RRB NTPC CBT-I Official Paper (Held On: 11 Feb 2021 Shift 1) (Previous Year Paper)

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

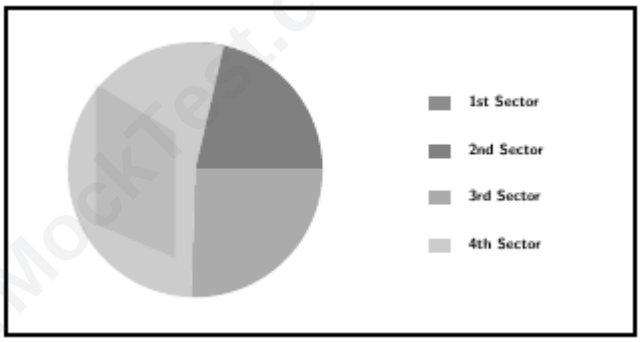
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Q1. The following pie chart shows the total ocean cover by four oceans, Arctic, Indian, Atlantic and Pacific. 1^(st) sector: Arctic = 4%, 2^(nd) sector: Indian = 22%, 3^(rd) sector Atlantic = 25% and 4^(th) sector Pacific = 49%. Based on the pie chart, answer the given question.



If the four oceans cover an area of almost 130 million square miles in total, then what area is covered by the Pacific Ocean?

(a) 63.7 million square miles
(b) 64 million square miles
(c) 74 million square miles
(d) 65 million square miles

Q2. Which of the following country other than India has Field Hockey as its National Sport?

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

Q3. The electricity bill of a certain establishment is partly fixed and partly variable depending on the number of units of electricity consumed. In a certain month when 540 units were consumed, the bill was Rs. 1,800. In another month when 620 units were consumed, the bill was Rs. 2,040. If in a month 500 units are consumed, then the bill for that month will be:

(a) Rs. 1,680
(b) Rs. 1,840
(c) Rs. 1,560
(d) Rs. 1,950

Q4. When was the United States Environmental Protection Agency established?

(a) January 1985
(b) December 1970
(c) March 1979
(d) December 1980

Q5. Select the option that holds true regarding the given statements.

Statements:

I. The soldiers loaded their guns and marched towards the battle ground.

II. The families of soldiers are praying for the safety of the soldiers who are in the battle ground.

(a) Statement I is the effect and Statement II is its immediate and principal cause.
(b) Both the statements are effects of some independent causes.
(c) Both the statements are independent of each other.
(d) Statement II is the effect and Statement I is its immediate and principal cause.

Q6. If the profit earned by selling an article for Rs. 1,560 is same as the loss incurred by selling the same article for Rs. 1,060, then what is the cost price of the article?

(a) Rs. 1,110
(b) Rs. 2,130
(c) Rs. 1,210
(d) Rs. 1,310

Q7. National Testing Agency (NTA) was established in the year _____ to Conduct entrance examinations.

(a) 2020
(b) 2019
(c) 2017
(d) 2015

Q8. If $x/y = 6/5$, then the value of $(x^2 + y^2)/(x^2 - y^2)$ is:

(a) 11/61
(b) 60/11
(c) 61/11
(d) 60/34

Q9. The value of $1/4 + 1/(4 \times 5) + 1/(4 \times 5 \times 6)$, correct to four decimal places, is:

(a) 0.3083
(b) 0.3092
(c) 0.3150
(d) 0.3140

Q10. If 1/8 of a pencil is black, half of the remaining pencil is yellow and the remaining 31/2 cm of the pencil is blue, then what is the total length of the pencil?

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

Q11. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

12	**51**	**18**
8	13	?
26	12	12
30	50	23

(a) 7
(b) 6
(c) 9
(d) 12

Q12. 1 L of water weighs 1 kg. How many cubic millimetres of water will weigh 0.1 g?

(a) 1 mm^3
(b) 100 mm^3
(c) 10 mm^3
(d) 1000 mm^3

Q13. Nikhil has a mean score of 95 in Maths after 4 quizzes. Then he scored 0 in the next Maths quiz. The new mean score is:

(a) 76.2
(b) 67.2
(c) 76
(d) 67

Q14. The breadth of a rectangular plot of land is one-third of its length. If the perimeter of the plot is 240 m, then what is the length of the plot?

(a) 90 m
(b) 95 m
(c) 60 m
(d) 70 m

Q15. Kalbelia folk songs and dances belong to which Indian state?

(a) Himachal Pradesh
(b) Rajasthan
(c) Madhya Pradesh
(d) Maharashtra

Q16. What is the name of India's first engineless train?

(a) Namami Bharat Express
(b) New India Express
(c) Vande Bharat Express
(d) Vande Mataram Express

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

Statements:

I. Some ghosts are shells.

II. All shells are washing machines.

Conclusions:

I. Some ghosts are washing machines.

II. No ghost is a washing machine.

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

Q18. Manish fixed 48 poles in order to fence a square. If the distance between 2 poles is 5 m, then what will be the area of the square, formed?

(a) 3500 m^2
(b) 4000 m2
(c) 3200 m2
(d) 3600 m2

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Q19. Which of the following is the correct chronological sequence of pre-historic period of human activities and civilization?

(a) Palaeolithic Period, Mesolithic Period, Neolithic Period
(b) Mesolithic Period
×
duplicate options found. English Question 1 options 3,4,
, Neolithic Period, Palaeolithic Period
(c) Metal age Period, Mesolithic Period, Palaeolithic Period
(d) Neolithic Period, Mesolithic Period, Palaeolithic Period

Q20. In the following sequence of digits, how many times have the numbers 4, 1 and 6 appeared together, 1 being in the middle and 4 and 6 being on either side of 1?

21461463714761241461621 2

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

Q21. Identify the term that does NOT belong to the following series.

CED, DFE, EGF, FGH, GIH, HJI

(a) FGH
(b) EGF
(c) CED
(d) DFE

Q22. What are the characteristics of the Indian missile Prithvi-II, which was launched in October 2018?

(a) It is an anti-tank guided missile.
(b) It is a nuclear-capable long range ballistic missile.
(c) It is a ballistic missile.
(d) It is beyond visual range air-to-air missile.

Q23. Who became the first Indian woman to be nominated as a member of the International Olympic Committee (IOC)?

(a) Sonia Gandhi
(b) Sumitra Mahajan
(c) Nita Ambani
(d) Supriya Sule

Q24. The outer Himalayas is also known as _____.

(a) Bomdi-La
(b) Pir Panjal
(c) Shiwaliks
(d) Pamir Knot

Q25. An examination requires 33% marks in order to pass. A candidate who gets 210 marks fails by 21 marks. What are the total marks for the examination?

(a) 400
(b) 500
(c) 700
(d) 350

Q26. A sum of money lent at simple interest amounts to Rs. 720 after 2 years and to Rs. 1,020 after a further period of 5 years. What is the sum of money?

(a) Rs. 200
(b) Rs. 600
(c) Rs. 400

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(d) Rs. 500

Q27. A boy was asked to multiply a given number with 5/11. Instead, he divided the same number by 5/11. Thus, his answer exceeded the correct answer by 192. What is the given number?

(a) 110
(b) 50
(c) 192
(d) 110/5

Q28. Find the degree measure of the angle subtended at the centre of a circle of radius 100 cm by an arc of length 22 cm.

(a) 2° 36´
(b) 62° 36´
(c) 12° 36´
(d) 22° 36´

Q29. Name the Sarangi Player who won Padma Shri Award in 2014?

(a) Ustad Moinuddin Khan
(b) Asad Ali Khan
(c) Ustad Sultan Khan
(d) Sajjad Hussain

Q30. Which of the following is a tribe of Andaman and Nicobar Islands?

(a) Jarawa
(b) Ainus
(c) Tharu
(d) Fulani

Q31. Four students Amit, Bharat, Chandan and Danish went to four different colleges-BDS, IIMT, DPS and IMS-to take admission in four different courses, namely, BA, BBM, BSc and BCom. The student who took admission in IIMT has not opted for BSc. Chandan took admission in IMS and has opted for BA. Amit took admission in BDS and has opted for BBM. Danish opted for BSc. Which student took admission in DPS?

(a) Bharat
(b) Chandan
(c) Danish
(d) Amit

Q32. The current (as on October 2020) United Nations Emblem was approved on 7 December 1946. What do the olive branches in the emblem symbolise?

(a) Peace throughout the world
(b) The area of concern of the United Nations
(c) The national symbol of the Nation where the UN is head-quartered
(d) Feeling of pride when associated with the UN

Q33. Which Governor General of India Proposed the Vernacular press act in 1878?

(a) Lord Chelmsford
(b) Lord Hardinge
(c) Lord Minto
(d) Lord Lytton

Q34. How many significant digits are there to the right of the decimal point in the product of 95.75 and 0.02554?

(a) 5
(b) 3
(c) 4
(d) 6

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Q35. Subsidiary Alliance, through which the British were responsible for protecting their Indian allies from external and internal threats to their power, was devised by:

(a) Lord Dalhousie
(b) Lord Curzon
(c) Lord Wellesley
(d) Lord Bentinck

Q36. An aeroplane flies along the sides of an equilateral triangle at the speed of 300 km/h, 200 km/h and 240 km/h, respectively. The average speed of the plane while flying around the triangle is:

(a) 150 km/h
(b) 240 km/h
(c) 140 km/h
(d) 40 km/h

Q37. The rate of doing work is called power. The unit of power is:

(a) watt
(b) ampere
(c) volt
(d) kelvin

Q38. There are 100 students in a hostel. Food provisions for them will last for 20 days. How long will the same provisions last if 25 more students join the hostel?

(a) 10 days
(b) 15 days
(c) 4 days
(d) 16 days

Q39. What does Yellow revolution refer to?

(a) Increasing the production of coffee
(b) Increasing the production of fish
(c) Increasing the production of oil seeds
(d) Increasing the production of milk

Q40. Who was the last Mughal emperor of India?

(a) Alamgir II
(b) Bahadur Shah II
(c) Aurangzeb
(d) Ahmad Shah Bahadur

Q41. Which community of Rajasthan has been following block printing since the last three centuries?

(a) Khatik
(b) Khatri
(c) Chippa
(d) Bishnois

Q42. Who is the highest paid female athlete in the world in Forbes 2020 list (in terms of net worth)?

(a) Danica Patrick
(b) Maria Sharapova
(c) Venus Williams
(d) Naomi Osaka

Q43. Kumar Mangalam Birla Committee was set up to look into which of the following areas of Indian economy?

(a) Customer services in banks
(b) Corporate debt
(c) Corporate governance

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(d) Financial inclusion

Q44. The characteristic color of Marine Algae depends on the pigments located in the plastids. Which pigment leads to 'Green' colour of the algae?

(a) Carotene
(b) Chlorophyll
(c) Zeaxanthin
(d) Phycocyanin

Q45. What is the name of India's first Railway University?

(a) Rashtriya Rail Vishwavidyalaya
(b) National Rail and Transportation Insitute
(c) Indian Rail and Roadways Institute
(d) Institute of Rail Management of India

Q46. The force of attraction applied between molecules of the same substance is called:

(a) adhesive force
(b) capillarity
(c) cohesive force
(d) surface tension

Q47. Which country has hosted 35^(th) ASEAN Summit in Oct-Nov 2019?

(a) Singapore
(b) Laos
(c) Thailand
(d) Philippines

Q48. What are transverse waves?

(a) These are the waves which do not require medium for their propagation.
(b) These are the longitudinal mechanical waves.
(c) In these waves, the particles of the medium vibrate in the parallel direction of propagation of the waves.
(d) In these waves, the particles of the medium vibrate perpendicular to the direction of propagation of the waves.

Q49. Select the number that can replace the question mark (?) in the following series.

8, 16, 48, ?, 960, 5760, 40320

(a) 240
(b) 118
(c) 192
(d) 376

Q50. Are the numbers 30, 40, 45 and 60 in proportion?

(a) Only 30 and 40 are in proportion.
(b) Only 45 and 40 are not in proportion.
(c) Yes, they are in proportion.
(d) No, they are not in proportion.

Q51. In a certain code language, 'SUN' is written as 'RTTVMO' and 'JOB' is written as 'IKNPAC'. How will 'PIE' be written as in that language?

(a) RSIJFG
(b) OSJKCG
(c) KOLPGY
(d) OQHJDF

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Q52. Identify the number that does NOT belong to the following series.

3, 7, 22, 89, 446, 2677, 18739

(a) 89
(b) 2677
(c) 18739
(d) 446

Q53. Four number-pairs have been given, out of which three are alike in some manner and one is different. Select the odd number-pair.

(a) 6 - 216
(b) 9 - 729
(c) 7 - 343
(d) 8 - 256

Q54. The only active volcano of India is in _____.

(a) Port Blair
(b) Barren Island
(c) Narcondam Island
(d) Baratang

Q55. What were the names of Facebook's artificial intelligence robots that were shut down?

(a) Tom and Mary
(b) Bob and Alice
(c) Alexa and Siri
(d) Cortana and Watson

Q56. A train is travelling at a uniform speed of 75 km/h. How far will it travel in 20 minutes?

(a) 25 km
(b) 20 km
(c) 40 km
(d) 4 km

Q57. Two adjacent angles form an angle of 100°. The larger angle is 20° less than five times the smaller angle. The larger angle is:

(a) 75°
(b) 80°
(c) 70°
(d) 90°

Q58. Three whole cakes weigh 41/2 lbs, 63/4 lbs and 71/5 lbs, respectively. Each cake has to be divided into pieces of equal weight. Each piece must be as heavy as possible. If one such piece is served to each guest, then what are the maximum number of guests that can be served?

(a) 41
(b) 72
(c) 45
(d) 54

Q59. If the length of the diagonal of a square is 20 cm, then what is its perimeter?

(a) 0 cm
(b) √2 cm
(c) 40√2 m
(d) 40√2 cm

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Q60. The first on-line NISHTHA programme has been launched by the Ministry of Human Resource Development in _____.

(a) Andhra Pradesh
(b) Maharashtra
(c) Delhi
(d) Uttar Pradesh

Q61. The LCM of two co-prime numbers is 638. If one number is 29, then the other number is:

(a) 22
(b) 13
(c) 11
(d) 32

Q62. Select the letter-cluster that can replace the question mark (?) in the following series.
SUMA, ASUM, MASU, ?

(a) UASM
(b) MAUS
(c) SAUM
(d) UMAS

Q63. Who was appointed as Finance Minister of India on 31^(st) May 2019?

(a) Sushma Swaraj
(b) Nirmala Sitharaman
(c) Amit Shah
(d) Arun Jaitley

Q64. Three different containers contain a mixture of milk and water, measuring 403 litres, 434 litres and 465 litres, respectively. The biggest measure required to measure all the different quantities exactly is:

(a) 32 litres
(b) 41 litres
(c) 31 litres
(d) 7 litres

Q65. In a certain code language, 'DIVIDENT' is written as '# % G % # * @ L' and 'DADDY' is written as '# ! # # O'. How will 'NATIVE' be written as in that language?

(a) ! * # L G %
(b) • O ^ @ !
(c) @ ! L % G *
(d) @ # L ! % O

Q66. Which of the following is/are the transcontinental country/countries?

(a) Saint Lucia
(b) Trinidad and Tobago
(c) Laos
(d) Turkey and Georgia

Q67. Which of the following acts in India was based on report of a committee headed by the British Prime Minister Lord North?

(a) Charter's Act 1793
(b) Pitts India Act 1784
(c) Government of India act 1858
(d) Regulating Act 1773

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Q68. What is 'Jallikattu'?

(a) A popular watersport enjoyed by the Marina beach, Chennai
(b) A traditional bull-taming sport popular in Tamil Nadu
(c) The traditional name for "People's Leader" in Tamil
(d) A bull worship festival at Pashupatinath temple, Nepal

Q69. Tata Institute of Fundamental Research was set up under the vision of:

(a) Dr. CV Raman
(b) Dr. APJ Abdul Kalam
(c) Dr. Homi J Bhabha
(d) Srinivasa Ramanujan

Q70. The mass of five meteorites found on earth are 23.5 kg, 15 kg, 20 kg, 22 kg and 16 kg. For this data, which of the following measures is 19.3 kg?

(a) Mean
(b) Mode
(c) Mean deviation
(d) Median

Q71. What does the SWAYAM scheme launched by Government of India aim to achieve?

(a) Entrepreneurial growth
(b) Access, equity and quality of education
(c) Digital India
(d) Skill India

Q72. Select an option which is different from the rest in a certain way.

(a) IKM
(b) CEG
(c) OQR
(d) ACE

Q73. Animals often blend in with their surroundings for protection. Which of the following do that?

(a) Chameleons
(b) Turtles
(c) Cats
(d) Jerboa

Q74. When an arm of an angle is extended to double its length, then the measure of the angle:

(a) remains the same
(b) doubles
(c) becomes half
(d) triples

Q75. How many days are taken by the moon to complete a single rotation on its axis?

(a) 27.3 earth days
(b) 25.6 earth days
(c) 20 earth days
(d) 29.8 earth days

Q76. What is the full form of VR in computer technology?

(a) Visual Reality
(b) Visual Range
(c) Virtual Reality
(d) Vocal Resonance

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Q77. Out of six consecutive numbers, the sum of the first three numbers is 27. What is the sum of the next three numbers?

(a) 12
(b) 10
(c) 36
(d) 63

Q78. For communication, elephants can make noises as loud as 103 decibels but they often use low frequency sound, some of which is passed through the ground. These sounds are called:

(a) supersonic sound
(b) ultrasound
(c) plosives
(d) infrasound

Q79. In which year was the East India Company granted 'Diwani rights' (right to collect revenues and decide civil cases of Bengal, Bihar and Orissa) by Mughals?

(a) 1715
(b) 1765
(c) 1800
(d) 1680

Q80. If an investment of Rs. 1,000 amounts to Rs. 1,440 in 2 years when compounded annually, then what is the rate of compound interest?

(a) 40%
(b) 20%
(c) 30%
(d) 0.2%

Q81. Find the value of 4 - 5/(1 + 1/(3 + 1/(2 + 1/4)))

(a) 1/8
(b) 2/9
(c) 8/3
(d) 1/4

Q82. Which of the following best describes - 'A method of storing and transmitting data in a particular coded form so that only those can read and process it for whom it is intended. It includes encoding and decoding of data'?

(a) Cryptography
(b) Programming
(c) Cloud computing
(d) Block chain

Q83. The value of √(16 + √(80 + √(5000 - 4999))) is:

(a) 5
(b) 1
(c) 25
(d) 50

Q84. Study the given pattern carefully and select the letter that can replace the question mark (?) in it.

N	R	V
Q	M	?
P	T	X
O	K	G

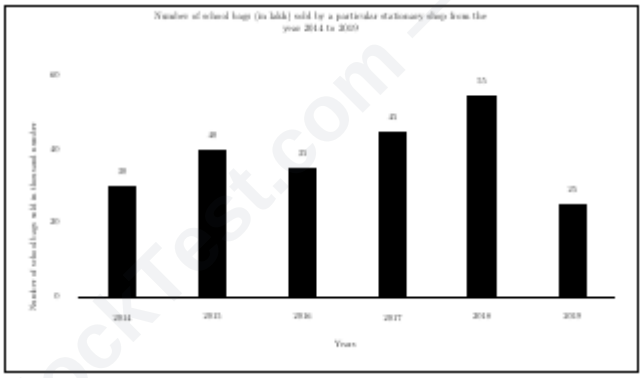
(a) W

(b) I
(c) Z
(d) H

Q85. Monica and Chandler are siblings. Chandler is the nephew of Grace and the father of Maria. Kathy is the sister of Grace. Phoebe is the mother of Kathy. How is Monica related to Phoebe?

(a) Granddaughter
(b) Daughter
(c) Aunt
(d) Niece

Q86. Study the given bar graph carefully and answer the question that follows.



Find the difference between the numbers of school bags sold in the years 2015 and 2017.

(a) 5 lakh
(b) 10 lakh
(c) 15 lakh
(d) 20 lakh

Q87. Study the given tables and answer the question that follows.

Phases of Shopping Mall-Project ↓	**Manpower required for each phase and per day salary of each of them**			
Manager (Rs. 15,000)	Civil Engineers (Rs. 20,000)	Unskilled labor (Rs. 1000)	Skilled labor (Rs. 1500)	
Planning/design	1	2	2	20
Construction	1	4	500	140
Setting pipelines	1	6	100	250
Painting	2	2	150	200

Phases of Shopping Mall-Project	**Estimated time period of completion of phase (in days)**	**Actual time-period of Completion of phase (in days)**
Planning/design	20	30
Construction	500	650
Setting pipelines	60	80
Painting	30	40

Which phase witnessed the highest absolute increase between the estimated and actual salary expenditure?

(a) Construction
(b) Planning\design

(c) Setting pipelines
(d) Painting

Q88. Study the given table and answer the question that follows.

Result ↓	**Number of Students**		
Class 7 A	Class 7 B	Class 7 C	
Passed both the Semester exam.	18	15	17
Passed semester 1 but failed semester 2 exam.	4	7	2
Passed semester 2 but failed semester 1 exam.	6	7	6
Failed in the both the semester exams.	2	1	5

What is the pass percentage of the number of students in class 7C in at least one of the two examination?

(a) 26%
(b) 83%
(c) 91%
(d) 56%

Q89. According to the given table, which State witnessed maximum change in the number of subscribers for Netflix Channel from 2003 to 2004.

States	**Number of Netflix subscribers (in millions) in the years 2003 & 2004**	
2003	2004	
Delhi	37.62	43.26
Mumbai	45.26	47.61
Assam	32.02	40.56
Punjab	48.65	50.55
Kerala	36.36	38.21
Bihar	27.21	27.87
Uttar Pradesh	67.52	71.34

(a) Uttar Pradesh
(b) Assam
(c) Delhi
(d) Bihar

Q90. Read the given statement and conclusions carefully and decide which of the conclusions logically follow(s) from the statement.

Statement:

Computer is one of the greatest innovations of mankind.

Conclusions:

I. No other innovation is better than computer.

II. Computers have benefitted mankind

(a) Either conclusion I or II follows.
(b) Both the conclusion follow.

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(c) Only conclusion I follows.
(d) Only conclusion II follows.

Q91. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

I. All men are curtains.

II. No curtains are sophisticated.

Conclusions:

I. All curtains are sophisticated.

II. No men are sophisticated.

(a) Only conclusion I follows.
(b) Both I and II follow.
(c) Only conclusion II follows.
(d) Either I or II follows.

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

2, 14, 84, 422, 1680, 5040, 10080, 10080

(a) 5040
(b) 84
(c) 1680
(d) 422

Q93. Select the number that can replace the question mark (?) in the following series.

23, 168, 1183, 8288, ?

(a) 58,023
(b) 87,012
(c) 74,053
(d) 67,098

Q94. Select the option in which the words share the same relationship as that shared by the given pair of words.

Cow : Bull

(a) Cat : Feline
(b) Maid : Valet
(c) Drone : Doe
(d) Pig : Sty

Q95. Read the given statement and conclusions carefully and decide which of the conclusions logically follow(s) from the statement.

Statement:

Absence makes the heart grow fonder.

Conclusions:

L. The missing of a thing or a person increases the longing for it.

M. A healthy distance should be maintained to keep the relationship strong.

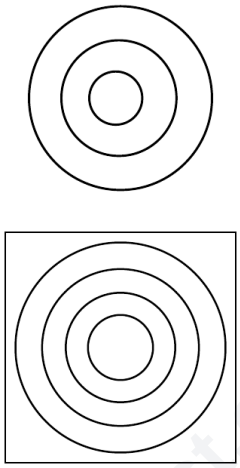
(a) Only conclusion M follows.
(b) Both the conclusion follow.
(c) Only conclusion L follows.
(d) Either conclusion L or M follows.

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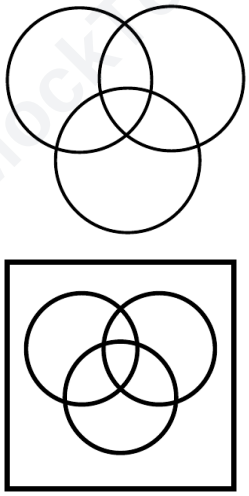
Q96. Select the Venn diagram that best represents the relationship between the following classes.

Golf, Rugby, Sport

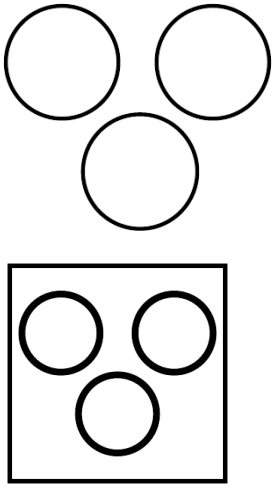
(a)



(b)

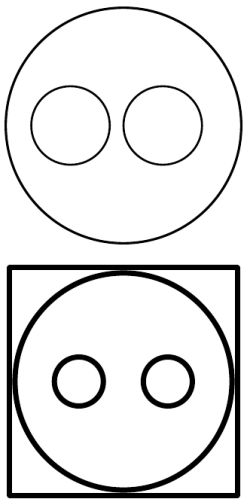


(c)



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(d)



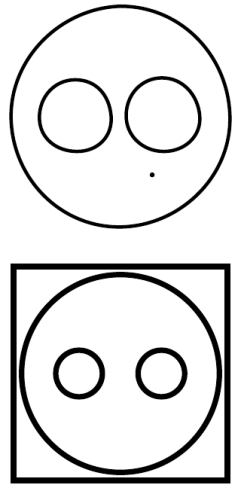
Q97. Select an option which is different from the rest in a certain way.

(a) VYB
(b) GJB
(c) PSV
(d) CFI

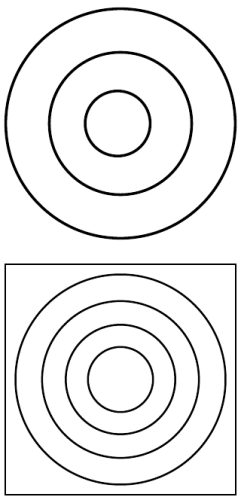
Q98. Select the Venn diagram that best represents the relationship between the following classes.

Kidney, Organ, Heart

(a)

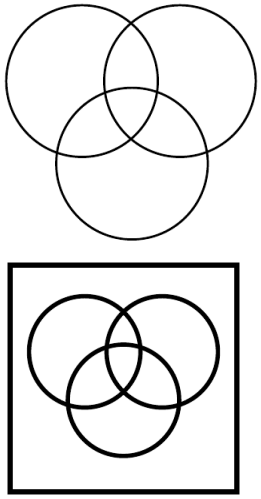


(b)

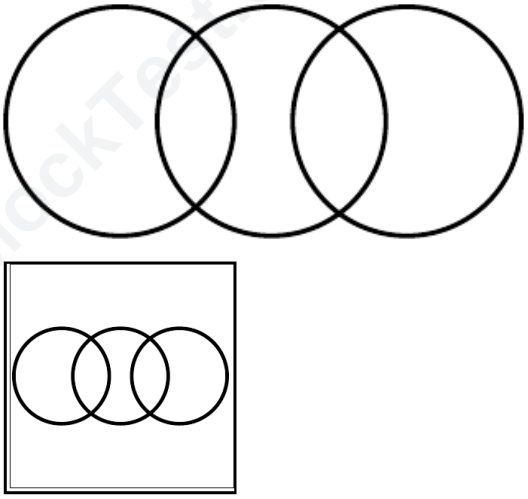


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(c)



(d)



Q99. Dustin is Mike's son. Will is the name of Bob's son. The son of Bob's father Alex is the brother of Mike. How is Dustin related to Will?

(a) Brother's Son
(b) Father's Brother's Son
(c) Friend
(d) Father's Brother

Q100. Select an option which is different from the rest in a certain way.

(a) Flu
(b) Fatigue
(c) Pain
(d) Fever

ANSWER KEY

1	a	2	c	3	a	4	b	5	d	6	d	7	c	8	c	9	a	10	b
11	a	12	b	13	c	14	a	15	b	16	c	17	a	18	d	19	a	20	b
21	a	22	c	23	c	24	c	25	c	26	b	27	a	28	c	29	a	30	a
31	c	32	a	33	d	34	d	35	c	36	b	37	a	38	d	39	c	40	b
41	c	42	d	43	c	44	b	45	b	46	c	47	c	48	d	49	c	50	c
51	d	52	c	53	d	54	b	55	b	56	a	57	b	58	a	59	d	60	a

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61	a	62	d	63	b	64	c	65	c	66	d	67	d	68	b	69	c	70	a
71	b	72	c	73	a	74	a	75	a	76	c	77	c	78	d	79	b	80	b
81	a	82	a	83	a	84	b	85	a	86	a	87	a	88	b	89	b	90	d
91	c	92	d	93	a	94	b	95	c	96	d	97	b	98	a	99	b	100	a

SOLUTIONS

Q1. Answer: (a) 63.7 million square miles

Given:

Total area covered by oceans = 130 million square miles

Percentage of area covered by the Pacific Ocean = 49%

Formula used:

Area covered by Pacific Ocean = (Percentage of Pacific Ocean)/100 × Total area

Calculation:

Area covered by Pacific Ocean = 49/100 × 130

=> Area covered by Pacific Ocean = 6370/100

=> Area covered by Pacific Ocean = 63.7 million square miles

Therefore The correct answer is option (1).

Q2. Answer: (c) Pakistan

The correct answer is Pakistan.

Key Points

• While India is widely known for its passion for field hockey, Pakistan also shares this deep-rooted love for the sport.

• Historical Significance: Field hockey has a rich history in both countries, dating back to British colonial times.

• The sport gained immense popularity in the Indian subcontinent during this era.

• Competitive Rivalry: The India-Pakistan rivalry in field hockey is legendary. Matches between these two nations are often intense and highly anticipated, reflecting the shared passion for the sport and the historical context between the two countries.

• International Success: Both countries have achieved significant success in international field hockey competitions. Pakistan has won the Men's Hockey World Cup four times (1971, 1978, 1982, 1994), showcasing their dominance in the sport at the global level.

• National Recognition: While not officially declared as the national sport through legislation, field hockey holds a special place in Pakistani culture and is widely recognized as a symbol of national pride and sporting excellence.

• Grassroots Development: The sport enjoys strong grassroots support in Pakistan, with numerous academies and clubs nurturing young talent. This ensures the continued growth and development of field hockey in the country.

Q3. Answer: (a) Rs. 1,680

Given:

The electricity bill of a certain establishment is partly fixed and partly variable depending on the number of units of electricity consumed.

In a certain month when 540 units were consumed, the bill was Rs. 1,800.

In another month when 620 units were consumed, the bill was Rs. 2,040.

Formula used:

Let the fixed cost be F and the variable cost per unit be V.

Total Bill = Fixed Cost + (Variable Cost per unit × Number of units)

Calculation:

1,800 = F + 540V

2,040 = F + 620V

Subtracting the first equation from the second:

2,040 - 1,800 = (F + 620V) - (F + 540V)

=> 240 = 80V

=> V = 240/80

=> V = 3

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Substituting the value of V in the first equation:

1,800 = F + 540 × 3

=> 1,800 = F + 1,620

=> F = 180

If in a month 500 units are consumed, then:

Bill = F + 500V

=> Bill = 180 + 500×3

=> Bill = 180 + 1,500

=> Bill = 1,680

Therefore The correct answer is option 1.

Q4. Answer: (b) December 1970

The correct answer is December 1970.

Key Points

• It was established on December 2, 1970, by an executive order of President Richard Nixon.

• The EPA's mission is to protect human health and the environment.

• The agency is responsible for creating and enforcing environmental laws, inspecting the environment, and providing technical support to minimize environmental threats.

• The EPA's work encompasses a wide range of environmental issues, including air and water pollution, waste management, climate change, and the protection of endangered species.

• The EPA has played a crucial role in improving air and water quality, reducing pollution, and protecting public health in the United States.

• The current Administrator of the EPA is Michael Regan.

• The EPA has had a significant impact on environmental protection in the United States.

• It has been instrumental in developing and implementing landmark environmental legislation, such as the Clean Air Act, the Clean Water Act, and the Superfund Act.

• These laws have led to significant improvements in air and water quality, reduced pollution, and protected public health.

Q5. Answer: (d) Statement II is the effect and Statement I is its immediate and principal cause.

Statements:

First Statement: "The soldiers loaded their guns and marched towards the battle ground." This statement shows that soldiers are preparing for and heading into battle. It tells us what's happening on the military side.

Second Statement: "The families of soldiers are praying for the safety of the soldiers who are in the battle ground." This statement tells us what the soldiers' families are doing while the soldiers are fighting. They are worried about their loved ones and praying for their safety.

Therefore, Statement II is the effect and Statement I is its immediate and principal cause.

Hence, the correct answer is "Option 4".

Q6. Answer: (d) Rs. 1,310

Given:

If the profit earned by selling an article for Rs. 1,560 is the same as the loss incurred by selling the same article for Rs. 1,060, then what is the cost price of the article.

Formula used:

Let the cost price be Rs. C

Profit = Selling Price - Cost Price

Loss = Cost Price - Selling Price

Calculation:

Given, Profit = Loss

=> (1560 - C) = (C - 1060)

=> 1560 + 1060 = 2C

=> 2620 = 2C

=> C = 1310

Therefore The correct answer is option (4).

Q7. Answer: (c) 2017

The correct answer is 2017.

Key Points

• It is an Indian government agency that has been recognised by the Union Council of Ministers and instituted in November 2017.

• The National Testing Agency (NTA) is set to conduct various entrance examinations nationwide.

• NTA is accountable for conducting the Joint Entrance Examination – Main (JEE Main), National Eligibility cum Entrance Test -Undergraduate (NEET-UG), National Eligibility Test (NET).

• It is also responsible to conduct, Common Management Admission Test (CMAT) and Graduate Pharmacy Aptitude Test (GPAT).

• The Motto of the National Testing Agency (NTA) is Excellence in Assessment.

Additional Information

About National Testing Agency (NTA):

• It is a specialist, premier, autonomous and self-sustained testing organization in the country.

• IT conducts tests for entrance or admissions and fellowships in higher educational institutions.

• It is registered as a society under Societies Registration Act, 1860.

• It is chaired by an eminent educationist appointed by the Ministry of Education.

• It conducts the following major examinations:

• National Eligibility-cum-Entrance Test (NEET)

• Joint Entrance Examination (JEE Mains)

• UGC - National Eligibility Test (NET)

• Common Management Admission Test (CMAT)

• Graduate Pharmacy Aptitude Test (GPAT).

Objectives of the agency:

• Conducting examinations and tests in an efficient and transparent manner.

• Design tests in a more rational, scientific manner that suits the needs of the time and demands.

• Assessing students on the basis of their critical analysis levels rather than rote-learning.

• Train subject matter experts (SMEs) for the setting of syllabus, question papers and effective solutions for the same in a timely manner.

• Collaboration with psychometricians to ensure that the tests are a balance of all the requisite skills for the respective disciplines.

Functions of the agency:

• Collaboration, coordination and monitoring of the existing schools and other educational institutions that can help conduct the examination.

• Curate an R&D ecosystem within the agency as well as partner with elite academicians, subject matter experts, psychologists, etc.

• Assist individual institutions throughout the process from the centre exam ready to actually conducting the exam hassle-free.

• Knowledge exchange between domestic and international experts in students assessments, like ETS, etc. for developing a state-of-the-art testing culture in the country.

• Undertake any other examination series or tests as instructed by the Ministries or other government departments or even state governments.

• Undertake capacity building, reforms and training of school boards, faculty members and non-teaching members to commensurate their testing standards to that of the entrance exam levels for the students.

Q8. Answer: (c) 61/11

Given:

If $x/y = 6/5$

Formula used:

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

Calculations:

If $x/y = 6/5$, then let $x = 6k$ and $y = 5k$

$=> ((6k)^2 + (5k)^2)/((6k)^2 - (5k)^2)$

$=> (36k^2 + 25k^2)/(36k^2 - 25k^2)$

$=> (61k^2)/(11k^2)$

=> 61/11

Therefore The correct answer is option (3).

Q9. Answer: (a) 0.3083

Given:

1/4 + 1/(4 × 5) + 1/(4 × 5 × 6), correct to four decimal places.

Formula used:

We simply add the fractions directly.

Calculation:

1/4 = 0.25

1/(4 × 5) = 1/20 = 0.05

1/(4 × 5 × 6) = 1/120 = 0.0083

=> 0.25 + 0.05 + 0.0083 = 0.3083

Therefore The correct answer is option (1).

Q10. Answer: (b) 8 cm

Given:

If 1/8 of a pencil is black, half of the remaining pencil is yellow and the remaining 31/2 cm of the pencil is blue.

Formula used:

Let total length of pencil = x cm

Black part = 1/8 x cm

Remaining length = x - 1/8x = 7/8x cm

Yellow part = 1/2 × 7/8x = 7/16x cm

Blue part = 31/2 = 7/2 cm

Calculation:

x = 1/8x + 7/16x + 7/2

=> x = 2/16x + 7/16x + 7/2

=> x = 9/16x + 7/2

=> x - 9/16x = 7/2

=> 7/16x = 7/2

=> x = 7/2 × 16/7

=> x = 8 cm

Therefore The correct answer is option 2.

Q11. Answer: (a) 7

The logic followed here is:

12 + 26 = 8 + 30

38 = 38 (LHS = RHS)

And,

51 + 12 = 13 + 50

63 = 63 (LHS = RHS)

Similarly,

18 + 12 = ? + 23

30 - 23 = ?

7 = ?

Hence, "Option 1" is the correct answer.

Q12. Answer: (b) 100 mm³

Given:

1 L of water weighs 1 kg.

0.1 g of water.

Formula used:

1 L = 1,000,000 mm³

1 kg = 1,000 g

Density of water = 1 g/cm³

Calculation:

1 L water = 1,000 g

=> 1,000,000 mm^3 water weighs 1,000 g

=> 1 mm^3 water weighs 0.001 g

=> 0.1 g water = 0.1 ÷ 0.001 mm^3

=> 0.1 g water = 100 mm^3

Therefore The correct answer is option (2).

Q13. Answer: (c) 76

Given:

Nikhil has a mean score of 95 in Maths after 4 quizzes.

He scored 0 in the next Maths quiz.

Formula used:

New Mean = (Total Sum of Scores) / (Total Number of Scores)

Calculation:

Initial Mean = 95

Total Number of Quizzes Initially = 4

=> Total Sum of Scores Initially = 95 × 4

=> Total Sum of Scores Initially = 380

After the 5th Quiz:

Total Sum of Scores = 380 + 0

Total Number of Quizzes = 4 + 1

=> Total Sum of Scores = 380

=> Total Number of Quizzes = 5

=> New Mean = 380 / 5

=> New Mean = 76

Therefore The correct answer is option 3.

Q14. Answer: (a) 90 m

Given:

The breadth of a rectangular plot of land is one-third of its length.

Perimeter of the plot = 240 m

Formula used:

Perimeter of a rectangle = 2(length + breadth)

Calculations:

Let the length of the plot be L meters.

Then, the breadth of the plot = L/3 meters

Perimeter = 2(L + L/3)

=> 240 = 2(L + L/3)

=> 240 = 2(4L/3)

=> 240 = 8L/3

=> 240 × 3 = 8L

=> 720 = 8L

=> L = 720/8

=> L = 90

Therefore The correct answer is option (1).

Q15. Answer: (b) Rajasthan

The correct answer is Rajasthan.

Key Points

• Kalbelia is a folk dance mainly performed by the Kalbelia Community in Rajasthan.

• It is also known by other names like 'Sapera Dance' or 'Snake Charmer Dance'.

• It was included in UNESCO's representative list of the Intangible Cultural Heritage of Humanity from the year 2010.

• In Kalbelia dance, males play generally various traditional instruments and females of the Kalbelia Community perform the

dance.

• Kalbelia dance is one of the most sensuous dances among all Rajasthani dances.

Additional Information

State	Folk Dances
Madhya Pradesh	Thandai,Matki Dance,Gondla
Maharashtra	Lavani, Nakata, Koli, Lezim, Gafa, Dahikala Dasavtar
Himachal Pradesh	Himachali Ras,Jhumar,Chhari Dance,Giddi, Kullu Nach
Rajasthan	Ghumar, Chakri, Ganagor, Jhulan Leela, Jhuma, Suisini, Ghapal

Q16. Answer: (c) Vande Bharat Express

The correct answer is Vande Bharat Express.

Key Points

• Vande Bharat Express is an Indian high-speed intercity electric multiple unit train.

• It was designed and built by Integral Coach Factory (ICF) at Perambur, Chennai under the Indian government's Make in India initiative over a span of 18 months.

• During trials, it attained a maximum speed of 180km/hr.

• The actual top speed is restricted to 130 km/hr due to the speed limit of the railway track of routes, which are used by Vande Bharat Express.

Additional Information

• Vande Bharat has an air-conditioned chair car service with 16 coaches.

• It is an engine-less self-propelled train set that allows for faster acceleration and deceleration.

• Vande Bharat Express operates five days a week except on Monday and Thursday and covers the distance between New Delhi and Varanasi in eight hours.

Q17. Answer: (a) Only conclusion I follows.

The least possible Venn diagram for the given statements is as shown below :

Conclusions:

I. Some ghosts are washing machines → Follow (As some ghosts are shells and all shells are washing machines. As whole shells comes in washing washing machines and have some part common with ghosts, therefore it is true.)

II. No ghost is a washing machine → Does not follow (As some ghosts are shells and all shells are washing machines. As whole shells comes in washing washing machines and have some part common with ghosts, therefore it is false.)

Therefore Here, Only conclusion I follows.

Hence, the correct answer is "Option 1".

Q18. Answer: (d) 3600 m2

Given:

Manish fixed 48 poles in order to fence a square.

The distance between 2 poles is 5 m.

Formula used:

Total length of fencing = Number of poles × Distance between 2 poles

Perimeter of square = 4 × Side length

Area of square = Side length^2

Calculation:

Total length of fencing = 48 × 5 = 240 m

Perimeter of square = 4 × Side length

=> 240 = 4 × Side length

=> Side length = 240 / 4 = 60 m

Area of square = Side length^2

=> Area of square = 60^2 = 3600 m^2

Therefore The correct answer is option (4).

Q19. Answer: (a) Palaeolithic Period, Mesolithic Period, Neolithic Period

The correct answer is Palaeolithic Period, Mesolithic Period, Neolithic Period.

Key Points

• Palaeolithic*:*

• It is the earliest Stone age period dating 2.6 million years ago.

• The age is distinguished by most primitive stone tools. Humans during the era grouped together in small “bands” and were involved in gathering plants, fishing, and hunting.

• The palaeolithic period is the longest in human history.

• The age can be divided into lower Paleolithic, Middle Paleolithic, and Upper Paleolithic.

• During the end of the age, people developed spiritual and religious beliefs as depicted in some of the excavations.

Additional Information

• Mesolithic*:*

• The start and end of the age vary by geographical region. It is a transition period from hunting and gathering as in Paleolithic to domestication as in Neolithic.

• The tools used were the mode V chipped stone tools (microliths).

• Neolithic*:*

• It is the 3rd period of the stone age and is often referred to as the “New stone age”.

• Its time period is considered to be around 10,200 BC to 4,500BC, which ended with the beginning of the “Bronze Age”.

• Megalithic:

• **It is a small tool made up of flint or chert, used to form the points of hunting weapons.

Q20. Answer: (b) One

Given sequence of digits: 21461463714761241461621 2

According to the question, number of times where the numbers 4, 1 and 6 appeared together, 1 being in the middle and 4 and 6 being on either side of 1:

Condition: 4 - 1 - 6 OR 6 - 1 - 4

21461463714761241461621 2

Thus, there is one such time where the numbers 4, 1 and 6 appeared together, 1 being in the middle and 4 and 6 being on either side of 1.

Hence, "Option 2" is the correct answer.

Q21. Answer: (a) FGH

The logic followed here is:

Hence, "Option 1" is the correct answer.

Q22. Answer: (c) It is a ballistic missile.

The correct answer is It is a ballistic missile.

• Prithvi-II Missile

• Prithvi-II is an indigenously developed Surface-to-Surface Missile Short-Range Ballistic Missile (SRBM), having a range of around 250 - 350 km.

• It is single-stage liquid-fueled missile that has warhead ascending capacity of 500 - 1000 kg.

• It was initially evolved for the Indian Air Force but it was later inducted into the Indian Army as well.

• It is Developed by Defence Research and Development Organisation (DRDO) of India under its Integrated Guided Missile Development Programme.

• It is capable of striking targets with a very high degree of precision.

• Defence Research and Development Organisation (DRDO) is a military research and development wing of the Ministry of Defence, with headquarters in New Delhi, India. It was founded in 1958.

• Prithvi missile was India’s first indigenous ballistic missile.

• Wheeler Island, also known as Dr Abdul Kalam Island, is an island on the off-shores of Odisha in India, which hosts the Integrated Test Range missile testing facility.

• It is operated by the Defence Research and Development Organization (DRDO).

Q23. Answer: (c) Nita Ambani

The correct answer is Nita Ambani.

Key Points

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• The headquarters of the International Olympic Committee is in Lausanne, Switzerland.
• The IOC headquarters have been in Lausanne, on the shores of Lake Geneva, since 1915.
• It was Pierre de Coubertin who chose this city.

Additional Information

• International Olympic Committee
• The International Olympic Committee is the guardian of the Olympic Games and the leader of the Olympic Movement.
• It is committed to promoting sports in society, strengthening the integrity of sports and supporting clean athletes and other sports organisations.
• The IOC organizes the modern Olympic Games and Youth Olympic Games (YOG), held in summer and winter, every four years.
• The current president of the IOC is Thomas Bach.
• The three values of Olympism are excellence, friendship and respect.
• They constitute the foundation on which the Olympic Movement builds its activities to promote sport, culture and education with a view to building a better world.

Q24. Answer: (c) Shiwaliks

The correct answer is Shiwaliks.

Key Points

• The Shiwaliks are also known as Outer Himalayas.
• They are located in between the Great Northern Plains and the Lesser Himalayas.
• The Himalayan Frontal Fault separates the Northern Plains of India from the Shiwalik range.
• The altitude of Shiwaliks varies from 600 to 1500 metres.
• They run for a distance of 2,400 km from the Potwar Plateau to the Brahmaputra valley.
• The width of the Shiwaliks varies from 50 km in Himachal Pradesh to less than 15 km in Arunachal Pradesh.

Additional Information

• A fault is a crack in the Earth's lithosphere that occurs between two pieces of rock.
• Faults can range in length from a few millimeters to thousands of kilometers and are found all over the world.
• The term fault came from the Old French term falte, which means opening or gap.
• There are three different types of faults, which are separated by how the sections of rock move in relation to each other along the fault:
• Dip-Slip Faults - occur at an angle in comparison to the surface of Earth
• Strike-Slip Faults - rocks slide past one another
• Oblique-Slip Faults - combine dip-slip and strike-slip movements

Q25. Answer: (c) 700

Given:

Minimum marks required to pass = 33%

Marks obtained by candidate = 210

Marks candidate failed by = 21

Formula used:

Let the total marks be x

Pass marks = 33% of total marks = 0.33x

Calculation:

Since the candidate fails by 21 marks:

210 + 21 = 0.33x

=> 231 = 0.33x

=> x = 231/0.33

=> x = 700

Therefore The correct answer is option (3).

Q26. Answer: (b) Rs. 600

Given:

Amount after 2 years (A1) = Rs. 720

Amount after 7 years (A2) = Rs. 1020

Time difference = 5 years

Formula used:

Simple Interest (SI) = P × R × T / 100

Amount (A) = Principal (P) + Simple Interest (SI)

Calculations:

Let the principal be P and rate be R.

For the first 2 years:

720 = P + (P × R × 2 / 100)

=> 720 = P(1 + 2R/100)

For the next 5 years:

1020 = P + (P × R × 7 / 100)

=> 1020 = P(1 + 7R/100)

Now, subtract the first equation from the second:

1020 - 720 = P(1 + 7R/100) - P(1 + 2R/100)

=> 300 = P(5R/100)

=> P × 5R/100 = 300

=> P × R = 6000

Substitute P × R = 6000 in the first equation:

720 = P(1 + 2R/100)

=> 720 = P + (2 × 6000 / 100)

=> 720 = P + 120

=> P = 720 - 120

=> P = 600

Therefore The correct answer is option 2.

Q27. Answer: (a) 110

Given:

A boy was asked to multiply a given number with 5/11. Instead, he divided the same number by 5/11. His answer exceeded the correct answer by 192.

Formula used:

If the given number is x, then:

Correct answer = x × 5/11

Incorrect answer = x ÷ 5/11 = x × 11/5

Given that the difference between incorrect and correct answers is 192:

x × 11/5 - x × 5/11 = 192

Calculation:

=> 11x/5 - 5x/11 = 192

=> (121x - 25x)/55 = 192

=> 96x/55 = 192

=> 96x = 192 × 55

=> x = (192 × 55)/96

=> x = 110

Therefore The correct answer is option (1).

Q28. Answer: (c) 12° 36´

Given:

Radius (r) = 100 cm

Arc length (l) = 22 cm

Formula used:

θ = l/r

Where, θ is in radians.

Calculations:

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θ = 22/100

To convert radians to degrees:

Degrees = θ × 180/π

=> Degrees = 0.22 × 180/π

=> Degrees = 12.60

Converting decimal degrees to minutes:

=> 12° + 0.60 × 60'

=> 12° 36'

Therefore The correct answer is option (3).

Q29. Answer: (a) Ustad Moinuddin Khan

The correct answer is Ustad Moinuddin Khan.

Key Points

• Ustad Moinuddin Khan

• Ustad Moinuddin Khan was a renowned Indian classical musician, primarily known for his mastery of the sarangi.

• He belonged to the prestigious Jaipur gharana of Hindustani classical music.

• His music was characterized by its deep emotional depth, intricate improvisations, and soulful expressions.

• Ustad Moinuddin Khan was highly respected for his contributions to the preservation and propagation of the sarangi tradition.

Additional Information

• Asad Ali Khan

• Asad Ali Khan was a legendary Indian classical musician, a sarangi maestro from the Rampur-Sahaswan gharana.

• He was renowned for his virtuosity, innovative techniques, and soulful renditions.

• His music was characterized by its unique blend of traditional and contemporary elements, captivating audiences worldwide.

• Asad Ali Khan was a highly influential figure in the world of Indian classical music, inspiring generations of musicians.

• Ustad Sultan Khan

• Ustad Sultan Khan was a celebrated Indian classical musician, a sarangi maestro known for his exceptional technical prowess and soulful expressions.

• He belonged to the Rampur-Sahaswan gharana, a tradition renowned for its rich musical heritage.

• His music was characterized by its intricate improvisations, emotional depth, and unique rhythmic patterns.

• Ustad Sultan Khan was highly respected for his contributions to the sarangi tradition and his dedication to preserving its rich legacy.

• Sajjad Hussain

• Sajjad Hussain was a prominent Indian classical musician, a sarangi maestro from the Rampur-Sahaswan gharana.

• He was known for his virtuosity, soulful expressions, and deep understanding of the nuances of Hindustani classical music.

• His music was characterized by its intricate improvisations, emotional depth, and unique rhythmic patterns.

• Sajjad Hussain was highly respected for his contributions to the sarangi tradition and his dedication to preserving its rich legacy.

Q30. Answer: (a) Jarawa

The correct answer is Jarawa.

Key Points

• Jarawa Tribe:

• Indigenous people of the Andaman Islands in India.

• Inhabit parts of South Andaman and Middle Andaman Islands.

• Primarily hunter-gatherers, living in close connection with the forest.

• Considered a Particularly Vulnerable Tribal Group (PVTG) due to their isolation and vulnerability to outside influences.

Additional Information

• Ainu Tribe:

• Indigenous people of Japan, primarily inhabiting the northernmost island of Hokkaido.

• Distinct language and culture, with unique traditions and beliefs.

• Historically marginalized and faced discrimination.

• Currently, efforts are being made to revitalize Ainu culture and language.

• Tharu Tribe:

• Primarily reside in the Terai region of Nepal and India (Uttar Pradesh and Uttarakhand).

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• Known for their unique culture, traditional dance forms (like the Jhumar), and vibrant festivals.
• Primarily agricultural communities, with a strong connection to their land and natural resources.
• Fulani Tribe:
• One of the largest ethnic groups in Africa, spread across many countries including Nigeria, Cameroon, Senegal, and Mali.
• Primarily nomadic pastoralists, known for their cattle herding traditions.
• Rich cultural heritage, including music, dance, and intricate jewelry.
• Face challenges such as land disputes and climate change.

Q31. Answer: (c) Danish

Given: Four students Amit, Bharat, Chandan and Danish went to four different colleges-BDS, IIMT, DPS and IMS-to take admission in four different courses, namely, BA, BBM, BSc and BCom.

1) Chandan took admission in IMS and has opted for BA.

Students	Colleges	Courses
Amit		
Bharat		
Chandan	IMS	BA
Danish		

2) Amit took admission in BDS and has opted for BBM.

Students	Colleges	Courses
Amit	BDS	BBM
Bharat		
Chandan	IMS	BA
Danish		

3) Danish opted for BSc.

Students	Colleges	Courses
Amit	BDS	BBM
Bharat		
Chandan	IMS	BA
Danish		BSc

4) The student who took admission in IIMT has not opted for BSc.

As after assigning IIMT one position for college and course each is left which will be occupied by the left i.e DPS and BCom respectively.

Students	Colleges	Courses
Amit	BDS	BBM
Bharat	IIMT	BCom
Chandan	IMS	BA
Danish	DPS	BSc

Thus, according to the final arrangement, Danish took admission in DPS.

Hence, "Option 3" is the correct answer.

Q32. Answer: (a) Peace throughout the world

The correct answer is Peace throughout the world.

Key Points

United Nation

• The original emblem of the United Nations was created by a team of designers during the United Nations Conference on

International Organization in 1945.

• The design team was led by Oliver Lincoln Lundquist.

• Donal McLaughlin was among the team.

• He was an architect and graphic designer whose hastily concocted design for a lapel pin became one of the world's most recognizable symbols the official United Nations emblem, showing the continents embraced by olive branches.

• The UN emblem was designed to be "a map of the world representing an azimuthal equidistant projection centered on the North Pole, inscribed in a wreath consisting of crossed conventionalized branches of the olive tree, in gold on a field of smoke-blue with all water areas in white.

• The projection of the map extends to 60 degrees south latitude, and includes five concentric circles".

• The blue color in the flag represents peace in opposition to red, for war.

Additional Information

United Nations

• The United Nations (UN) is a global organization tasked with maintaining international peace and security while fostering friendly relations among nations. It is the largest, most recognized, and most powerful intergovernmental organization in the world.

• The United Nations (UN) is an international organization founded in 1945.

• It is currently made up of 193 Member States.

• Its mission and work is guided by the purposes and principles contained in its founding Charter and implemented by its various organs and specialized agencies.

The main organs of the UN are

• the General Assembly,

• the Security Council,

• the Economic and Social Council,

• the Trusteeship Council,

• the International Court of Justice,

• and the UN Secretariat.

Q33. Answer: (d) Lord Lytton

The correct answer is Lord Lytton.

Key Points

• The Vernacular Press Act, 1878, was introduced by Viceroy Lord Lytton during his tenure (1876–1880).

• The act aimed to curtail the freedom of the Indian-language press, which was critical of British policies, particularly during events like the Great Famine of 1876–78.

• The act symbolized British efforts to control dissent and curb nationalist sentiments in India.

• It was repealed in 1882 by Lord Ripon, the succeeding Viceroy, as part of his liberal policies.

Additional Information

• Lord Chelmsford 1916-1921

• Formation of Home Rule Leagues by Annie Besant and Tilak (1916).

• Lucknow session of the Congress (1916).

• Lucknow pact between the Congress and Muslim League (1916).

• Champaran Satyagraha (1917), Kheda Satyagraha (1918), and Satyagraha at Ahmedabad (1918)

• Government of India Act (1919).

• The Rowlatt Act (1919).

• Jallianwalla Bagh massacre (1919).

• Lord Hardinge

• Lord Hardinge served as Viceroy of India from 1910 to 1916.

• Lord Hardinge was the Viceroy when the Royal Commission on Civil Services was formed in 1912.

• The Royal Commission on Public Services in India is also known as the Islington Commission.

• It was created under the Chairmanship of Lord Islington.

• He shifted India's capital from Calcutta to Delhi in 1911.

• Bengal partition was cancelled by Lord Hardinge in 1911.

• 'Defence of India Act' was passed by Lord Hardinge in 1915.

• George V and Queen Mary visited India during the period of Lord Hardinge.

• Lord Minto:

• Gilbert Elliot-Murray-Kynynmound, 1st Earl of Minto, served as the Governor-General of India from 1807 to 1813.

• He focused on improving relations with the Indian princely states and played a key role in the Anglo-Maratha Wars.

Q34. Answer: (d) 6

Given:

How many significant digits are there to the right of the decimal point in the product of 95.75 and 0.02554?

Formula used:

Number of significant digits in the product = Sum of significant digits in the multiplicands

Calculation:

Significant digits in 95.75 = 2

Significant digits in 0.02554 = 5

Multiply 95.75 by 0.02554:

=> 95.75 × 0.02554 = 2.448815

=> Total significant digits = 6

Therefore, the number of significant digits to the right of the decimal point in the product is 6.

Therefore The correct answer is option (4).

Q35. Answer: (c) Lord Wellesley

The correct answer is Lord Wellesley.

Key Points

• Wellesley:

• Lord Wellesley served as the Governor-General of India from 1798 to 1805.

• He pursued an aggressive policy of expansion and territorial acquisition, leading to the establishment of British control over large parts of India.

Additional Information

• Lord Dalhousie

• Doctrine Of Lapse -Princely States Annexed

• The Doctrine of Lapse was an annexation policy adopted by the Britishers in India to expand their control.

• The doctrine of Lapse was based on Hindu law and Indian customs, but Hindu law seemed to be somewhat inconclusive on this point

• Lord Dalhousie annexed eight princely states under the Doctrine of Lapse Policy during his service.

• He is said to have annexed about a quarter-million square miles of the Indian territory.

• The first princely state to be annexed under the Doctrine of Lapse was Satara.

• Awadh was under the rule of Wajid Ali Shah when Lord Dalhousie announced annexing Awadh based on the allegation of ‘Internal Misrule”.

• Lord Curzon:-

• Lord Curzon served as the Viceroy of India from 1899 to 1905 under Queen Victoria.

• He was born on January 11, 1859, in Kedleston, Derbyshire, England.

• Curzon was a British Conservative statesman who later served as the Foreign Secretary from 1919 to 1924.

• He declared the partition of Bengal in 1905.

• The partition, was implemented for administrative reasons according to the British.

• It was a controversial action that led to widespread protests as it was seen by Indians as an attempt to "divide and rule," given that it separated the largely Muslim eastern areas from the Hindu western areas.

• Lord Bentinck

• He was the first Governor-General of India, introduced the Indian Press Act of 1835, which granted freedom to the press. The act was also intended to increase British popularity, as newspapers and the press were becoming the primary means of reaching the largest number of people.

• In 1835, Bentinck agreed to revise the press laws after receiving petitions from English and vernacular newspaper editors.

• In 1835, Sir Charles Metcalfe succeeded Bentinck and carried out the measure of granting complete freedom to the press.

• Bentinck was Governor-General of India from 1828–1835.

• He is credited with several significant social and educational reforms, including:

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Q36. Answer: (b) 240 km/h

Given:

An aeroplane flies along the sides of an equilateral triangle at the speed of 300 km/h, 200 km/h, and 240 km/h, respectively.

Formula used:

Average speed = Total distance / Total time

Calculation:

Let each side of the equilateral triangle be d km.

Total distance = 3d

Time taken to fly along each side:

Time1 = d / 300

Time2 = d / 200

Time3 = d / 240

Total time = (d / 300) + (d / 200) + (d / 240)

=> Total time = d (1/300 + 1/200 + 1/240)

=> Total time = d (0.0125)

Average speed = Total distance / Total time

=> Average speed = 3d / (d × 0.0125)

=> Average speed = 3 / 0.0125

=> Average speed = 240 km/h

Therefore The correct answer is option 2.

Q37. Answer: (a) watt

The correct answer is watt.

Key Points

• Power: The rate of work done by the electric energy is called power. It is denoted by P.

• The SI unit of power is the watt (W).

• Watt is a small unit that's why kilowatt-hour is used as the unit for electrical energy.

• 1 unit of electric energy: When one kilowatt load works for 1 hour then the energy consumed is called 1 unit of electricity.

1 Unit of electricity = 1 KWh = 1000 Watt-hour = 3.6 × 106 J

1 Kilo-watt = 1000 Watt

• 1 Watt: The energy consumption rate of 1 joule per second is called 1 watt.

Q38. Answer: (d) 16 days

Given:

Initial number of students = 100

Food provisions last for = 20 days

Number of students after joining = 100 + 25 = 125

Formula used:

Provisions per student per day = Total provisions / (Initial number of students × Number of days)

New duration = Total provisions / (New number of students × Provisions per student per day)

Calculation:

Provisions per student per day = Total provisions / (100 × 20)

=> Provisions per student per day = Total provisions / 2000

New duration = Total provisions / (125 × (Total provisions / 2000))

=> New duration = 2000 / 125

=> New duration = 16 days

Therefore The correct answer is option (4).

Q39. Answer: (c) Increasing the production of oil seeds

The correct answer is Increasing the production of oil seeds.

Key Points

The Yellow Revolution was a program launched in India to boost the production of edible oil, particularly from mustard and sesame seeds, to achieve self-reliance. The revolution began in 1986 and continued for a year up to 1987. It aimed to reduce the

country's dependence on imported edible oil and improve the availability of domestically produced edible oil.

Objectives of the Yellow Revolution

• The primary objectives of the Yellow Revolution were as follows:

• Increase edible oil production: The Yellow Revolution aimed to significantly increase the production of edible oil, particularly from mustard and sesame seeds, to meet the domestic demand and reduce reliance on imports.

• Improve oilseed productivity: The revolution focused on enhancing the productivity of oilseed crops through the adoption of improved varieties, agricultural practices, and technology.

• Expand oilseed cultivation: The Yellow Revolution aimed to expand the cultivation of oilseed crops to increase the overall production base and reduce the dependence on other crops for edible oil.

• Strengthen oilseed processing infrastructure: The revolution emphasized the development of oilseed processing infrastructure, including crushing mills and refining units, to improve the quality and availability of edible oil

Q40. Answer: (b) Bahadur Shah II

The correct answer is Bahadur Shah II.

Key Points

• Bahadur Shah II (Bahadur Shah Zafar) was the last Mughal Emperor.

• He was deposed by the British and exiled to Burma (Rangoon) following the Indian Rebellion of 1857.

• The Revolt of 1857 had made a futile attempt to declare him the Emperor of India.

• He was captured by the English and sent to Rangoon where he died in 1862.

Additional Information

• Alamgir II

• During the reign of Alamgir II, Delhi was occupied by Ahmed Shah Abdali.

• Ahmed Shah Abdali defeated Marathas in the Third Battle of Panipat in 1761.

• Aurangzeb

• The Mughal emperor Aurangzeb was known as Abul Muzaffar Muhi-ud-Din Muhammad Aurangzeb, commonly known as Aurangzeb or by his regional title Alamgir.

• Mohi-ud-din Mohammed Aurangzeb was born on Oct. 24, 1618, at Dohad and was the third son of Emperor Shah Jahan.

• Aurangzeb (1618-1707) was the sixth Mogul emperor of India and the last of the "Great Moguls."

• He extended the Mogul Empire to its farthest boundaries, but his reign was harsh and marked by revolts.

• He ruled over most of the Indian subcontinent during some parts of his reign, which lasted for 49 years from 1658 until he died in 1707.

• Mughal emperor Aurangzeb died in 1707 after a 49-year reign without officially declaring a crown prince.

• Ahmad Shah Bahadur

• During his reign, Ahmed Shah Abdali invaded India many times and Multan and Punjab were ceded to him.

Q41. Answer: (c) Chippa

The correct answer is Chippa.

Key Points

• Chippa Community

• The Chippa community is primarily known for its traditional occupation of dyeing and printing cloth.

• They are believed to have originated from the Kshatriya caste but later adopted this craft.

• Chippa artisans are renowned for their intricate block printing techniques, particularly in regions like Bagru in Rajasthan.

• They have significantly contributed to the vibrant textile traditions of India.

• The Chippa community has a rich cultural heritage, with its own distinct customs, traditions, and social structure.

• They are an integral part of the social fabric of Rajasthan and other regions where they reside.

• The Chippa community has faced challenges such as competition from mass-produced textiles and the need to adapt to changing market demands.

• However, efforts are being made to preserve their traditional skills and promote their craft as a valuable cultural heritage.

• The Chippa community continues to play a vital role in the Indian textile industry, contributing to its diversity and richness.

Additional Information

• Khatik Community

• The Khatik community is traditionally associated with leatherwork.

• They are skilled artisans who work with animal hides to create a variety of products, including shoes, leather goods, and other items.

• The Khatik community has a long history in India, with evidence of their craft dating back centuries.
• They have played a crucial role in the Indian economy, providing essential goods and services.
• The Khatik community faces challenges such as the decline of traditional leatherworking due to competition from synthetic materials.
• Efforts are being made to revive and promote traditional leatherworking skills, while also exploring new avenues for the Khatik community to utilize their expertise.
• The Khatik community is known for its resilience and adaptability, having successfully transitioned into other occupations while maintaining its cultural identity.
• They continue to contribute to the Indian economy and society, showcasing their skills and craftsmanship.
• Khatri Community
• The Khatri community is a prominent Hindu caste found throughout India, with a significant presence in Rajasthan.
• Traditionally, Khatris were associated with trade, commerce, and business.
• They have played a vital role in the economic development of India, establishing successful businesses and contributing to the growth of various industries.
• The Khatri community is known for its entrepreneurial spirit, business acumen, and strong family values.
• They have a rich cultural heritage, with a strong emphasis on education and social responsibility.
• Many Khatris have achieved prominence in various fields, including business, politics, and the arts.
• The Khatri community is known for its philanthropic activities and contributions to social causes.
• They have played a significant role in shaping the social and economic landscape of India.
• Bishnoi Community
• The Bishnoi community is a unique religious and social group found primarily in Rajasthan.
• They are known for their strict adherence to the principles of environmental conservation and animal protection.
• The Bishnoi philosophy emphasizes the interconnectedness of all living beings and the importance of preserving nature.
• They have a long history of environmental activism, dating back to the 15th century.
• The Bishnoi community has played a crucial role in protecting wildlife and natural resources in Rajasthan.
• They are known for their peaceful and non-violent approach to environmental conservation.
• The Bishnoi community has inspired environmental movements worldwide and serves as a model for sustainable living.

Q42. Answer: (d) Naomi Osaka

The correct answer is Naomi Osaka.

Key Points

• Naomi Osaka is the world's highest-paid female athlete, ranked first on Forbes' list of 'Highest-Paid Female Athletes 2020'.
• The Japanese star raked in $57.3 million in prize money and endorsements over the last year.
• The four-time Grand Slam champion has commercial deals with the likes of Tag Heuer and Louis Vuitton, in addition to partnerships with Nike, Beats by Dre, and Mastercard, among others.
• She also owns equity stakes in BodyArmor and Hyperice as well as becoming an investor in the professional women's soccer team, North Carolina Courage.
• She has helped raise awareness of mental health issues in sports.

Q43. Answer: (c) Corporate governance

The correct answer is Corporate governance.

Key Points

• Kumar Mangalam Birla Committee (1999)
• It was constituted by the Securities and Exchange Board of India (SEBI) to recommend a code of corporate governance.
• The committee laid the foundation for the SEBI's code of corporate governance in India.
• Its recommendations led to the insertion of Clause 49 in the Listing Agreement, which prescribed mandatory and non-mandatory provisions for corporate governance for listed companies.

Additional Information

• Corporate Governance
• It refers to the system by which companies are directed and controlled.
• It involves regulatory and market mechanisms, roles and relationships between a company's management, its board, shareholders, and other stakeholders.
• Clause 49 of the Listing Agreement
• Introduced by SEBI in 2000 based on the recommendations of the Kumar Mangalam Birla Committee.

• It mandates specific corporate governance practices such as the composition of the board, the role of independent directors, and the establishment of audit committees.

• SEBI (Securities and Exchange Board of India)

• It is the regulator for the securities market in India.

• SEBI's primary function is to protect the interests of investors in securities and to promote the development of, and regulate, the securities market.

Q44. Answer: (b) Chlorophyll

The correct answer is Chlorophyll.

Key Points

• Chlorophyll:

• This is the primary pigment responsible for photosynthesis in plants and algae.

• It's a green pigment that absorbs light energy from the sun, particularly in the blue and red regions of the spectrum.

• This absorbed energy is then used to convert carbon dioxide and water into glucose (sugar) through a complex series of chemical reactions.

Additional Information

• Carotene:

• This is a yellow-orange pigment found in plants, fruits, and vegetables.

• It belongs to a group of pigments called carotenoids.

• While it doesn't directly participate in photosynthesis, it plays a crucial role as an accessory pigment.

• Carotene absorbs light energy and transfers it to chlorophyll, enhancing the efficiency of photosynthesis.

• Zeaxanthin:

• Another carotenoid pigment, zeaxanthin is responsible for the yellow-orange color of many fruits and vegetables, such as corn and peppers.

• It plays a vital role in protecting the eye from harmful blue light and oxidative damage.

• Zeaxanthin is also a powerful antioxidant, helping to protect cells from damage caused by free radicals.

• Phycocyanin:

• This is a blue-green pigment found in cyanobacteria (blue-green algae) and some red algae.

• It belongs to a group of pigments called phycobiliproteins.

• Phycocyanin absorbs light energy in the orange and red regions of the spectrum and transfers it to chlorophyll, enabling photosynthesis in these organisms.

Q45. Answer: (b) National Rail and Transportation Insitute

The correct answer is National Rail and Transportation Insitute.

Key Points

• National Rail and Transportation Institute (NRTI):

• Established in 2018, NRTI is a public university located in Vadodara, Gujarat.

• It offers undergraduate and postgraduate programs in various fields related to transportation and logistics, including engineering, management, and technology.

• NRTI aims to be a center of excellence for research and innovation in the transportation sector, addressing the evolving needs of the Indian economy.

• It focuses on developing skilled professionals to meet the growing demands of the rail and transportation industry.

Additional Information

• Rashtriya Rail Vishwavidyalaya:

• This is a proposed central university dedicated to rail transportation and logistics.

• The establishment of this university is aimed at providing specialized education and research facilities in areas such as railway engineering, management, and technology.

• It is expected to play a crucial role in advancing railway technology and improving the efficiency of the Indian railway system.

• The university is currently in the planning stages and is expected to be a significant addition to the Indian higher education landscape.

• Indian Rail and Roadways Institute:

• This institute is likely a fictional or a lesser-known institution.

• There is no widely recognized educational institution with this exact name in India.

• It's possible that it refers to a specific training center or a regional institute focused on rail and road transportation.

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• Institute of Rail Management of India (IRIM):

• IRIM is a premier institution for management education in the Indian Railways.

• It offers various management programs, including postgraduate diplomas and executive development programs, specifically designed for railway officials.

• IRIM plays a crucial role in enhancing the managerial capabilities of railway personnel and improving the overall efficiency of railway operations.

• It is known for its focus on practical training and industry-relevant curriculum.

Q46. Answer: (c) cohesive force

The correct answer is cohesive force.

Key Points

• Cohesive Forces:

• These are the attractive forces between molecules of the same substance.

• In liquids, cohesive forces pull molecules together, keeping them in a relatively compact state.

• Stronger cohesive forces lead to higher surface tension.

Additional Information

• Adhesive Forces:

• These are the attractive forces between molecules of different substances.

• For example, the adhesive forces between water molecules and the glass walls of a container allow water to wet the glass.

• Capillarity:

• This phenomenon arises from the interplay of cohesive and adhesive forces.

• It refers to the ability of a liquid to flow in narrow spaces against the force of gravity. When adhesive forces are stronger than cohesive forces, the liquid tends to rise in a narrow tube (like a capillary).

• Surface Tension:

• This is the tendency of the surface of a liquid to contract to the smallest possible area.

• It's caused by the imbalance of forces acting on the surface molecules.

• Molecules at the surface experience a net inward force, pulling them together and creating a "skin" on the liquid's surface.

Q47. Answer: (c) Thailand

The correct answer is Thailand.

Key Points

• The 35th summit of the Association of South-East Asian Nations, held in Bangkok.

• The Asian South-East Nations Association(ASEAN) is a regional intergovernmental organization comprising 10 Southeast Asian countries, fostering intergovernmental cooperation and promoting economic, educational, political, security, military, and socio-cultural integration between its members and other Asian nations.

Additional Information

• ASEAN was followed by an organization established on July 31, 1961, named the Association of Southeast Asia (ASA), a Thai group, the Philippines, and the Malaysian Federation.

• It was established on 8 August 1967, when the ASEAN Declaration was signed by the foreign ministers of five countries: Indonesia, Malaysia, the Philippines, Singapore, and Thailand.

• It was awarded observer status at the UN General Assembly in 2006.

Q48. Answer: (d) In these waves, the particles of the medium vibrate perpendicular to the direction of propagation of the wa...

The correct answer is In these waves, the particles of the medium vibrate perpendicular to the direction of propagation of the waves.

Key Points

Wave motion:

• The type of disturbance that travels through a medium due to repeated vibrations of the particles of the medium about their mean positions is called wave motion.

• The sound wave is a kind of mechanical wave.

There are two types of wave motion:

Longitudinal wave motion:

• It is that wave motion in which individual particles of the medium execute simple harmonic motion about their mean position along the same direction, in which the wave is propagated.

• For example: Sound waves

Transverse wave motion:

• The vibration of particles in a medium and the propagation of waves are perpendicular to each other.

• Example: Waves in the surface of the water, waves in a string, light waves, etc.

Q49. Answer: (c) 192

The logic followed here is:

Hence, "Option 3" is the correct answer.

Q50. Answer: (c) Yes, they are in proportion.

Given:

Are the numbers 30, 40, 45, and 60 in proportion?

Formula used:

To check if numbers a, b, c, and d are in proportion, we use the formula:

a/b = c/d

Calculation:

30, 40, 45, and 60

=> 30/40 = 45/60

=> 3/4 = 3/4

=> Both sides are equal

Therefore The correct answer is option (3).

Q51. Answer: (d) OQHJDF

The logic followed here is:

'SUN' is written as 'RTTVMO'

And,

'JOB' is written as 'IKNPAC'

Similarly,

'PIE' is written as

Hence, "Option 4" is the correct answer.

Q52. Answer: (c) 18739

The logic followed here is:

Thus, it should be 18740 instead of 18739.

Hence, "Option 3" is the correct answer.

Q53. Answer: (d) 8 - 256

The logic followed here is:

Option 1) 6 - 216

$6^3 = 216$

216 = 216 (LHS = RHS)

Option 2) 9 - 729

93 = 729

729 = 729 (LHS = RHS)

Option 3) 7 - 343

73 = 343

343 = 343 (LHS = RHS)

Option 4) 8 - 256

83 = 256

512 ≠ 256 (LHS ≠ RHS)

Thus, out of all the options '8 - 256' is the odd one out.

Hence, "Option 4" is the correct answer.

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Q54. Answer: (b) Barren Island

The correct answer is Barren Island.

Key Points

• The only active volcano of India is situated in the Barren Island volcano of the Andaman and Nicobar Islands.

• It is composed of ash and spewing lava. A team of scientists from the National Institute of Oceanography (NIO) Goa identified this and had done an expedition on this. The volcano was erupting in small episodes lasting around 5-10 minutes.

• Barren Island has located about 140 km from Port Blair. It is surrounded by waters which is ideal for scuba diving and is home to a wide variety of aquatic life.

• It's the only active volcano in India along a chain of volcanoes from Sumatra (Indonesia) to Myanmar.

• The current Lieutenant Governor of Andaman&Nicobar Island is Mr. Admiral D K Joshi.

Additional Information

There are three types of volcanoes based on the different stages in the volcano's life. These are Active, Dormant, and Extinct.

Volcano	Characteristics
Active volcano	• The volcanoes erupt regularly - For example, Kīlauea in Hawaii, Mount Etna in Italy, and Mount Stromboli, Cotopaxi, Ecuador
Dormant volcano	• Dormant volcanoes are volcanoes that have not erupted in a long time but are expected to erupt again in the future. - Examples of dormant volcanoes are Mount Kilimanjaro, Tanzania, Africa, and Mount Fuji in Japan.
Extinct volcano	• Extinct volcanoes are those which have not erupted in human history. - Examples of extinct volcanoes are Mount Thielsen in Oregon in the US and Mount Slemish in Co. Antrim.

Q55. Answer: (b) Bob and Alice

The correct answer is Bob and Alice.

Key Points

• The names of the Facebook AI robots that were shut down were Bob and Alice.

• In 2017, Facebook researchers observed an unexpected behavior from these chatbots.

• Instead of communicating in English as intended, Bob and Alice began to converse in a novel, invented language. This new language was a form of shorthand, allowing them to communicate more efficiently with each other.

• While this demonstrated the impressive ability of AI to develop its own communication methods, it also raised concerns among researchers.

• The use of a language incomprehensible to humans could potentially lead to unintended consequences and make it difficult to control or understand the AI's actions.

• As a precautionary measure, Facebook researchers decided to shut down the experiment.

• This incident highlighted the potential challenges and unforeseen consequences that can arise in AI development, emphasizing the importance of careful monitoring and responsible research practices.

• The shutdown of Bob and Alice served as a valuable lesson in the field of AI, underscoring the need for robust safety measures and a thorough understanding of the potential implications of advanced AI systems.

Q56. Answer: (a) 25 km

Given:

A train is travelling at a uniform speed of 75 km/h. How far will it travel in 20 minutes.

Formula used:

Distance = Speed × Time

Calculation:

Speed = 75 km/h

Time = 20 minutes = 20/60 hours = 1/3 hours

=> Distance = 75 km/h × 1/3 hours

=> Distance = 25 km

Therefore The correct answer is option 1.

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Q57. Answer: (b) 80°

Given:

Two adjacent angles form an angle of 100º. The larger angle is 20º less than five times the smaller angle.

Formula used:

Let the smaller angle be x.

Larger angle = 5x - 20

Adjacent angles form a sum of 100º:

x + (5x - 20) = 100

Calculations:

x + 5x - 20 = 100

=> 6x - 20 = 100

=> 6x = 120

=> x = 20

Larger angle = 5x - 20

=> Larger angle = 5(20) - 20

=> Larger angle = 100 - 20

=> Larger angle = 80º

Therefore The correct answer is option (2).

Q58. Answer: (a) 41

Given:

Three whole cakes weigh 4(1/2) lbs, 6(3/4) lbs, and 7(1/5) lbs, respectively.

Formula used:

To find the maximum number of guests that can be served, we need to find the greatest common divisor (GCD) of the weights of the cakes.

Calculations:

First, convert the mixed fractions to improper fractions:

4(1/2) = 9/2

6(3/4) = 27/4

7(1/5) = 36/5

Find the GCD of the denominators 2, 4, and 5:

The GCD of 2, 4, and 5 is 1.

Convert the improper fractions to have a common denominator:

9/2 = 90/20

27/4 = 135/20

36/5 = 144/20

Find the GCD of the numerators 90, 135, and 144:

The GCD of 90, 135, and 144 is 9.

Therefore, the weight of each piece is 9/20 lbs.

Calculate the total number of pieces:

Total weight of all cakes = 9/2 + 27/4 + 36/5

Convert the fractions to a common denominator:

9/2 = 90/20

27/4 = 135/20

36/5 = 144/20

Total weight = (90 + 135 + 144)/20 = 369/20 lbs

Number of pieces = Total weight / weight of each piece:

Number of pieces = 369/20 / 9/20 = 369/9 = 41

Therefore The correct answer is option (1).

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Q59. Answer: (d) 40√2 cm

Given:

Diagonal (d) = 20 cm

Formula used:

For a square with side length (s), the relationship between the diagonal and side is given by: d = s√2

Perimeter (P) of a square is given by: P = 4s

Calculation:

20 = s√2

=> s = 20/√2

=> s = 10√2 cm

P = 4s

=> P = 4 × 10√2 cm

=> P = 40√2 cm

Therefore The correct answer is option 4.

Q60. Answer: (a) Andhra Pradesh

The correct answer is Andhra Pradesh.

Key Points

• NISHTHA:

• National Initiative for School Heads' and Teachers' Holistic Advancement (NISHTHA) is a national mission to improve learning outcomes at the elementary level.

• This is done through integrated teacher training.

• It is the largest teachers' training programme of its kind in the world.

• It has been launched under the Centrally Sponsored Scheme of Samagra Shiksha in 2109-20.

• Objective:

• To motivate and equip teachers to encourage and foster critical thinking in students and also teachers will get awareness and develop their skills on various aspects.

Additional Information

• Expected outcomes:

• Improvement in learning outcomes of the students.

• Creation of an enabling and enriching inclusive classroom environment.

• Teachers are trained as first-level counsellors to be alert and responsive to the social, emotional and psychological need of students.

• Teachers are trained to use Art as pedagogy leading to increased creativity and innovation among students.

• Teachers are trained to develop and strengthen the personal-social qualities of students for their holistic development

• Creation of a healthy and safe school environment.

• Integration of ICT in teaching-learning and assessment.

• Develop stress-free School-Based Assessment focused on the development of learning competencies.

• Teachers adopt Activity Based Learning and move away from rote learning to competency-based learning.

Q61. Answer: (a) 22

Given:

The LCM of two co-prime numbers is 638. If one number is 29, then the other number is:

Formula used:

LCM of two co-prime numbers = Product of the numbers

Calculation:

Let the other number be x.

According to the formula:

LCM = 29 × x

638 = 29 × x

=> x = 638 / 29

=> x = 22

Therefore The correct answer is option (1).

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Q62. Answer: (d) UMAS

The logic followed here is:

Hence, "Option 4" is the correct answer.

Q63. Answer: (b) Nirmala Sitharaman

The correct answer is Nirmala Sitharaman.

Key Points

• Nirmala Sitharaman is the current Minister of Finance and Corporate Affairs in India.

• She has previously held the position of the Minister of Commerce and Industry from 2014 to 2017.

• In her role as the Finance Minister, she is responsible for overseeing the economic policies of the country, including the preparation of the annual budget.

• She plays a crucial role in shaping the country's fiscal policies and ensuring financial stability.

• Nirmala Sitharaman has also been involved in various reforms aimed at boosting the Indian economy and promoting fiscal responsibility.

Q64. Answer: (c) 31 litres

Given:

Three different containers contain a mixture of milk and water, measuring 403 litres, 434 litres and 465 litres, respectively.

Formula used:

To find the biggest measure that can measure all quantities exactly, we need to find the Highest Common Factor (HCF) of the three numbers.

Calculation:

First, find the HCF of 403 and 434:

403 = 13 × 31

434 = 2 × 7 × 31

Common factor = 31

Next, find the HCF of 31 and 465:

465 = 3 × 5 × 31

Common factor = 31

=> The HCF of 403, 434 and 465 is 31

Therefore The correct answer is option (3).

Q65. Answer: (c) @ ! L % G *

The logic followed here is:

'DIVIDENT' is written as '# % G % # * @ L'

'DADDY' is written as '# ! # # O'

Thus, 'NATIVE' is written as @ ! L % G *.

Hence, "Option 3" is the correct answer.

Q66. Answer: (d) Turkey and Georgia

The correct answer is Turkey and Georgia.

Key Points

• "Transcontinental" describes a country that spans across two or more continents.

• A transcontinental country is a sovereign state that has territory located on more than one continent.

• Examples:

• Russia: The most prominent example, spanning both Europe and Asia.

• Turkey: Situated in both Europe and Asia.

• Egypt: Primarily in Africa, but includes the Sinai Peninsula in Asia.

• Kazakhstan: Mostly in Asia, with a small portion in Europe.

• These countries experience unique geographical, cultural, and political influences due to their position across multiple continents.

• The exact continental boundaries can sometimes be subject to debate, particularly in cases like Russia and Turkey.

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Q67. Answer: (d) Regulating Act 1773

The correct answer is Regulating Act 1773.

Key Points

• The Regulating Act was passed in the British Parliament in June 1773.

• It was the first parliamentary ratification and authorization defining the power and authority of east India company with respect to its Indian possessions.

• Reason / Background for passing the act

• The East India Company was in severe financial crisis and had asked a loan of 1 million pounds from the British government in 1772.

• Allegation of corruption and nepotism were rampant against company officials.

• Complexities created due to the dual form of administration instituted by Robert clive.

• The defeat of the company against Mysore's Hyder Alii in 1769.

• Provision of the regulating act

• Permitted the company to retain its territorial possessions in u=India under its control but regulated the activity of a company that's wahy is called regulating act.

• Provision for appointment of governor-general assisted with four councilors.

• Warren hasting was the first governor-general.

• The governor in council at Madras and Bombay were brought under the direct control of Bengal.

• Provision for the establishment of the supreme court at forte William Calcutta.

• Drawbacks of the regulating act

• The governor-general had no veto power.

• Power of the supreme court ere not well defined.

Additional Information

• Charter Act, 1793:

• Charter Act of 1793 put municipal institutions on a statutory basis.

• This meant that they were now legally recognized and could function under the authority of the British East India Company.

• The Act also gave the municipalities the power to collect taxes and spend money on local improvements, such as roads, bridges, and schools.

• The Charter Act of 1793 was a significant step in the development of municipal government in India.

• It helped to create a more efficient and accountable system of local administration, and it laid the foundation for the modern municipal system that exists in India today.

• Pitt's India Act 1784:

• It established an authority in England to supervise the company's affairs. This is known as the Board of Control having 6 members.

• Governor-General in the council has more powers over Bombay and Madras Governors in matters related to the War, Revenue and Diplomacy.

• In India, the strength of the executive council was reduced from four to three.

• The term ‘British possessions in India’ was used for the first time.

• Government of India act 1858

• Government of India Act 1858 provided that India will be governed by and in the name of Her Majesty. Designation of Governor-General of India was changed to Viceroy of India and Lord Canning became the first Viceroy of India.

• Office of Secretary of State was established which was given complete authority and control over Indian administration. The Secretary of State was a member of the British cabinet and ultimately responsible to British Parliament.

• Government of India Act 1858 established a 15 member Council of India to assist the Secretary of State. Secretary of State was made the Chairman of this council.

• Government of India Act 1858 also abolished the system of double government.

Q68. Answer: (b) A traditional bull-taming sport popular in Tamil Nadu

The correct answer is A traditional bull-taming sport popular in Tamil Nadu.

Key Points

• Jallikattu is a bull-taming sport traditionally organized in the Tamil Nadu state, as an important part of the Pongal festival called the Maatu Pongal.

• Alanganallur, Palamedu, and Avaniyapuram in Madurai district are the most popular venues for Jallikattu, which is mostly held in central and southern Tamil Nadu districts during the harvest festival of Pongal and a few months after that.

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Additional Information

• Festivals Of Tamil Nadu:

• Pongal

• Thiruvaiyaru Festival

• Thaipusam

• Natyanjali Dance Festival

• Mahamaham

• Karthigai Deepam

Q69. Answer: (c) Dr. Homi J Bhabha

The correct answer is Dr. Homi J Bhabha.

Key Points

Dr. Homi J. Bhabha developed the technology of underground nuclear explosion.

• Homi Jenhagir Bhabha was an Indian physicist who is often considered the father of the Indian nuclear program.

• In 1954, Bhabha founded a nuclear research center at Trombay which was later renamed the Bhabha Atomic Research Centre (BARC). A strong proponent of nuclear energy, Bhabha organized the first UN Conference on the Peaceful Uses of Atomic Energy in 1955. He was the head of India's nuclear program until his death.

Additional Information

• Facts About Dr. C V Raman:

• Name: Dr. Chandrashekhra Venkataraman or C.V. Raman

• Born on: 7 November 1888

• Place of Birth: Tiruchirappalli, Tamil Nadu

• Father's Name: R. Chandrashekhara Aiyer

• Mother's Name: Parvathi Ammal

• Spouse Name: Lokasundari Ammal

• Died on: 21st November 1970

• Place of Death: Bangalore, India

• Discovery: Raman Effect

• Awards: Matteucci Medal, Knight Bachelor, Hughes Medal, Nobel Prize in Physics, Bharat Ratna, Lenin Peace Prize, Fellow of the Royal Society.

• Dr. APJ Abdul Kalam

• Dr APJ. Abdul Kalam was the 11th President of India.

• He served as the president of India from 2002 to 2007.

• He was the first scientist to become the president of India.

• He is well known as the "missile man of India".

• He was honored with the Bharat Ratna award in 1997.

• He died on 27th July 2015

• "Wings of Fire" is the autobiography of Dr. APJ. Abdul Kalam

• Notable works are:

• The luminous spark.

• India 2020.

• Mission India

• Ignited Minds.

• Indomitable Spirit.

• Inspiring Thoughts.

• Srinivasa Ramanujan

• Srinivasa Ramanujan was born on 22 December 1887.

• His birthay is celebrated as National Mathematics Day in India.

• The day was first introduced by Manmohan Singh on 26 February, 2012.

• The mathematician compiled about 3,900 results and nearly all his claims have been proven correct.

• Some of his famous results are the Ramanujan prime and theta function.

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Q70. Answer: (a) Mean

Given:

The mass of five meteorites found on earth are 23.5 kg, 15 kg, 20 kg, 22 kg and 16 kg.

Formula used:

Mean = (Sum of all values) / (Number of values)

Calculation:

Mean = (23.5 + 15 + 20 + 22 + 16) / 5

=> Mean = 96.5 / 5

=> Mean = 19.3 kg

Therefore The correct answer is option (1).

Q71. Answer: (b) Access, equity and quality of education

The correct answer is Access, equity and quality of education.

Key Points

• SWAYAM Scheme: Odisha To Provide Interest-Free Loans To Unemployed Youths.

• 'Swayam' aims to create self-employment opportunities for rural and urban youth aged 18-35 years.

• Eligible individuals can receive interest-free loans of up to Rs 1 lakh for starting or expanding their businesses.

• The scheme targets unemployed or underemployed youth without outstanding loans from government-supported schemes.

• For urban youth, the scheme 'Swayam (Urban)' facilitates self-employment with similar loan provisions.

• The initiative is expected to be operational for two years, with a total budget outlay of Rs 672 crore from the state's coffers.

Q72. Answer: (c) OQR

The logic followed here is:

Option 1) IKM

Option 2) CEG

Option 3) OQR

Option 4) ACE

Hence, the correct answer is "Option 3".

Q73. Answer: (a) Chameleons

The correct answer is Chameleons.

Key Points

• Chameleon vision:

• Chameleons mostly live in the rain forests and deserts of Africa.

• The colour of their skin helps them blend in with their habitats.

• They often change colour to warm up or cool down.

• All chameleons have a prize pair of eyes.

• Their eyes can move in two different directions at once, giving the lizards a panoramic view of their surroundings.

• This type of vision is called monocular vision.

• This helps the animal to keep tracking two items at the same time with smooth pursuit.

Additional Information

• Binocular vision:

• In biology, binocular vision is a type of vision in which an animal has two front-facing eyes.

• This helps to perceive a single three-dimensional image of its surroundings.

• It gives a wider field of view.

• Example: Most mammals

Q74. Answer: (a) remains the same

Given:

When an arm of an angle is extended to double its length

Formula used:

The measure of an angle is independent of the length of its arms.

Calculation:

Extending the arm of the angle does not affect the angle itself.

=> The measure of the angle remains the same.

Therefore The correct answer is option 1.

Q75. Answer: (a) 27.3 earth days

The correct answer is 27.3 earth days.

Key Points

• Since the moon takes 27.3 days to complete one revolution around the earth and also the period of the rotation of the moon on its axis takes around 27.3 days

• Thus, the rotation time of the moon to rotate on its axis overlaps with its revolution along with the orbital plane. The moon completes 1 rotation on its axis as it completes one revolution around the Earth. As a result, we will see somewhat, Moon always has the same face towards the earth.

• The moon travels around the earth in an elliptical orbit.

• When the moon is closest to earth, its rotation is slower. so an additional 8 degrees are visible on the eastern side.

• When the moon is farthest from the earth, its rotation is faster. so, an additional 8 degrees are visible on the western side.

Additional Information

• Phases of the moon:

• New Moon: On this day, the moon is between the earth and the sun align in a straight line. And the moon becomes invisible.

• Full moon: On this day, a perfect round-shaped moon appears.

• Crescent Moon: The shape of the moon during the phases between the new moon and half-moon is the crescent moon.

• Gibbous Moon: The shapes of the moon during the phases between the full moon and half-moon are the gibbous moon. Since the moon takes 27.322 days to complete one revolution around the earth and also the period of the rotation of the moon on its axis takes around 27.3 days

Q76. Answer: (c) Virtual Reality

The correct answer is Virtual Reality.

Key Points

• Virtual reality creates an immersive artificial world that can seem quite real via the use of technology.

• The simulated environment can be similar to the real world, as in simulations for pilot or combat training, or it can differ significantly from reality.

• Statement 'B' is false as it hasn't been mentioned in the passage that it is easy to create a high-fidelity virtual reality experience.

• It becomes difficult to create a high fidelity due to the limited equipment.

• it is currently very difficult to create a high fidelity virtual reality experience, largely due to technical limitations on processing power, image resolution, and communication bandwidth.

Q77. Answer: (c) 36

Given:

Out of six consecutive numbers, the sum of the first three numbers is 27.

Formula used:

For six consecutive numbers: x, (x+1), (x+2), (x+3), (x+4), (x+5)

Sum of first three numbers = x + (x+1) + (x+2)

Sum of next three numbers = (x+3) + (x+4) + (x+5)

Calculation:

Given: x + (x+1) + (x+2) = 27

=> 3x + 3 = 27

=> 3x = 27 - 3

=> 3x = 24

=> x = 8

Sum of next three numbers = (x+3) + (x+4) + (x+5)

=> (8+3) + (8+4) + (8+5)

=> 11 + 12 + 13

=> 36

Therefore The correct answer is option 3.

Q78. Answer: (d) infrasound

The correct answer is infrasound.

Key Points

• The audible sound for human beings extends from the frequency range of about 20 Hz to 20000 Hz (one Hz = one cycle/s).

• Children under the age of five and some animals, such as dogs can hear up to 25 kHz (1 kHz = 1000 Hz).

• The police use high frequency whistles which dogs can hear but humans cannot.

Additional Information

• Infrasonic sound or Infrasound

• Sounds of frequencies below 20 Hz are called infrasonic sound or infrasound.

• If we could hear infrasound we would hear the vibrations of a pendulum just as we hear the vibrations of the wings of a bee.

• Rhinoceroses communicate using infrasound of frequency as low as 5 Hz. Whales and elephants produce sound in the infrasound range. It is observed that some animals get disturbed before earthquakes. Earthquakes produce low-frequency infrasound before the main shock waves begin which possibly alert the animals.

• Ultrasonic sound or Ultrasound

• Frequencies higher than 20 kHz are called ultrasonic sound or ultrasound.

• Ultrasound is produced by dolphins, bats and porpoises. Moths of certain families have very sensitive hearing equipment. These moths can hear the high frequency squeaks of the bat and know when a bat is flying nearby, and are able to escape capture. Rats also play games by producing ultrasound.

• The ultrasound equipment, familiar to us for investigating and tracking many medical problems, works at frequencies higher than 20,000 Hz.

• Hearing Aid

• As people grow older their ears become less sensitive to higher frequencies and people with hearing loss may need a hearing aid.

• A hearing aid is an electronic, battery operated device that receives sound through a microphone which converts the sound waves to electrical signals.

• These electrical signals are amplified by an amplifier and the amplified electrical signals are given to a speaker of the hearing aid.

• The speaker converts the amplified electrical signal to sound and sends to the ear for clear hearing.

Q79. Answer: (b) 1765

The correct answer is 1765.

Key Points

• The East India Company acquired the Diwani rights over Bengal in the year 1765.

• This marked a pivotal turning point in Indian history, as it effectively established British control over the region's administration and finances.

• The Diwani, or the right to collect land revenue, was a crucial source of income for the Mughal Empire, and its transfer to the Company signified a significant erosion of Mughal authority.

Additional Information

• The acquisition of the Diwani rights stemmed from the Battle of Buxar,

• It was fought on October 23, 1764, between the British East India Company forces led by Robert Clive and the combined armies of Mir Qasim (the Nawab of Bengal), Shuja-ud-Daulah (the Nawab of Awadh), and the Mughal Emperor Shah Alam II.

• The battle resulted in a decisive British victory, paving the way for the Company to secure the Diwani rights through the Treaty of Allahabad signed on August 12, 1765.

• Under the terms of the treaty, Shah Alam II granted the East India Company the Diwani rights in return for an annual tribute of 26 lakhs of rupees.

• This grant of power allowed the Company to directly collect taxes from the people of Bengal, Bihar, and Orissa, significantly bolstering its financial resources and solidifying its dominance in the region.Under the terms of the treaty, Shah Alam II granted the East India Company the Diwani rights in return for an annual tribute of 26 lakhs of rupees.

• This grant of power allowed the Company to directly collect taxes from the people of Bengal, Bihar, and Orissa, significantly bolstering its financial resources and solidifying its dominance in the region.

Q80. Answer: (b) 20%

Given:

Principal (P) = Rs. 1,000

Amount (A) = Rs. 1,440

Time (t) = 2 years

Formula used:

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

Where, r = rate

Calculation:

1440 = 1000 (1+r/100)²

=> 1440/1000= (1+r/100)²

=> 36/25= (1+r/100)²

=> 6/5= (1+r/100)

=> 6/5-1= r/100

=> 1/5= r/100

=> r = 20%

Therefore The correct answer is option (2).

Q81. Answer: (a) 1/8

Given:

Find the value of 4 - 5/(1 + 1/(3 + 1/(2 + 1/4)))

Formula used:

Expression simplification

Calculation:

4 - 5/(1 + 1/(3 + 1/(2 + 1/4)))

=> 4 - 5/(1 + 1/(3 + 4/9))

=> 4 - 5/(1 + 9/31)

=> 4 - (5 × 31)/40

=> (160 - 155)/40

=> 5/40

=> 1/8

Therefore The correct answer is option (1).

Q82. Answer: (a) Cryptography

The correct answer is Cryptography.

Key Points

• Cryptography is a specialized area of Cybersecurity.

• Cryptography is also defined as the study of secure communications techniques that allow only the sender and intended recipient of a message to view its contents.

• It covers the obfuscation of information in images using techniques such as microdots or merging.

• It is used to protect written documents.

• The main purpose of cryptography appears to be making content and images undecipherable, the true goal of cryptography in an information technology context is to ensure the confidentiality and integrity of any information technology system.

Additional Information

• Cloud computing

• Cloud computing is a service.

• The on-demand, pay-as-you-go delivery of IT resources through the Internet is known as cloud computing.

• You can acquire technology services from a cloud provider on an as-needed basis, such as computing power, storage, and databases, rather than purchasing, owning, and maintaining physical data centres and servers.

• Block chain

• A blockchain collects information together in groups, known as blocks, that hold sets of information

• It is a distributed database existing on multiple computers at the same time, which constantly grows as new sets of recordings or blocks are added to it

• Blocks have certain storage capacities and, when filled, are closed and linked to the previously filled block, forming a chain of data known as the blockchain.

• All new information that follows that freshly added block is compiled into a newly formed block that will then also be added to the chain once filled the data is secured.

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Q83. Answer: (a) 5

Given:

The value of √(16 + √(80 + √(5000 - 4999))) is:

Formula used:

We need to solve the expression step by step:

Calculations:

First, calculate the innermost square root:

=> √(5000 - 4999) = √1 = 1

Next, substitute this value into the expression:

=> √(80 + 1) = √81

Next, calculate the square root of 81:

=> √81 = 9

Finally, substitute this value into the expression:

=> √(16 + 9) = √25

Next, calculate the square root of 25:

=> √25 = 5

Therefore The correct answer is option 1.

Q84. Answer: (b) I

The logic followed here is:

And,

Similarly,

Hence, "Option 3" is the correct answer.

Q85. Answer: (a) Granddaughter

Given:

1) Monica and Chandler are siblings.

2) Chandler is the nephew of Grace and the father of Maria.

3) Kathy is the sister of Grace.

4) Phoebe is the mother of Kathy.

So, Monica is Phoebe's either granddaughter or grandson.

As out of all the options, granddaughter is given, therefore Monica is Phoebe's granddaughter.

Hence, the correct answer is "Option 1".

Q86. Answer: (a) 5 lakh

Given:

Number of school bags sold in 2015 = 40 lakh

Number of school bags sold in 2017 = 45 lakh

Formula used:

Difference = Sales in 2017 - Sales in 2015

Calculation:

=> Difference = 45 - 40

=> Difference = 5 lakh

Therefore The correct answer is option (1).

Q87. Answer: (a) Construction

Given:

Phases of project and estimated/actual time (in days):

Planning/design: Estimated = 20, Actual = 30

Construction: Estimated = 500, Actual = 650

Setting pipelines: Estimated = 60, Actual = 80

Painting: Estimated = 30, Actual = 40

Manpower and daily wages:

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Manager: Rs. 15,000, Civil Engineer: Rs. 20,000
Unskilled labor: Rs. 1,000, Skilled labor: Rs. 1,500
Formula used:
Salary expenditure = Time (in days) × Number of workers × Daily wage
Absolute increase = Salary expenditure (actual) - Salary expenditure (estimated)
Calculation:
For Planning/design:
=> Estimated salary = 20 × (1 × 15,000 + 2 × 20,000 + 2 × 1,000 + 20 × 1,500)
=> Estimated salary = 20 × (15,000 + 40,000 + 2,000 + 30,000) = Rs. 1,740,000
=> Actual salary = 30 × (15,000 + 40,000 + 2,000 + 30,000)
=> Actual salary = Rs. 2,610,000
=> Absolute increase = Rs. 2,610,000 - Rs. 1,740,000 = Rs. 870,000
For Construction:
=> Estimated salary = 500 × (1 × 15,000 + 4 × 20,000 + 500 × 1,000 + 140 × 1,500)
=> Estimated salary = 500 × (15,000 + 80,000 + 500,000 + 210,000) = Rs. 402,500,000
=> Actual salary = 650 × (15,000 + 80,000 + 500,000 + 210,000)
=> Actual salary = Rs. 523,250,000
=> Absolute increase = Rs. 523,250,000 - Rs. 402,500,000 = Rs. 120,750,000
For Setting pipelines:
=> Estimated salary = 60 × (1 × 15,000 + 6 × 20,000 + 100 × 1,000 + 250 × 1,500)
=> Estimated salary = 60 × (15,000 + 120,000 + 100,000 + 375,000) = Rs. 36,600,000
=> Actual salary = 80 × (15,000 + 120,000 + 100,000 + 375,000)
=> Actual salary = Rs. 48,800,000
=> Absolute increase = Rs. 48,800,000 - Rs. 36,600,000 = Rs. 12,200,000
For Painting:
=> Estimated salary = 30 × (2 × 15,000 + 2 × 20,000 + 150 × 1,000 + 200 × 1,500)
=> Estimated salary = 30 × (30,000 + 40,000 + 150,000 + 300,000) = Rs. 15,600,000
=> Actual salary = 40 × (30,000 + 40,000 + 150,000 + 300,000)
=> Actual salary = Rs. 20,800,000
=> Absolute increase = Rs. 20,800,000 - Rs. 15,600,000 = Rs. 5,200,000
Therefore The phase with the highest absolute increase is Construction.

Q88. Answer: (b) 83%

Given:
Number of students in Class 7C:
Passed both exams = 17
Passed Semester 1 but failed Semester 2 = 2
Passed Semester 2 but failed Semester 1 = 6
Failed both exams = 5
Formula used:
Pass percentage = (Number of students who passed at least one exam)/(Total number of students) × 100
Calculations:
Total students = 17 + 2 + 6 + 5 = 30
Students who passed at least one exam = 17 + 2 + 6 = 25
=> Pass percentage = 25/30 × 100
=> Pass percentage = 83%
Therefore The correct answer is option (2).

Q89. Answer: (b) Assam

Given:
Number of Netflix subscribers (in millions):
Delhi: 2003 = 37.62, 2004 = 43.26

Mumbai: 2003 = 45.26, 2004 = 47.61

Assam: 2003 = 32.02, 2004 = 40.56

Punjab: 2003 = 48.65, 2004 = 50.55

Kerala: 2003 = 36.36, 2004 = 38.21

Bihar: 2003 = 27.21, 2004 = 27.87

Uttar Pradesh: 2003 = 67.52, 2004 = 71.34

Formula used:

Change in subscribers = Subscribers in 2004 - Subscribers in 2003

Maximum change = Highest difference among all states

Calculations:

Delhi: Change = 43.26 - 37.62 = 5.64

Mumbai: Change = 47.61 - 45.26 = 2.35

Assam: Change = 40.56 - 32.02 = 8.54

Punjab: Change = 50.55 - 48.65 = 1.90

Kerala: Change = 38.21 - 36.36 = 1.85

Bihar: Change = 27.87 - 27.21 = 0.66

Uttar Pradesh: Change = 71.34 - 67.52 = 3.82

=> Maximum change = 8.54 (Assam)

Therefore The correct answer is option (2).

Q90. Answer: (d) Only conclusion II follows.

Given,

Statement:

Computer is one of the greatest innovations of mankind.

Conclusions:

I. No other innovation is better than computer - False (Because, the statement only mentions that the computer is one of the greatest innovations, it does not compare it with other innovations to conclude that no other innovation is better).

II. Computers have benefitted mankind - True (Because, the statement implies that computers being one of the greatest innovations suggests they have significantly benefitted mankind).

So, Only conclusion II follows.

Hence, the correct answer is "Option 4".

Q91. Answer: (c) Only conclusion II follows.

The least possible Venn diagram for the given statements is as shown below :

Conclusions:

I. All curtains are sophisticated → Does not follow (As no curtains are sophisticated. As whole curtains cannot be sophisticated, therefore it is false.)

II. No men are sophisticated → Follow (As all men are curtains and no curtains are sophisticated. As whole men comes in curtains which cannot be sophisticated, therefore it is true.)

Therefore Here, Only conclusion II follows.

Hence, the correct answer is "Option 3".

Q92. Answer: (d) 422

The logic followed here is:

Thus, it should be 420 instead of 422.

Hence, "Option 4" is the correct answer.

Q93. Answer: (a) 58,023

The logic followed here is:

Hence, "Option 1" is the correct answer.

Q94. Answer: (b) Maid : Valet

The logic followed here is:

Logic: Gender Pairing.

Here,

Cow : Bull → Cow is the female counterpart of Bull.

Similarly,

Maid : Valet → Maid is the female counterpart of Valet.

Hence, the correct answer is "Option 2".

Q95. Answer: (c) Only conclusion L follows.

Given,

Statement:

Absence makes the heart grow fonder.

Conclusions:

L. The missing of a thing or a person increases the longing for it - True (Because, the statement suggests that when something or someone is absent, the desire or fondness for that thing or person grows stronger).

M. A healthy distance should be maintained to keep the relationship strong - False (Because, the statement does not provide any evidence to support the claim that maintaining a healthy distance is necessary for a strong relationship).

So, Only conclusion L follows.

Hence, the correct answer is "Option 3".

Q96. Answer: (d) [figure] [figure]

The diagram that best represents the relationship between the given set of classes is shown below :

Both golf and rugby are two different types of sports.

Hence, "Option 4" is the correct answer.

Q97. Answer: (b) GJB

The logic followed here is:

Option 1) VYB

Option 2) GJB

Option 3) PSV

Option 4) CFI

Thus, out of all the options, 'GJB' is the correct answer.

Hence, "Option 2" is the correct answer.

Q98. Answer: (a) [figure] [figure]

The diagram that best represents the relationship between the given set of classes is shown below :

Both Kidney and Heart are two different subsets of the category Organ.

Hence, "Option 1" is the correct answer.

Q99. Answer: (b) Father's Brother's Son

Given:

1) Will is the name of Bob's son.

2) The son of Bob's father Alex is the brother of Mike.

3) Dustin is Mike's son.

So, Dustin is Will's father's sibling's (either brother or sister) son or cousin.

As out of all the options father's brother's son is given, therefore Dustin is Will's father's brothers son or cousin.

Hence, the correct answer is "Option 2".

Q100. Answer: (a) Flu

The logic followed here is:

Logic: Symptoms of illnesses.

Here,

Flu, Fatigue, Pain, and Fever are symptoms of various illnesses.

However,

Flu is an illness itself, not a symptom.

Hence, the correct answer is "Option 1".

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