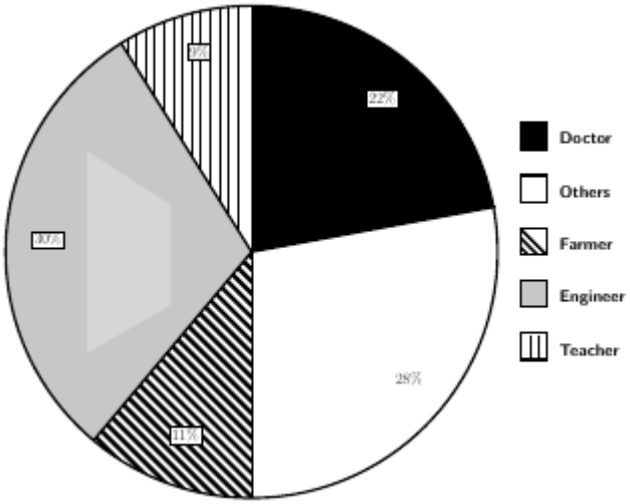
Q86. Study the following graph carefully and answer the given question.



For company A, what is the percentage decrease in the production from 2015 to 2016?

(a) 20%
(b) 15%
(c) 25%
(d) 50%

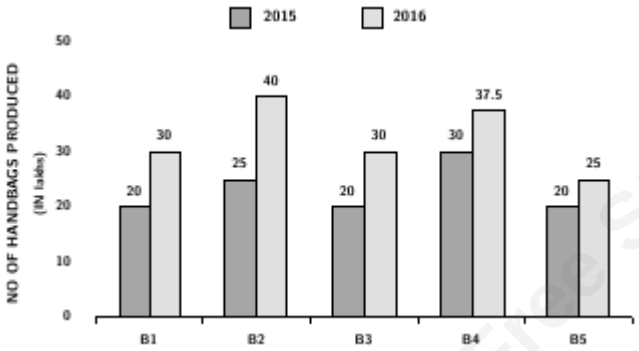
Q87. The following pie chart shows the number of people of various occupation in terms of percentage from different states of India.



For the farmer sector, what is the approximate measure of the central angle?

(a) 30°
(b) 25°
(c) 35°
(d) 40°

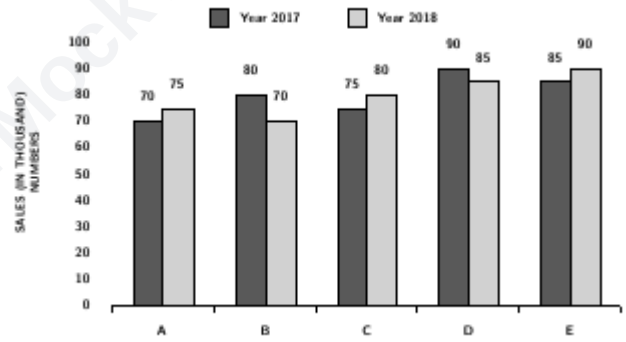
Q88. The given bar graph shows the total number of handbags (in lakhs) from five different branches of a company, B1, B2, B3, B4 and B5, produced in 2015 and 2016. Study the graph carefully and answer the following question.



In which branch was the production of handbags in 2016 nearest to the average of the total production of handbags across all branches for that year?

(a) Only B4
(b) B3 and B5
(c) B2 and B5
(d) B1 and B3

Q89. The following bar graph shows the sales of bicycle (in thousand numbers) from five different shops, A, B, C, D and E, in 2017 and 2018.



What is the ratio of the total sales of shop C for both the years to the total sales of shop E for both the years?

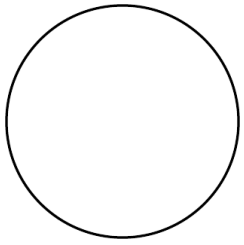
(a) 4 : 5
(b) 31 : 35
(c) 29 : 31
(d) 35 : 31

Q90. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.

(a) Violin
(b) Flute
(c) Saxophone
(d) Mouth Organ

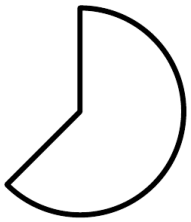
Q91. If 35 out of 40 people are Tamil speakers, then which of the following figures best depicts Tamil speakers?

(a)

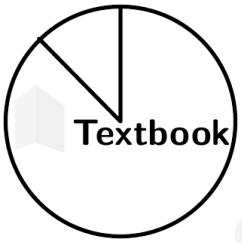


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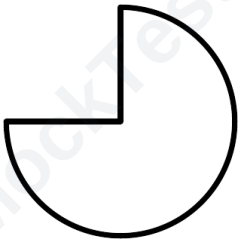
(b)



(c)



(d)



Q92. Select the number that does NOT belong to the following series.

5, 11, 24, 53, 106, 217

(a) 11
(b) 106
(c) 5
(d) 53

Q93. If '+' stands for 'division', '-' stands for 'addition', '×' stands for 'subtraction' and '/' stands for multiplication', then what will be the value of the following expression?

[{(15 × 10) - (3/5)} + (12 - 8)]/1

(a) 10
(b) 1
(c) 0
(d) 2

Q94. Select the option that is related to the third term in the same way as the second term is related to the first term.

R K Narayan : Novel :: R K Laxman : ?

(a) Advertising
(b) Art
(c) Comics
(d) Cartoon

Q95. Read the given events and select the option that is the most appropriate explanation for them.

Events:

A: Suraj died on his way to office.

B: Suraj had been feeling depressed since a month regarding the loss of his spouse.

(a) Event A is the immediate and principal cause and event B is its effect.
(b) Event A is the effect and event B is its immediate and principal cause.
(c) Event A is an effect but event B is not its immediate and principal cause.

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(d) Event B is an effect but event A is not its immediate and principal cause.

Q96. Select the option that is related to the third term in the same way as the second term is related to the first term.

Nepal : Cow :: India : ?

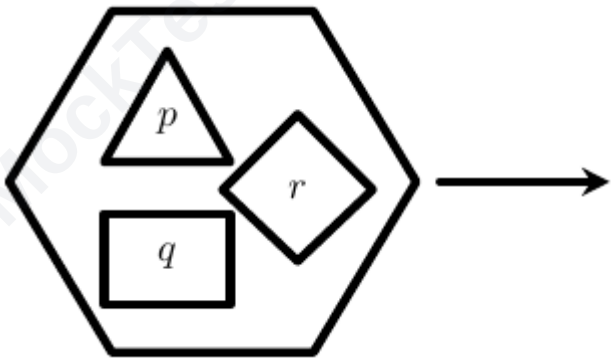
(a) Lion
(b) Rhinoceros
(c) Tiger
(d) Peacock

Q97. Select the term that does NOT belong to the following series.

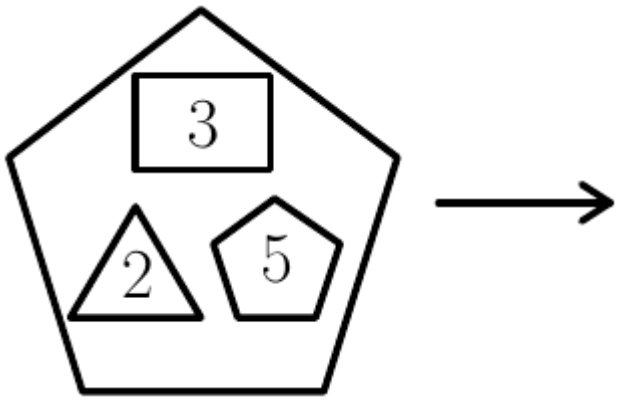
3DT, 7GS, 11PS, 15MQ, 19PP

(a) 15MQ
(b) 19PP
(c) 7GS
(d) 11PS

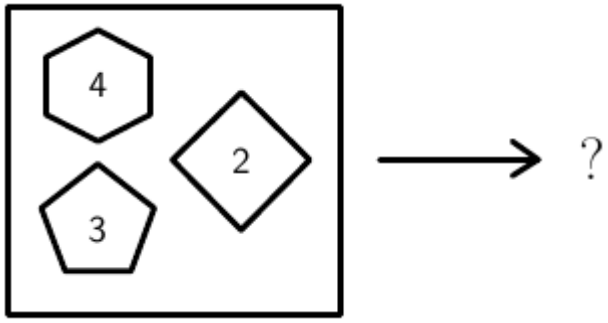
Q98. Study the given pattern carefully and select the number from among the given options that can replace the question mark (?) in it.



6{(3 + p) + (4 + q) + (4 + r)}



5{(4 + 3) + (3 + 2) + (5 + 5)} = 110



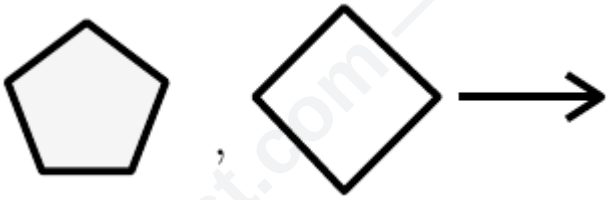
(a) 29

(b) 100
(c) 96
(d) 120

Q99. Study the given pattern carefully and select the numbers that can replace the question marks (?) in it.



20, 18



25, 24



?, ?

(a) 40, 42
(b) 30, 29
(c) 30, 18
(d) 18, 10

Q100. Four letter-pairs have been given, out of which three are alike in some manner and one is different. Select the odd one.

(a) T-X
(b) U-Z
(c) L-P
(d) A-E

ANSWER KEY

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

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SOLUTIONS

Q1. Answer: (c) Bangladesh

The correct answer is Bangladesh.

Key Points

• More than half of all remittances to India in recent years have come from the six Gulf Cooperation Council (GCC) nations:

• Bahrain.

• Kuwait.

• Oman.

• Qatar.

• Saudi Arabia.

• The United Arab Emirates.

• Nearly one-fifth of the money sent to India as remittances came from the United States.

• According to the most current census of 2011, there were 450 million internal migrants in India.

• This represents a 45% increase over the 309 million figures from 2001.

Additional Information

• Human migration is the movement of individuals from one location to another with the aim of relocating, either permanently or temporarily.

Q2. Answer: (a) Al Biruni

The correct answer is Al Biruni.

Key Points

• Abu Rayhan al-Biruni was an Iranian scholar.

• He has been variously called as the:-

• Founder of Indology.

• Father of Comparative Religion.

• Father of modern geodesy.

• The first anthropologist He wrote the book Kitab-ul-Hind.

• Alberuni (Abu Raynham Beruni) was a Persian scholar who came to India with Mahmud of Ghazni in 1017.

• He commented on Indian sciences, Hindu religious beliefs, customs, and social organization.

Additional Information

• The Book of Duarte Barbosa by Duarte Barbosa.

• Mirat ul Memalik book by Seydi Ali Reis.

• Travels in Asia and Africa book by Ibn Battuta.

Q3. Answer: (d) Both the statements are effects of independent causes.

Explanation:

Statement A and B are effects of some independent cause.

The prices of motorcycles have increased is not related to the price of XYZ laptops decrease is nowhere related to common cause.

Thus, they are the effects of the independent causes.

Hence, 'option 4' is the correct answer.

Q4. Answer: (c) Rajasthan Canal

The correct answer is Rajasthan Canal.

Key Points

• The canal was primarily designed to support irrigation in the Thar Desert region of the state of Rajasthan.

• The Indira Gandhi Canal project was earlier known as the Rajasthan Canal Project(RCP).

• RCP was first conceived on 29th October 1948.

• The origin of the canal is Harrike Barrage.

• To lift the water from the canal, seven lift canals have been constructed:-

• Bikaner-Lunakaransar lift canal

• Gajner lift canal

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• Kolayat lift canal
• Nohar-Saheve lift canal
• Pokharan lift canal
• Phalodi lift canal
• Bangarsar lift canal

Additional Information

• Narmada Canal:
• The Narmada Canal is a contour canal in Western India.
• It brings water from the Sardar Sarovar Dam to the state of Gujarat and then into Rajasthan state.
• The main canal has a length of 532 kilometers.
• It is the second longest canal in India and the largest canal by water carrying capacity.
• Sirhind Canal:
• The Sirhind Canal is a large irrigation canal that carries water from the Sutlej River in Punjab state, India.
• It is one of the oldest and biggest irrigation works in the Indus river system.
• It was inaugurated in 1882 CE.
• The canal begins at Ropar headworks near Ropar city in the Rupnagar district of Punjab.
• Yamuna Canal:
• There are four major canal systems that irrigate the agricultural land of the State.
• Western and Eastern Yamuna Canal: It is the oldest canal of the state.
• It emerges from the Tajewala barrage, which is located on Jagadhari-Paonta Sahib road.

Q5. Answer: (c) 33/5 min

Given:

The first puncture alone would have made the tyre flat in 9 min.

The second puncture alone would have made the tyre flat in 6 min

Calculation:

=> In 1 minute, the first puncture can make the tyre flat = 1/9 ^(th) part

=> In 1 minute, second puncture can make the tyre flat = 1/6 ^(th) part

Together, in 1 minute, both punctures can make the tyre flat = 1/9+1/6=15/54 ^(th) part

=> So, time taken for both the punctures to make the tyre flat = 54/15 minutes = 18/5 = 3 3/5 minutes.

Therefore, the time taken for both punctures to make the tyre flat is 33/5 minutes.

Q6. Answer: (d) Brahmaputra

The correct answer is Brahmaputra.

Key Points

• 'Majuli' is the largest river island in the world.
• Majuli island is a large river island located in the middle of the 'Brahmaputra River' in Assam.
• This island was formed due to a change in direction of the 'Brahmaputra River' and its tributaries.
• The Brahmaputra river origin from the Manasarovar Lake in Tibet and flow through Tibet, India, and Bangladesh.
• The Godavari is the longest river of South India it is known as "The Ganges of the South".

Additional Information

• The Kaveri river origin on the Brahmagiri range in the Western Ghats, of Kodagu district of the state of Karnataka.
• The Narmada River, also called the Reva and previously also known as Narbada or anglicised as Nerbudda, is the 5th longest river and overall longest west-flowing river in India.
• The Krishna River is a river in the Deccan plateau, and the third-longest river of India, after the Ganges and Godavari, and the fourth-largest in terms of water inflows and river basin area in India

Q7. Answer: (a) 0.09

Given:

(0.2 × 0.2+0.02 × 0.02-0.4 × 0.02)/0.36

Calculation:

=> (0.2 × 0.2+0.02 × 0.02-0.4 × 0.02)/0.36

= (0.04+0.0004-0.008)/0.36

=> 0.0324/0.36=0.09

Therefore, the simplified value of the expression is 0.09

Q8. Answer: (c) 13

The correct answer is 13.

Key Points

• The Indian Premier League is a domestic T20 cricket tournament in India.

• It is organized by IPL Governing Council and comes under the Board of Control for Cricket in India.

• It is the most watched Twenty20 tournament and the second-best paying porting league globally.

• IPL was established in 2008.

• It consists of 10 teams from 10 cities across India.

• 13 editions of the IPL tournament have been held till 2020.

Additional Information

• Winners of IPL:

YEAR	Winner
2008	Rajasthan Royals
2009	Deccan Chargers
2010	Chennai Super Kings
2011	Chennai Super Kings
2012	Kolkata Knight Riders
2013	Mumbai Indians
2014	Kolkata Knight Riders
2015	Mumbai Indians
2016	Sunrisers Hyderabad
2017	Mumbai Indians
2018	Chennai Super Kings
2019	Mumbai Indians
2020	Mumbai Indians
2021	Chennai Super Kings
2022	Gujarat Titans

Q9. Answer: (d) Christopher Columbus

The correct answer is Christopher Columbus.

Key Points

• Christopher Columbus was an Italian explorer and navigator.

• He was born in 1451 and died in 1506.

• He is known for his 1492 'discovery' of the New World of the Americas on board his ship Santa Maria.

• Columbus wanted to find a new route to India, China, Japan and the Spice Islands.

• The faous explorer Christopher Columbus wanted to come to Indial but instead landed on the shores of America.

Additional Information

• Genghis Khan was the founder and first Great Khan of the Mongol Empire, which became the largest contiguous empire in history after his death.

• Vasco da Gama was best known for being the first to sail from Europe to India by rounding Africa's Cape of Good Hope.

• Alexander is known as 'the great' both for his military genius and his diplomatic skills in handling the various populaces of the regions he conquered.

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Q10. Answer: (d) 6

Explanation:

Logic : The number in the square is the difference of product of numbers opposite to each other.

Figure 1 :

=> (8 × 4) - (6 × 2)

=> 32 - 12

=> 20

Figure 2:

=> (8 × 6) - (6 × 5)

=> 48 - 30

=> 18

Similarly, figure 3:

=> (9 × 2) - (4 × 3)

=> 18 - 12

=> 6

Hence, 'option 4' is the correct answer.

Q11. Answer: (c) Uttarakhand

The correct answer is Uttarakhand.

Key Points

• Vasant Kunj in Delhi serves as ONGC's corporate headquarters.

• Shashi Shanker is the CEO of ONGC.

• Digboi was the first oil to be found in India.

• In the Andhra Pradesh city of Tatipaka, ONGC has a refinery.

• A division of ONGC is Mangalore Refineries and Petrochemicals Ltd.

• Operating Mumbai High Oil Field is ONGC.

Additional Information

• ONGC Videsh Limited is an Indian government-owned Miniratna Schedule "A" Central Public Sector Enterprise (CPSE) that reports to the Ministry of Petroleum & Natural Gas.

• It is the main national oil firm (NOC) of India, Oil and Natural Gas Corporation Limited (ONGC), and its foreign affiliate.

• It is a shareholder in 37 oil and gas properties in 17 nations.

Q12. Answer: (d) Article 108

The correct answer is Article 108.

Key Points

• Article 108 of the Indian Constitution provides for a joint sitting of both Houses of Parliament.

• The joint session is summoned by the President.

• It is presided over by the Speaker of the Lok Sabha.

• The joint sitting is governed by the Rules of Procedure of Lok Sabha and not of Rajya Sabha.

• The quorum to constitute a joint sitting: 1/10th of the total number of members of the House.

• The Bill is passed by a simple majority of the total number of members of both the Houses present and voting in the joint sitting.

Additional Information

• According to Article 164 The total number of Ministers, including the Chief Minister, in the Council of Ministers in a State shall not exceed fifteen per cent. of the total number of members of the Legislative Assembly of that State.

• Accoridng to Article 118 The President, after consultation with the Chairman of the Council of States and the Speaker of the House of the People, may make rules as to the procedure with respect to joint sittings of, and communications between, the two Houses.

• According to the Article 129 The Supreme Court to be a court of record The Supreme Court shall be a court of record and shall have all the powers of such a court including the power to punish for contempt of itself.

Q13. Answer: (b) Thailand

The correct answer is Thailand.

Key Points

• Ascension to the Throne: King Vajiralongkorn (Rama X) ascended the throne at the age of 64 after his father, King Bhumibol

Adulyadej, passed away on 13 October 2016.

• He formally accepted the accession invitation on 1 December 2016.

• Coronation Date: The coronation ceremonies took place on 4 May 2019 at the Grand Palace in Bangkok, marking his formal enthronement.

• Timing of Coronation: The event was held nearly three years after his ascension, allowing an appropriate mourning period following the death and funeral of his father, King Bhumibol Adulyadej, and to prepare for the elaborate ceremonies, which had not been held since 1950.

• Historic Broadcast: This was the first coronation in Thailand to be televised and was broadcasted in both Thai and English, enabling widespread viewership.

Q14. Answer: (a) Baraut

The correct answer is Baraut.

Key Points

• Sah Mal was a rebel at the time of the Indian Rebellion of 1857.

• It is based out of the village of Bijrol, Uttar Pradesh.

• He led the Jats of Baraut in rebellion against the East India Company.

• In June 1857, Sah Mal Singh seized 500 head of cattle, collected escaped convicts and other locals, and formed a force.

Additional Information

• The Revolt of 1857:

• It was the first expression of organised resistance against the British East India Company.

• It began as a revolt of the sepoys of the British East India Company's army but eventually secured the participation of the masses.

• The revolt is known by several names: the Sepoy Mutiny (by the British Historians), the Indian Mutiny, the Great Rebellion (by the Indian Historians),

• The Revolt of 1857, the Indian Insurrection, and the First War of Independence (by Vinayak Damodar Savarkar).

Q15. Answer: (d) During the Second World War

The correct answer is During the Second World War.

Key Points

• The Bretton Woods Conference, officially known as the United Nations Monetary and Financial Conference, was a gathering of delegates from 44 nations that met from July 1 to 22, 1944 in Bretton Woods, New Hampshire (USA), to agree upon a series of new rules for international financial and monetary order after the conclusion of World War II.

• The two major accomplishments of the conference were the creation of the International Bank for Reconstruction and Development (IBRD) International Monetary Fund (IMF).

• Founded in 1944, the International Bank for Reconstruction and Development (IBRD) — soon called the World Bank — has expanded to a closely associated group of five development institutions.

Additional Information

• IDA (International Development Association) Established in 1960, IDA aims to reduce poverty by providing loans (called "credits") and grants for programs that boost economic growth, reduce inequalities, and improve people's living conditions.

• IDA complements the World Bank's original lending arm—the International Bank for Reconstruction and Development (IBRD).

• IBRD and IDA share the same staff and headquarters and evaluate projects with the same rigorous standards.

Q16. Answer: (a) SAIL

The correct answer is SAIL.

Key Points

• Steel Authority of India Limited (SAIL) is a government-owned steel producer.

• It is based in New Delhi, India.

• It is under the ownership of the Ministry of Steel, Government of India.

• Its annual turnover of INR 68,452 Crore (US$9.32 billion) for the financial year 2020–21.

• Its annual production of 16.30 million metric tons.

• SAIL is the 20th largest steel producer in the world and the largest in India.

• The hot metal production capacity of the company will further increase and is expected to reach a level of 50 million tonnes per annum by 2025.

Additional Information

• Hindustan Shipyard Limited is a shipyard located in Visakhapatnam on the east coast of India.

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• GAIL Limited is a government-owned natural gas explorer and producer responsible for natural gas processing and distribution in India. It is headquartered in GAIL Bhawan, New Delhi.

• Damodar Valley Corporation is a government-owned power generator that operates in the Damodar River area of West Bengal and Jharkhand states of India.

Q17. Answer: (d) 13 1/3 days

Given:

A = 50% as efficient as B

C = 1/2 of work done by (A + B)

C alone can do work in = 40 days

Calculation:

=> (A's one day work) : (B's one day work) = 50 : 100

=> (A's one day work) : (B's one day work) = 1 : 2

=> Let A's one day work be 'x' and B's one day work be '2x'.

=> According to the question,

=> C's one day work = 1/2 (x + 2x)

=> 3x/2 = 1/40

=> x = 1/20× 1/3=1/60

=> A's one day work be 1/60 and B's one day work be 1/30.

=> (A + B + C)'s one day work be = 1/60 + 1/30 + 1/40

=> (A + B + C)'s one day work be = (4+8+6)/240=18/240=3/40

=> A, B, C can complete the whole work in 40/3 days.

Therefore, A, B, and C can complete the whole work in 13 1/3 days.

Q18. Answer: (c) Portable Document Format

The correct answer is Portable Document Format.

Key Points

• The full form of the term PDF is Portable Document Format.

• It stores text and images and can be opened on any Operating System (OS), which, in turn, makes it easy to share and store.

• To elaborate further, the PDF was created back in the early '90s to realize the dream of a sustainable, paperless office.

• Developed by Adobe, a PDf file can capture all the elements of a printed document as an electronic image.

• With PostScript, every individual PDF file can retain the text, formatting, vectors, and even fonts of the original document.

Additional Information

• A computer is a digital electronic machine that can be programmed to carry out sequences of arithmetic or logical operations automatically.

• Modern computers can perform generic sets of operations known as programs.

• These programs enable computers to perform a wide range of tasks.

Q19. Answer: (c) IIT Madras

The correct answer is IIT Madras.

Key Points

• Shakti is the first Microprocessor In India which is designed and developed by the students of IIT (Indian Institute Of Technology) Chennai.

• It is built with a microchip that is manufactured or created at ISRO (Indian Space Research Organization) Chandigarh.

• According to IIT-M, the Shakti microprocessor can be used in low-power wireless systems and networking systems besides reducing reliance on imported microprocessors in the communication and defense sectors.

• The Shakti family of processors was fabricated at Semi-Conductor Laboratory (SCL), Indian Space Research Organizations (ISRO).

• According to IIT-M, the Shakti processor family targets clock speeds to suit various end-user application devices such as various consumer electronic devices, mobile computing devices, embedded low-power wireless systems, and networking systems.

Additional Information

• A microprocessor is a computer processor where the data processing logic and control are included on a single integrated circuit or a small number of integrated circuits.

• The microprocessor is a multipurpose, clock-driven, register-based, digital integrated circuit that accepts binary data as input,

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processes it according to instructions stored in its memory, and provides results (also in binary form) as output.

• Microprocessors contain both combinational logic and sequential digital logic.

Q20. Answer: (b) [figure]

Explanation:

All magazines are books.

Movies are nowhere related with magazines and books.

The correct Venn diagram representation is:

Hence, 'option 2' is the correct answer.

Q21. Answer: (d) Sochio

Explanation:

Family chart:

According to the statement:

Sochio is Sher's nephew.

Hence, 'option 4' is the correct answer.

Q22. Answer: (b) India

The correct answer is India.

Key Points

• With 146,385 words in its English-language edition, the Indian Constitution is the world's longest written constitution.

• The Indian Constitution, which has 448 articles divided into 25 parts and 12 schedules, is the longest written constitution of any sovereign state in the world.

• With only 3,814 words, the Constitution of Monaco is the smallest written constitution.

Additional Information

• There were 395 articles originally in the Constitution of India.

• Presently 448 articles are there in Constitution.

• The Indian Constitution was originally written in English.

• Prem Behari Narain Raizada wrote the Indian constitution by hand.

• Dr. BR Ambedkar is known as the father of the Indian Constitution.

• Indian Constitution was adopted by the Constituent Assembly of India on 26 November 1949 and became effective on 26 January 1950.

Q23. Answer: (b) SAFTA

The correct answer is SAFTA.

Key Points

• The South Asian Association for Regional Cooperation has a free trade agreement called the South Asian Free Trade Area (SAFTA) (SAARC).

• The SAARC Preferential Trading Arrangement was replaced by the agreement when it entered into force in 2006.

• An agreement from 2004 called the South Asian Free Trade Area established a free-trade zone with 1.6 billion inhabitants.

• With the aim of enhancing economic cooperation and integration, it is between Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka.

• The SAFTA's goal is to promote and elevate international agreements for medium- and long-term contracts.

Additional Information

• The founding members of ASEAN—Indonesia, Malaysia, the Philippines, Singapore, and Thailand—signed the ASEAN Declaration (also known as the Bangkok Declaration) on August 8, 1967, officially founding the Association of Southeast Asian Nations or ASEAN.

• LAIA the 1980 Montevideo Treaty has established on August 12th, displacing the Latin American Free Trade Association.

• NAFTA, a contentious trade agreement concluded in 1992, eventually removed the majority of tariffs and other trade restrictions on goods moving between the United States, Canada, and Mexico.

Q24. Answer: (c) Neither 1 nor 2

Explanation:

The given statements are:

1) Every prime is odd: 2 is a prime number and it is, even so, this statement is incorrect.

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2) Product of any two prime numbers is odd: Let's take two prime numbers 2 and 3, their product will be 6 which is an even number. Thus the statement is incorrect.

Since both the statements are incorrect.

Hence the correct answer is option 3.

Q25. Answer: (d) BrahMos

The correct answer is BrahMos.

Key Points

• The BrahMos is a medium-range stealth ramjet supersonic cruise missile.

• It can be launched from submarines, ships, aircraft, or land.

• It is the fastest supersonic cruise missile in the world.

• The supersonic cruise missile has been successfully operationalized in all three Services of the Indian Armed Forces.

• BrahMos is a supersonic cruise missile named after the Indian river the Brahmaputra and the Russian river Moskva.

Additional Information

• BRAHMOS Supersonic Cruise Missile:

• 3 times more velocity.

• 2.5 to 3 times more flight range.

• 3 to 4 times more seeker range.

• 9 times more kinetic energy.

Q26. Answer: (b) 125

Explanation:

From the given information:

An Army General wishes to arrange his 40125 soldiers in rows and columns in the form of a square.

We know that the arrangement of square is rows = columns,

So the number near 40125 is 40000 which can be written as 200×200.

Therefore 125 soldiers will be left after the arrangement of soldiers in a perfect square.

Hence the correct answer is option 2.

Q27. Answer: (b) 384

Explanation:

The pattern followed here is:

So the value of '?' is 384.

Hence, 'option 2' is the correct answer.

Q28. Answer: (c) $x^2 + (11 x y)/30 - y^2$

Given:

(1/5 x – 1/6 y) (5x + 6y)

Calculation:

=> By Distribution,

=> 1/5 x (5x + 6y) – 1/6 y (5x + 6y)

=> x^2+ 6/5 xy – 5/6 xy – y^2

=>x2 + (36-25)/30 xy – y^2

=> $x^2 – y^2$ + 11/30xy

Therefore, the simplified value of the expression is x2 – y2 + 11/30xy.

Q29. Answer: (b) [figure]

Explanation:

Mammals are the ones that nourish their younger ones with milk secreted by mammary glands.

Amphibians are the ones that can live both on land and water.

Turtle is neither a mammal nor an amphibian, rather it is a reptile.

Thus, they all belong to different classes.

The Venn diagram that best represents the relationship between Mammals, Amphibians, Turtles is as follows:

Hence, 'option 2' is the correct answer.

Q30. Answer: (a) Rs. 800

Given:

Difference between a 7% profit and a 6% loss while selling an item = Rs 104

Formula used:

SP = (100 + Profit) × (Cost Price)/100

SP = (100 – Loss) × CostPrice/100

Calculation:

=> Let the cost price be 'x'.

=> Selling price at 7% profit,

=> SP = (100 + 7) × x/100 = 107x/100

=> Selling price at 6% loss,

=> SP = (100 – 6) × x/100 = 94x/100

=> According to the question,

=> 107x/100 – 94x/100 = 104

=> 13x/100 = 104

=> x = (104× 100)/13=800

Therefore, the cost price of the item is Rs. 800

Q31. Answer: (c) 6

Given:

Number = 294

Calculation:

=> Firstly, we will find the factors of 294,

=> 294 = 2 × 3 × 7 × 7

=> While pairing the factors into 2, the left ones are 2 × 3

=> Number to be multiplied = 2 × 3 = 6

Therefore, the number by which 294 must be multiplied to make it a perfect square is 6

Q32. Answer: (b) 7

Explanation:

The pattern followed here is:

=> 7 × 6

=> 42 ÷ 2

=> 21

=> 3 × 8

=> 24 ÷ 2

=> 12

Similarly,

=> 7 × 2

=> 14 ÷ 2

=> 7

Hence, 'option 2' is the correct answer.

Q33. Answer: (c) Mahbub-ul-Haq

The correct answer is Mahbub-ul-Haq.

Key Points

• Dr. Mahbub-ul-Haq was the one who first presented the idea of human development.

• According to Dr. Haq, human growth expands people's options and enhances their quality of life.

• According to this theory, people are at the center of all progress.

• The inaugural Human Development Report unveiled a novel strategy for enhancing human welfare in 1990.

• The goal of human development, or the human development approach, is to increase the richness of human life rather than only the economy in which people live.

• Mahbub ul Haq was a politician, economist, and thinker of international development from Pakistan.

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• From 10 April 1985 to 28 January 1986 and again as a caretaker from June to December 1988, he was Pakistan's minister of finance.

Additional Information

• Amartya Kumar Sen is an Indian economist and philosopher, who since 1972 has taught and worked in the United Kingdom and the United States. He gets awarded the 1998 Nobel Prize in Economic Sciences for his contributions to welfare economics and social choice theory and for his interest in the problems of society's poorest members.

• The Dalai Lama was forced to flee his home of Tibet in 1959 after China sent troops into the region. He sought refuge in India and for six decades has been living in exile in Dharamsala along with some 10,000 Tibetans.

• Charles Robert Darwin was an English naturalist, geologist and biologist, best known for his contributions to evolutionary biology.

Q34. Answer: (a) 5 : 1

Given:

Number of mirrors = 12

Calculation:

=> For the ratio of broken mirrors to unbroken mirrors, the sum should be a factor of 12

=> For the first option, 5 : 1

=> 5 + 1 = 6, it is a factor of 12

=> For the second option, 3 : 2

=> 3 + 2 = 5, it is not a factor of 12

=> For the third option, 3 : 7

=> 3 + 7 = 10, it is not a factor of 12

=> For the fourth option, 4 : 7

=> 4 + 7 = 11, it is not a factor of 12

Therefore, the possible ratio of number of broken mirrors to unbroken mirrors is 5 : 1

Q35. Answer: (c) 0

Given:

cos(sec^(-1) x + cosec^(-1) x), |x| ≥ 1

Concept Used:

sec^(-1) x + cosec^(-1) x = π/2

cos(π/2)=0

Calculation:

=> cos(sec^(-1) x + cosec^(-1) x) =cos(π/2)

=> cos(π/2)=0

Therefore, the value of cos(sec-1 x + cosec-1 x) is 0.

Q36. Answer: (a) University of Pennsylvania

The correct answer is University of Pennsylvania.

Key Points

• The first electrical, programmable, general-purpose computer was called ENIAC.

• In 1945, it was completed.

• There were other computers that had similar features, but the ENIAC had all of them in one package.

• It could solve "a vast class of numerical problems" through reprogramming and was Turing-complete.

• ENIAC was conceptualized by J. Presper Eckert and John Mauchly.

• To build the ENIAC, roughly 17,500 vacuum tubes, 7,200 diodes, and miles of cable were utilised.

• The end result was ENIAC (Electronic Numerical Integrator And Computer), which was constructed between 1943 and 1945 and was the first large-scale computer to operate entirely at electronic speed.

• The first electronic computer was developed and constructed at the University of Pennsylvania (ENIAC).

Additional Information

• The University of Pennsylvania is a private Ivy League research university in Philadelphia, Pennsylvania.

• It was Established in 1740.

• It is the fourth-oldest institution of higher education in the United States and among the highest-ranked universities in the world.

Q37. Answer: (c) Kochi

The correct answer is Kochi.

Key Points

• Kochi was the center of the Indian spice trade for many centuries.

• It was known to the Yavanas (Greeks and Romans) as well as Jews, Syrians, Arabs, and Chinese since ancient times.

• Accounts by Italian explorers Nicolo Conti (15th century), and Fra Paoline in the 17th century say that it was called Kochchi.

• It is named after the river connecting the backwaters to the sea.

• After the arrival of the Portuguese, and later the British, the name Cochin stuck as the official appellation.

Additional Information

• Marakkar IV was at the forefront of resistance against the Portuguese invaders and is regarded as the first naval commander in India and was also an expert navigator. That is why they have dubbed him the "lion of the Arabian Sea".

• Arabian Sea:

• Due mostly to its proximity to the Red Sea and the Persian Gulf, the Arabian Sea is one of the busiest maritime channels in the world.

• Large tankers, the majority of which are used for transportation in the Arabian Sea, frequently end their journeys in East Asia, Europe, or the Americas.

Q38. Answer: (b) 2

Explanation:

The given statements are:

1) Every whole number is a natural number: We know that natural number are 1 to infinity whereas whole numbers are 0 to infinity so every whole number is not a natural number. Thus the statement is incorrect.

2) Every integer is a rational number: The set of rational numbers include integers as they are the number with no decimal point or fraction from the negative to positive numbers including zero. So this statement is correct.

3) Every rational number is an integer: We know that rational number are in the form of p/q and therefore they cannot be integers and thus this statement is incorrect.

Since only statement 2 is correct.

Hence the correct answer is option 2.

Q39. Answer: (b) New Delhi

The correct answer is New Delhi.

Key Points

• Wildlife Crime Control Bureau is a statutory body.

• It was established by the Government of India under the Ministry of Environment, Forest and Climate Change.

• Its motive is to combat organized wildlife crime.

• The Wild Life Amendment Act, 2006 provisions came in to force on 6th June 2007.

• It became operational in the year 2008.

• Its headquarter is at rikoot-1 Building, 2nd Floor, Bhikaji Cama Place, New Delhi-110066.

Additional Information

• Bhupendra Yadav, Ministry of Environment, Forest and Climate Change is the responsible minister of WCCB.

• Tilotama Varma is the Agency executive of WCCB.

• Seva kurma:

• It launched WCCB.

• Its duration was from to 15th December 2016 to 30th January 2017.

• The motive is to focus on the poaching, transportation, and illegal trade of live turtles and tortoises.

• The operation resulted in the seizure of more than 15,912 live turtles and the arrest of 55 suspects.

Q40. Answer: (c) FKEKEFFEKEFK

Explanation:

The pattern followed here is:

OQIOIQOQQIOQ is written as OIQOQQIOQOQI

Similarly, EFKFKEKEFFEK will be written as:

Hence, 'option 3' is the correct answer.

Q41. Answer: (c) January 1935

The correct answer is January 1935.

Key Points

• The Indian National Science Academy was established in January 1935.

• Its object of promoting science in India and harnessing scientific knowledge for the cause of humanity and national welfare.

• The foundation of the Academy, earlier known as the National Institute of Sciences of India (NISI),.

• It was the outcome of joint endeavors of several organizations and individuals and the Indian Science Congress Association (ISCA) played a leading role in this regard.

Additional Information

• The Indian National Science Academy is a national academy.

• It is situated in New Delhi for Indian scientists in all branches of science and technology.

• In August 2019, Dr. Chandrima Shaha was appointed as the president of the Indian National Science Academy.

• She is the first woman to head the INSA.

Q42. Answer: (b) 100

Given:

40 is subtracted from a number, it reduces to 60%

Calculation:

=> Let the number be x.

=> According to the question,

=> x-40=60% of x

=> x-40=60/100× x=3x/5

=> x-3x/5=40

=> (5x-3x)/5=40

=> x=(40× 5)/2=100

Therefore, the required number is 100.

Q43. Answer: (b) Small intestine

The correct answer is Small intestine.

Key Points

• The villi of the small intestine project into the intestinal cavity.

• It greatly increases the surface area for food absorption and adds digestive secretions.

• The villi number about 10 to 40 per square millimeter (6,000 to 25,000 per square inch) of tissue.

• Small Intestine:

• The small intestine has three parts:

• the duodenum,jejunum, and ileum.

• It helps to further digest food coming from the stomach.

• It absorbs nutrients (vitamins, minerals, carbohydrates, fats, proteins) and water from food so they can be used by the body.

• The small intestine is part of the digestive system.

Additional Information

• The long, tube-like organ is connected to the small intestine at one end and the anus at the other. The large intestine has four parts: the cecum, colon, rectum, and anal canal. Partly digested food moves through the cecum into the colon, where water and some nutrients, and electrolytes are removed.

• The liver is your largest internal organ. About the size of a football, it's located mainly in the upper right portion of your abdomen — beneath the diaphragm and above your stomach. A small portion extends into the upper left quadrant. The liver is an organ about the size of a football.

• The stomach is a J-shaped organ that digests food. It produces enzymes (substances that create chemical reactions) and acids (digestive juices). This mix of enzymes and digestive juices breaks down food so it can pass to your small intestine.

Q44. Answer: (b) Isaac Newton

The correct answer is Isaac Newton.

Key Points

• Dispersion of light:

• The splitting of white light, when it passes through a glass prism into its constituent spectrum is known as the dispersion of light.

• White light consists of seven colors and Isaac Newton passed the white light through a prism and got seven different colors.

• Sunlight splits into 7 colors – Violet, Indigo, Blue, Green, Yellow, Orange, and Red (VIBGYOR).

• A rainbow is a natural phenomenon showing the dispersion of light.

Additional Information

• Sir Isaac Newton was an English mathematician, physicist, astronomer, alchemist, theologian, and author, widely recognised as one of the greatest mathematicians and physicists of all time and among the most influential scientists.

• Isaac Newton is best known for his theory about the law of gravity, but his “Principia Mathematica” (1686) with its three laws of motion greatly influenced the Enlightenment in Europe.

Q45. Answer: (b) Straight angle

Calculation:

The angle formed by the pages of a fully open book, especially with just a few pages, is theoretically 180 degrees.

This is because the pages spread out flat, with the left and right pages each extending directly out from the spine of the book, forming a straight line or angle.

Q46. Answer: (d) Comics

Explanation:

The other three terms - Movies, Animation, Documentaries are for watching whereas comics are reading material. So, comics is different from the rest.

Comics is the odd one out.

Hence, 'option 4' is the correct answer.

Q47. Answer: (c) Lord Shiva

The correct answer is Lord Shiva.

Key Points

• Elephanta Caves are a UNESCO World Heritage Site and a collection of cave temples predominantly dedicated to the Hindu god Shiva.

• The 'City of Caves', on an island in the Sea of Oman close to Bombay, contains a collection of rock art linked to the cult of Shiva.

• The Elephanta Caves are located in Western India on Elephanta Island (otherwise known as the Island of Gharapuri), which features two hillocks separated by a narrow valley.

• The Elephanta Caves are considered to be a contribution by the Kalachuris and the latest rules to contribute were the Rashtrakutas.

Additional Information

• There are 40 World Heritage Sites located in India.

• These include 32 cultural sites, 7 natural sites, and 1 mixed-criteria site.

• Some of them: TajMahal, Ajanta, Humpi, Agra fort, Elephanta caves, etc.

Q48. Answer: (c) On 26^(th) November 1949

The correct answer is On 26th November 1949.

Key Points

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

• The Constitution provides for a Parliamentary form of government which is federal in structure with certain unitary features.

• The constitutional head of the Executive of the Union is the President.

• As per Article 79 of the Constitution of India, the council of the Parliament of the Union consists of the President and two Houses

• Council of States (Rajya Sabha).

• House of the People (Lok Sabha).

• Article 74(1) of the Constitution provides that there shall be a Council of Ministers with the Prime Minister as its head to aid and advise the President, who shall exercise his/her functions in accordance with the advice.

• The real executive power is thus vested in the Council of Ministers with the Prime Minister as its head.

Additional Information

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

• The document lays down the framework that demarcates the fundamental political code, structure, procedures, powers, and duties of government institutions and sets out fundamental rights, directive principles, and the duties of citizens.

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Q49. Answer: (a) Daughter's Daughter

Explanation:

Family chart:

According to the statement:

X is daughter's daughter of A.

Hence, 'option 1' is the correct answer.

Q50. Answer: (d) 77

Explanation:

The pattern followed here is:

=> (6 + 7) × 9

=> 13 × 9

=> 117

Similarly,

=> (9 + 2) × 7

=> 11 × 7

=> 77

So the value of '?' is 77.

Hence, 'option 4' is the correct answer.

Q51. Answer: (d) Lumbini

The correct answer is Lumbini.

Key Points

• Gautama Buddha:

• He was born Siddhartha Gautama circa 563 BCE.

• He was born in a royal family in Lumbini which is situated near the Indo-Nepal border.

• His family belonged to the Sakya clan which ruled from Kapilvastu, Lumbini.

• He was the founder of Buddhism and is revered by Buddhists as a fully enlightened being who taught a path to Nirvana, freedom from ignorance, craving, rebirth, and suffering.

Additional Information

• At the age of 29, Gautama left home and rejected his life of riches, and embraced a lifestyle of asceticism or extreme self-discipline.

• After 49 consecutive days of meditation, Gautam attained Bodhi (enlightenment) under a pipal tree at Bodhgaya, Bihar.

• Buddha gave his first sermon in the village of Sarnath, near Varanasi in Uttar Pradesh.

• This event is known as Dharma Chakra Pravartana (turning of the wheel of law).

• He died at the age of 80 in 483 BCE at Kushinagar, Uttar Pradesh.

• The event is known as Mahaparinibban or Mahaparinirvana.

• He is believed to be the eighth of the ten incarnations of Lord Vishnu (Dasavtar).

Q52. Answer: (d) 63 litres

Given:

Percentage of orange juice in first drink = 80%

Percentage of orange juice in second drink = 25%

Percentage of orange juice in mixture= 60%

Amount of second drink = 36 litres

Calculation:

=> Let x litres of first drink is mixed with y litres of second drink.

=> By using alligation,

=> x / y = (60% – 25%) / (80% – 60%)

=> x / 36 = 35% / 20%

=> x/36 = 35/20

=> x = 7/4 x 36

=> x = 7 x 9

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=> x = 63 litres

Therefore, 63 litres of juice is required for the 80% orange juice drink.

Q53. Answer: (d) π/4

Given:

sin^(-1)(1/(√2))

Concept Used:

sin(π/4)=1/(√2)

sin^(-1) (sinθ)=θ

Calculation:

=> sin-1(1/(√2)) = sin^(-1) (sin π/4)

=> π/4

Therefore, the value of sin-1(1/(√2)) is π/4.

Q54. Answer: (b) Bhagwan Mahavir Wildlife Sanctuary

The correct answer is Bhagwan Mahavir Wildlife Sanctuary.

Key Points

• Bhagwan Mahavir Wildlife Sanctuary is located in Goa.

• Bhagwan Mahavir Wildlife Sanctuary is located in Mollem town.

• It is one of the largest wildlife sanctuaries in Goa.

• Originally known as the Mollem Game Sanctuary It was declared a wildlife sanctuary in 1969 and thence renamed the Bhagwan Mahavir Wildlife Sanctuary.

• The sanctuary is heavily forested and contains tropical evergreen forests, semi-evergreen forests, and moist deciduous forests.

Additional Information

Wildlife Sanctuary	State
Chinnar Wildlife Sanctuary	Kerala
Interview Island Wildlife Sanctuary	The Andaman Islands, Andaman and Nicobar Islands
Dandeli Wildlife Sanctuary	Karnataka

Q55. Answer: (b) 175

Given:

2/5 of 1/4 of 3/7 of a number is 15

Calculation:

=> Let the number be x.

=> 2/5× 1/4× 3/7× x=15

=> 3/70× x=15

=> x=5× 70=350

=> Half of x i.e. 350 = 350× 1/2=175

Therefore, half of the number 350 is 175.

Q56. Answer: (d) 551.25

Given:

Debt amount = Rs 1025

Time = 2 years

Rate of interest = 5% per annum

Concept Used:

Amount = P(1+r/100)^t

Calculation:

=> Let the annual payment be Rs x.

=> Amount for first year + Amount for second year = Rs 1025

=> x/((1+5/100))+x/((1+5/100)²)=1025

=> x/(105/100)+x/(105/100× 105/100)=1025

=> 20x/21+400x/441=1025

=> 20x/21+400x/441=1025

=> 420x + 400x = 1025 × 441

=> 820x = 452,025

=> x = 452025/820=551.25

Therefore, the amount of each annual payment is Rs 551.25

Q57. Answer: (d) Dharmapala

The correct answer is Dharmapala.

Key Points

• Vikramashila was one of the three most important Buddhist monasteries in India during the Pala Empire, along with Nalanda and Odantapuri.

• It was established in response to a supposed decline in the quality of scholarship at Nalanda.

• Vikramashila University is located in Bihar.

• It is founded by Dharmapala.

Additional Information

• Ballal Sen in vernacular literature was the second ruler of the Sena dynasty of the Bengal region of the Indian subcontinent. He was the son and successor of Vijaya Sena and ended the Pala Empire by defeating Govindapala.

• Gopala was the founder of the Pala dynasty of Bihar and Bengal regions of the Indian Subcontinent. The last morpheme of his name Pala means "protector" and was used as an ending for the names of all the Pala monarchs.

• The dynasty's founder of Sena dynasty was Samanta Sena. After him came Hemanta Sena who usurped power and styled himself, king, in 1095 AD.

Q58. Answer: (b) 130°

Given:

An angle complementary to 15° and supplementary to 125°

Concept Used:

Complementary angles = when their sum is equal to 90°

Supplementary angles = when their sum is equal to 180°

Calculation:

=> Let the complementary angle be x.

=> So, x + 15º = 90º

=> x = 90 – 15 = 75º

=> Let the supplementary angle be y.

=> So, y + 125º = 180º

=> y = 180 – 125 = 55º

=> Sum of x and y = 75 + 55 = 130º

Therefore, the sum of the angle complementary to 15° and the angle supplementary to 125° is 130°

Q59. Answer: (b) Aldehydes

The correct answer is Aldehydes.

Key Points

• In chemistry, the suffix -al is the IUPAC nomenclature used in organic chemistry to form names of aldehydes containing the -(CO)H group in the systematic form.

• The International Union of Pure and Applied Chemistry (IUPAC) is the international body that represents chemistry and related sciences and technologies.

• Aldehydes are carbonyl compounds found ubiquitously in the environment, derived from both natural and anthropogenic sources. As the aldehydes are reactive species.

• They are generally toxic to the body.

• The general formula of an alkyl group is CnH2n+1 and hence general formula for aldehyde will be CnH2n+1CHO provided n = 0, 1, 2, 3, etc.

Additional Information

• Rules of nomenclature of IUPAC:

• Find and name the longest continuous carbon chain.

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• Identify and name groups attached to this chain.
• Number the chain consecutively, starting at the end nearest a substituent group.
• Designate the location of each substituent group by an appropriate number and name.
• Then write the name of the compound according to a sequence.

Q60. Answer: (d) 1958

The correct answer is 1958.

Key Points

• The Defence Research and Development Organisation is the premier agency.
• It comes under the Department of Defence Research and Development in the Ministry of Defence of the Government of India.
• It is charged with the military's research and development, headquartered in Delhi, India.
• DRDO was formed in 1958.
• It is formed by the amalgamation of the then already functioning Technical Development Establishment (TDEs) of the Indian Army and the Directorate of Technical Development & Production (DTDP) with the Defence Science Organisation (DSO).
• Its headquarter is DRDO Bhavan, New Delhi.

Additional Information

• There are 30,000 (5,000 scientists) employees working in DRDO.
• The annual budget of DRDO is Rs. 11,375.50 crores (US$1.4 billion) for the year 2021–22.
• Samir kamat is the Secretary of the Department of Defence R&D and the Chairman of India's Defence Research and Development Organisation (DRDO).

Q61. Answer: (c) Genus

The correct answer is Genus.

Key Points

• Biologists, such as Ernst Haeckel, Robert Whittaker, and Carl Woese endeavored to divide all living species into broad divisions called kingdoms.
• By naming the sub-groups at several levels—kingdom, phylum or division, class, order, family, genus, and species—further classification is accomplished.
• The Taxonomic hierarchy is another name for this.
• The practice of classifying distinct creatures into progressively higher biological categories, either in a decreasing or an increasing order, from kingdoms to species and vice versa, is known as a taxonomic hierarchy.

Additional Information

• Kingdom:- The highest level of classification is a kingdom. The classification of living things is done into five kingdoms: Animalia, Plantae, Fungi, Protista, and Monera.
• Phylum:- A phylum is a group of creatures that are distinguished from one another by a common set of traits. The term "division" has been employed in place of "phylum" in the study of plants, prior to the introduction of phyla.
• Class:- classes were the taxonomic hierarchy's most broad rank. Kingdom The game Animalia has 108 classes. Order is made up of one or more families that are similar to one another.
• Family:- The term "family" refers to a group of genera with certain commonalities.
• Genus:- A genus is made up of a number of related species. GA group of creatures that are similar in size, form, and reproductive characteristics is referred to as a species. There are about 8.7 million different species on earth.

Q62. Answer: (b) Two

The correct answer is Two.

Key Points

• The two moons of Mars are Phobos and Deimos.
• They are irregular in shape.
• Both were discovered by American astronomer Asaph Hall in August 1877.
• They are named after the Greek mythological twin characters Phobos (fear and panic) and Deimos (terror and dread) who accompanied their father Ares into battle.
• Ares, god of war, was known to the Romans as Mars.

Additional Information

• Mars:
• Mars is the fourth planet from the Sun and the second-smallest planet in the Solar System, being larger than only Mercury.

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• In the English language, Mars is named for the Roman god of war.
• Temperatures on Mars average about -81 degrees F.
• Mars is also known as the Red Planet.
• Mars is named after the Roman god of war.
• Mars has 2 moons called Deimos and Phobos.
• Mars is the 4th planet from the sun.
• Mars is smaller than Earth with a diameter of 4217 miles.

Q63. Answer: (a) Prison

Explanation:
King : Palace
=> Palace is the place where king lives.
Similarly, Convict : ?
=> Prison is the place where convict lives.
Hence, 'option 1' is the correct answer.

Q64. Answer: (a) Chenda

The correct answer is Chenda.
Key Points
• The nagara or naghara is a drum used in the Middle East.
• There are several types of naghara, which are considered to be the lead instrument in folk ceremonies and weddings.
• Nagada (Indian Drum) is a percussion instrument used for its rhythmic sounds.
• Nakara is a festival instrument mostly used in South Indian Hindu temples.
• The size may vary and this instrument may be kept near the entrance of the South Indian Hindu temples.
Additional Information
• Been:
• The Been is also called pungi.
• It is a simple folk instrument traditionally played by snake charmers.
• It is made of a small gourd with a blowing hole at the top and two attached pipes at the bottom.
• Its sharp, penetrating sound is produced by reeds for each pipe inside the gourd.
• Uddukai:
• The udukkai is a member of the family of membranophone percussion instruments of India and Nepal.
• It is used in folk music and prayers in Tamil Nadu.
• Its shape is similar to other Indian hourglass drums, having a small snare stretched over one side.
• It is made of wood or brass and is very portable.
• It originated in Tamil Nadu as well.
• Damru:
• A damaru is a small two-headed drum, used in Hinduism and Tibetan Buddhism.
• In Hinduism, the damaru is known as the instrument of the deity Shiva, associated with Tantric traditions.
• It is said to be created by Shiva to produce spiritual sounds by which the whole universe has been created and regulated.

Q65. Answer: (d) 72

Explanation:
Logic : Number of sides of outer figure × Number of sides of inner figure × Number inside the figure = Number outside the figure
=> 3 × 4 × 3 = 36
=> 4 × 4 × 5 = 80
Similarly,
=> 6 × 3 × 4 = 72
So the value of '?' is 72.
Hence, 'option 4' is the correct answer.

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Q66. Answer: (d) TB > GB > MB > KB

The correct answer is TB > GB > MB > KB.

Key Points

• One gigabyte in the memory context of data storage comprises 1024 MB (megabyte) or 1 million bytes.

• In SI units, it is written as 10^9. This is the most commonly used unit of storage in modern times.

• Storage is a mechanism that enables a computer to retain data, either temporarily or permanently.

• Unit Conversion of Storage:

• 4 bit = 1 Nibble

• 8 bit = 1 byte

• 1 KB (kilobyte) = 1024 byte

• 1 MB (megabyte) = 1024 KB

• 1 GB (gigabyte) = 1024 MB

• 1 TB (terabyte) = 1024 GB

• 1 PB (petabyte) = 1024 TB

• 1 XB (Exabyte) = 1024 PB

• 1 ZB (zettabyte) = 1024 XB

• 1 YB (yottabyte) = 1024 ZB

Additional Information

• A computer is a digital electronic machine that can be programmed to carry out sequences of arithmetic or logical operations automatically.

• Modern computers can perform generic sets of operations known as programs.

• These programs enable computers to perform a wide range of tasks.

Q67. Answer: (c) AO Hume

The correct answer is AO Hume.

Key Points

• On December 28, 1885, the Indian National Congress was founded in Bombay by Scottish resident "Alan Octavian Hume".

• The first president of the Congress was "Womesh Chandra Bonnerjee".

• The youngest president of the Congress was "Abul Kalam Azad", who presided over the special session of Delhi in 1923.

• The 1888 session of the Congress was presided over by the first Englishman "George Yule".

• "Motilal Nehru" presided over the 1919 Amritsar session of Congress.

Additional Information

• Gopal Krishna Gokhale was an Indian 'moderate' political leader and a social reformer during the Indian independence movement. Gokhale was a senior leader of the Indian National Congress and the founder of the Servants of India Society.

• Mohandas Karamchand Gandhi was an Indian lawyer, anti-colonial nationalist, and political ethicist who employed nonviolent resistance to lead the successful campaign for India's independence from British rule and to later inspire movements for civil rights and freedom across the world.

• Womesh Chandra Bannerjee was an Indian barrister. He was the co-founder and first president of the Indian National Congress. Born in 1844 in Calcutta, he studied at the Oriental Seminary and the Hindu School.

Q68. Answer: (a) Mean = Mode

given:

The data set is 1, 2, 3, 5, 2, 3, 4, 6, 6, 8, 3, 4, 5

Concept Used:

Mean = Sum of total observations ÷ Total number of observations

Mode = Most frequently occurring observation (by first arranging them in ascending order)

Median = n/2 th term, when n is even

Median = (n+1)/2 th term, when n is odd

Calculation:

=> Arranging the data in ascending order: 1,2,2,3,3,3,4,4,5,5,6,6,8

=> Mean = (1+2+2+3+3+3+4+4+5+5+6+6+8)/13=52/13=4

=> Mode = 3 (occurring 3 times)

=> Median = (13+1)/2=14/2=7th term i.e. 4

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i.e. mean = 4, median = 4, mode = 3

Option (1): Mean = Mode = 4 ≠ 3 (not true)

Option (2): Mean = Median = 4 = 4 (true)

Option (3): Mode < Mean = 3 < 4 (true)

Option (4): Median > Mode = 4 > 3 (true)

Since we have to find the Incorrect option and option (1) is incorrect.

So, Option (1) is the correct answer.

Q69. Answer: (d) 5 permanent members and 10 non-permanent members

The correct answer is 5 permanent members and 10 non-permanent members.

Key Points

• The United Nations Security Council is one of the UN's most important bodies.

• It is in charge of maintaining international peace and security in the first place.

• 5 permanent members and 10 non-permanent members are in the Security Council of the UN as of October 2020.

• India has been elected as a non-permanent member of the UN Security Council 8 times till Oct 2020.

• India has been elected as a non-permanent member of the Council for the years 1950-1951, 1967-1968, 1972-1973, 1977-1978, 1984-1985, 1991-1992, 2011-2012, and 2021-2022.

• India assumed the presidency of the United Nations Security Council (UNSC) for one month in August 2021.

• The next month of India's presidency of the Council will be December 2022.

Additional Information

• The United Nations Security Council met for the first time in church House in Westminster, London, in January 17, 1946.

• The Security Council has had a permanent home at the United Nations Headquarters in New York City since its first meeting.

• Permanent members:

• China.

• France.

• Russia.

• The United Kingdom.

• The United States.

• Non-permanent members:

• Estonia.

• India.

• Ireland.

• Kenya.

• Mexico.

• Niger.

• Norway.

• Saint Vincent and the Grenadines.

• Tunisia.

• Vietnam.

Q70. Answer: (a) 1 : 12

Explanation:

When the minute hand of a clock covers 360 degrees in 60 min, the hour hand of a clock covers only 30 degrees in 60 min.

Thus, the ratio of the velocities of the hour hand and minute hand of a clock = 30/360 = 1:12

Hence, 'option 1' is the correct answer.

Q71. Answer: (c) 20

Given:

Dimensions of an ice compartment; L = 8 cm, B = 5 cm, H = 4 cm

Dimensions of an ice cube; l = b = h = 2 cm

Concept Used:

Volume of cuboid = L × B × H

Volume of cube = $Side^3$

Number of ice cubes = Volume of cuboid ÷ Volume of cube

Calculation:

=> Volume of cuboid = 8 × 5 × 4 = 160 cm^3

=> Volume of cube = 2^3 = 8 cm^3

=> Required number of ice cubes =160/8=20

Therefore, the ice compartment can hold 20 such ice cubes.

Q72. Answer: (a) 12.50%

Given:

Marked Price = 50% above the CP

Profit percentage = 25%

Discount on MP = 25%

Concept Used:

Profit Percentage = Profit/CP× 100

Calculation:

=> Let the cost price be Rs 100.

=> Marked price of all the goods = 100 + 50% of 100

=> MP for all the goods = 100+50/100× 100=100+50=150 Rs

=> Selling Price = 150 – 25% of 150

=> Selling Price = 150-25/100× 150=150-37.5=112.5 Rs

=> Profit = SP – CP

=> Profit = 112.5 – 100 = Rs 12.5

=> Profit Percentage = 12.5/100× 100=12.5%

Therefore, the final profit percentage made on selling all the goods is 12.5%.

Q73. Answer: (a) A = 5, B = 2

Given:

BA × B3 = 57A

Calculation:

=> As B is in 10s place,

=> (10B + A) × (10B + 3) = (57 × 10) + A

=> $100B^2$ + 10 AB + 30B + 3A = 570 + A

=> 100B2 + 10AB + 30B + 3A – A = 570

=> 100B2 + 10AB+ 30B + 2A = 570

=> 2A = 570 – 100B2 – 10AB – 30B

=> 10/2A, As 10 divides RHS,

=> A = 5 or A = 0

=> For A = 0,

=> 100B2 + 30B = 570

=> $10B^2$ + 3B = 57

=> No value of B satisfies the equation.

=> For A = 5,

=> $100B^2$ + 80B + 10 = 570

=> $10B^2$ + 8B = 56

=> $5B^2$ + 4B = 28

=> 5B2 + 4B – 28 = 0

=> 5B2 + 14B – 10B – 28 = 0

=> B (5B + 14) – 2 (5B + 14) = 0

=> (B – 2) (5B + 14) = 0

=> B = 2 or B = (–14)/5

=> As B can't be negative, so

=> B = 2

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Therefore, the value of A is 5 and B is 2

Q74. Answer: (a) 3 h 20 min

Given:

Uniform speed of train = 75 km/h

Distance to cover = 250 km

Concept Used:

Speed = Distance ÷ Time

Calculation:

=> Putting the values in the formula, we get

=> Required time to cover 250 km = Distance/Speed=250/75

=> Required time to cover 250 km = 10/3=31/3hrs

=> Now, convert 1/3 hours into minutes by multiplying it with 60,

=> 31/3hrs=3hrs 1/3× 60=3hrs 20 min

Therefore, the time required by the train to cover a distance of 250 km is 3 h 20 min.

Q75. Answer: (d) CACOCACO

Explanation:

The pattern followed here is:

DUFUDFDD is written as FUDFDDDU

Similarly, COCACOCA will be written as:

Hence, 'option 4' is the correct answer.

Q76. Answer: (b) Cinchona

The correct answer is Cinchona.

Key Points

• Cinchona is a genus of flowering plants in the family Rubiaceae containing at least 23 species of trees and shrubs.

• All are native to the tropical Andean forests of western South America.

• Cinchona is used for increasing appetite; promoting the release of digestive juices; and treating bloating, fullness, and other stomach problems.

• It is also used for blood vessel disorders including hemorrhoids, varicose veins, and leg cramps.

• Cinchona contains quinine.

• Quinine is used alone or with other medications to treat malaria (a serious or life-threatening illness that is spread by mosquitos in certain parts of the world).

Additional Information

• Eucalyptus is a fast-growing evergreen tree native to Australia. As an ingredient in many products, it is used to reduce symptoms of coughs, colds, and congestion. It also features creams and ointments aimed at relieving muscle and joint pain.

• Basil is a culinary herb of the family Lamiaceae. It is a tender plant and is used in cuisines worldwide. In Western cuisine, the generic term "basil" refers to the variety also known as sweet basil or Genovese basil.

• A dandelion is a plant with yellow flowers. Taraxacum officinale is the most common variety of this plant, and it grows in many parts of the world. Botanists consider dandelions to be herbs. People use the leaves, stems, flowers, and roots of the dandelion for medicinal purposes.

Q77. Answer: (a) 60254

Given:

Digit in the hundred's place = 2

Digit in the unit's place = Twice the digit in the hundred's place

Digit at thousands = 0

Digit in the ten thousand's place = Sum of the digit in hundred's place and the digit in the unit's place

Digit in ten's place = Digit in the ten thousand's place – 1

Calculation:

=> Digit at hundred's place = 2

=> Digit at unit's place = 2 × 2 = 4

=> Digit at thousands = 0

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=> Digit at ten thousand's place = 2 + 4 = 6
=> Digit at ten's place = 6 – 1 = 5
Therefore, the number is 60254.

Q78. Answer: (d) 40°, 112°, 28°

Given:
Angle A = 12º more than the measure of Angle C
Angle B = 4 times as the measure of Angle C
Concept Used:
Sum of all angles of the triangle = 180º
Calculation:
=> Let the angle C be x.
=> So, Angle A = x + 12
=> Angle B = 4x
=> According to the formula, we get
=> x + x + 12 + 4x = 180
=> 6x = 180 – 12 = 168
=> x = 168/6=28
=> Angle A = 28 + 12 = 40º
=> Angle B = 4 × 28 = 112º
=> Angle C = 28º
Therefore, the measures of the angles of a triangle are 40º, 112º and 28º.

Q79. Answer: (d) 7.5 km

Given:
Speed of first man = 3 km/h
Speed of second man = 3.75 km/h
Latter arrives half an hour before the former.
Concept Used:
Speed = Distance ÷ Time
Calculation:
Let the distance covered be x km.
Time taken by the first man = x/3 hrs
Time taken by the second man = x/3.75 hrs
According to the question,
=> x/3-x/3.75=1/2
=> (3.75x-3x)/11.25=1/2
=> 0.75x = 5.625
=> x=5.625/0.75=7.5
Therefore, the distance covered is 7.5 km.

Q80. Answer: (b) 69

Given:
Number = 1300
Calculation:
=> First, we will apply long division method on 1300,
=> Quotient = 36, Remainder = 4
=> From this, we get to know that 1300 is greater than $(36)^2$,
=> $36^2 < 1300 < 37^2$
=> 1296 < 1300 < 1369
=> Hence, to add some particular number in 1300 to make it a perfect square,
=> 1369 – 1300 = 69
Therefore, the least number which must be added to 1300 to get a perfect square is 69.

Q81. Answer: (c) Neither conclusions 1 nor 2 follows

Explanation:

Statements:

All leaves are in plant.

All plants are in garden.

Possible Venn diagram:

Conclusions:

1. All gardens have leaves → False (As All plants are garden and there is no direct relation is given between them)

2. All garden have plant → False (As All leaves are plant and all plant are garden we can not assume directly that all Garden have plants)

Hence, the correct answer is " Option 3 ".

Q82. Answer: (a) Abhinandan Varthaman

The correct answer is Abhinandan Varthaman.

Key Points

• Abhinandan Varthaman is an Indian Air Force fighter pilot.

• He was involved in chasing away Pakistani jets that entered India on 27 February 2019.

• His plane was shot down inside Pakistan and he was held captive there for 60 hours after an aerial dogfight.

• He was awarded Vir Chakra by the Indian government for the alleged downing of a PAF F-16 with his MiG-21 Bison, though his claim has been rejected by Pakistan.

Additional Information

• Abhinandan was born on June 21, 1983, in Tamil Nadu, India.

• His father is a retired Indian Air Force (IAF) Air Marshal (OF-8) and his mother is a doctor.

• Abhinandan received many awards: Vir Chakra, Wound Medal, General Service Medal, Samanya Seva Medal, Special Service Medal, Siachen Glacier Medal, Sainya Seva Medal, high Altitude Service Medal, 9 years Long Service Medal.

Q83. Answer: (b) 21%

Given:

Cheating percentage = 10%

Concept Used:

Profit Percentage = $((100+\text{Profit}\%)^2)/100-100$

Calculation:

=> Putting the values in the formula,

=> Final Gain Percentage = $((100+10)^2)/100-100$

=> Final Gain Percentage = $(110\times 110)/100-100$

=> Final Gain Percentage = 121 – 100 = 21%

Therefore, the gain percentage till the time shopkeeper got caught is 21%.

Q84. Answer: (d) Prasoon Joshi

The correct answer is Prasoon Joshi.

Key Points

• Prasoon Joshi replaced Pahlaj Nihalani as Censor Board Chief in 2017.

• Pahlaj Nihalani, who turned the censor board into a precinct of serial controversy, has been sacked as the organization's chairman.

• His successor is famous lyricist-adman Prasoon Joshi, while actor Vidya Balan joins the board.

• The Central Board of Film Certification is a statutory film-certification body in the Ministry of Information and Broadcasting of the Government of India.

• It is tasked with "regulating the public exhibition of films under the provisions of the Cinematograph Act 1952."

Additional Information

• Sheila Dikshit was an Indian politician. The longest-serving Chief Minister of Delhi, as well as the longest-serving female chief minister of any Indian state, she served for a period of 15 years beginning in 1998.

• Jaya Bachchan is an Indian actress and politician. She is a member of Parliament in the Rajya Sabha from the Samajwadi Party, serving four terms since 2004.

• Anupam Kher is an Indian actor and the former Chairman of the Film and Television Institute of India. He has appeared in over

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500 films predominantly in Hindi films and many plays. He is a recipient of two National Film Awards and eight Filmfare Awards.

Q85. Answer: (c) 12, 24, 36

Given:

Ratio of three numbers = 1 : 2 : 3

HCF of three numbers = 12

Calculation:

=> Let the three numbers be x, 2x and 3x.

=> As given HCF is 12, so x = 12

=> Putting the value, we get

=> First number = x = 12

=> Second number = 2x = 2 × 12 = 24

=> Third number = 3x = 3 × 12 = 36

Therefore, the respective three numbers are 12, 24, and 36.

Q86. Answer: (a) 20%

Given:

Calculation:

=> Production by company A in the year 2015 = 5

=> Production by company A in the year 2016 = 4

=> Decrease in production = 5 – 4 = 1

=> Percentage decrease in the production = 1/5× 100=20%

Therefore, the percentage decrease in the production for the company A from 2015 to 2016 is 20%.

Q87. Answer: (d) 40°

Given:

Concept Used:

Complete angle of a circle = 360º

Calculation:

=> Percentage share for farmers = 11%

=> Central angle formed for the sector of farmer = 11% of 360º

=> Central angle formed for the sector of farmer = 11/100× 360≈ 40 º

Therefore, for the farmer sector, the approximate measure of the central angle is 40º.

Q88. Answer: (d) B1 and B3

Given:

Concept Used:

Average = Total sum of all values ÷ Total number of values

Calculation:

=> Total production of handbags in 2016 across all the branches = 30 + 40 + 30 + 37.5 + 25

=> Total production of handbags in 2016 across all the branches = 162.5

=> Average of total production of handbags in 2016 = 162.5/5=32.5

=> Nearest branches to the average production = B1 and B3

Therefore, in branch B1 and B3 the production of handbags in 2016 was nearest to the average of total production of handbags across all branches for the year 2016.

Q89. Answer: (b) 31 : 35

Given:

Calculation:

=> Total sales of Shop C in both the years = 75 + 80 = 155

=> Total sales of Shop E in both the years = 85 + 90 = 175

=> Ratio = 155/175=31/35=31:35

Therefore, the ratio of the total sales of Shop C for both the years to the total sales of Shop E for both the years is 31 : 35.

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Q90. Answer: (a) Violin

Explanation:

Violin is the odd one out.

The other three terms - Flute, Saxophone, Mouth organ are wind musical instruments while Violin is not.

Violin is a string based musical instrument. So it is different from rest.

Hence, 'option 1' is the correct answer.

Q91. Answer: (c) [figure]

Explanation:

From the given information:

35 out of 40 = 88% (approximate)

So we have to choose the figure which depicts 88% area.

We consider the given options:

Option 1) It shows 100% area.

Option 2) It shows 60% area.

Option 3) It shows nearly 88% area.

Option 4) It shows 75% area.

Hence the correct answer is option 3.

Q92. Answer: (d) 53

Explanation:

The logic of the given series can be explained as:

=> 5 × 2 + 1 = 11

=> 11 × 2 + 2 = 24

=> 24 × 2 + 3 = 51

=> 51 × 2 + 4 = 106

=> 106 × 2 + 5 = 217

Thus, 53 does not belong to the following series.

Hence, 'option 4' is the correct answer.

Q93. Answer: (b) 1

Given:

[{(15 × 10) - (3/5)} + (12 - 8)]/1

• stands for division

– stands for addition

× stands for subtraction

/ stands for multiplication

Concept Used:

BODMAS Rule

Calculation:

=> [{(15 × 10) - (3/5)} + (12 - 8)]/1

=> Changing the signs according to the question,

=> [{(15 – 10) + (3 × 5)} ÷ (12 + 8)] × 1

=> [{5 + 15} ÷ 20] × 1

=> 20 ÷ 20 = 1

Therefore, the simplified value of the expression is 1.

Q94. Answer: (d) Cartoon

Explanation:

R K Narayan : Novel

=> R K Narayan was an Indian writer. He was a leading author in early Indian literature in English.

Similarly, R K Laxman : ?

=> R K Laxman was a renowned cartoonist.

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As novel is related to R K Narayan, in the same way cartoon is related to R K Laxman.

Hence, 'option 4' is the correct answer.

Q95. Answer: (c) Event A is an effect but event B is not its immediate and principal cause.

Explanation:

Event A : Suraj died on his way to office.

Event B : Suraj had been feeling depressed since a month regarding the loss of his spouse.

Here death of Suraj on his way to office is an effect, but his depression regarding the loss of his spouse is not its immediate and principal cause of death.

Immediate cause of his death is something else.

Thus, Event A is an effect but event B is not its immediate and principal cause.

Hence, 'option 3' is the correct answer.

Q96. Answer: (c) Tiger

Explanation:

Nepal : Cow

=> Cow is the national animal of Nepal.

Similarly, India : Tiger

=> Tiger is the national animal of India.

Hence, 'option 3' is the correct answer.

Q97. Answer: (d) 11PS

Explanation:

The positional values of the English alphabet is as follows:

The pattern followed here is:

The term should be 11JR instead of 11PS.

Thus, 11PS does not belong to the series.

Hence, 'option 4' is the correct answer.

Q98. Answer: (c) 96

Explanation:

Logic : Number of sides of bigger figure (Total sum of the number of sides of 3 smaller figures and the numbers written inside it)

Figure 1:

$6\{(3 + p) + (4 + q) + (4 + r)\}$

Figure 2:

$5\{(4 + 3) + (3 + 2) + (5 + 5)\} = 110$

Figure 3:

Similarly,

$\Rightarrow 4\{(6 + 4) + (5 + 3) + (4 + 2)\}$

$\Rightarrow 4\{10 + 8 + 6\}$

$\Rightarrow 4 \times 24 = 96$

So the value of '?' is 96.

Hence, 'option 3' is the correct answer.

Q99. Answer: (c) 30, 18

Explanation:

Logic : (Number of sides of the figure × 5), (Number of sides of the figure × 6)

Pair 1:

$\Rightarrow (4 \times 5), (3 \times 6)$

$\Rightarrow 20, 18$

Pair 2:

$\Rightarrow (5 \times 5), (4 \times 6)$

$\Rightarrow 25, 24$

Similarly, Pair 3:

=> (6 × 5), (3 × 6)

=> 30, 18

Hence, 'option 3' is the correct answer.

Q100. Answer: (b) U-Z

Explanation:

The positional values of the English alphabet is as follows:

The pattern followed here is:

Thus, U-Z was different from the rest.

Hence, 'option 2' is the correct answer.

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