RRB NTPC Tier I Official Paper (Held On: 19 Apr 2016 Shift 2) (Previous Year Paper)

RRB NTPC • 2016 • 100 questions • 90 minutes • Answer key and solutions

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Q1. If ‘how are you’ is written as ‘ne kl se’ and ‘where are you’ as ‘ne bl se’ and ‘you were here’ as ‘ke ne go’, then ‘how you here’ is written as

A. kl ke ne

B. se ne kl

C. ne bl ke

D. bl se ne

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

Q2. _____ is not a type of heat transfer.

A. Diffusion

B. Reflection

C. Convection

D. Radiation

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

Q3. International Women’s day celebrated on _____ March every year.

A. 6^(th)

B. 7^(th)

C. 8^(th)

D. 9^(th)

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

Q4. Replace # sign with the mathematical operators ‘+’, ‘+’, ‘-‘ or ‘=’ to get a balanced equation out of 186 # 31 # 36 # 30.

A. + ÷ =

B. - = +

C. - + ÷

D. ÷ = -

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

Q5. Triangle PQR is such that PQ = 9 cm, QR = 6 cm, PR = 7.5 cm, and triangle PQR is similar to triangle XYZ. If XY = 18 cm, find the value of YZ.

A. 15 cm

B. 18 cm

C. 12 cm

D. 9 cm

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

Q6. _____ is used as a stabilizer in ice cream.

A. Gelatin

B. Sugar

C. Milk

D. Strawberry

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

Q7. The major ingredient of sweetened soft drink is

A. Carbonated water

B. Hydrochloric acid

C. Phosphoric acid

D. Caffeine

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

Q8. Rs. 10000 is being compounded at 20% per annum. Calculate the amount after 2 years if the rate of interest is charged half-yearly.

A. Rs. 10041

B. Rs. 14641

C. Rs. 12000

D. Rs. 13660

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

Q9. Pakistani film industry is known as _____

A. Pollywood

B. Lollywood

C. Kollywood

D. Mollywood

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

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Q10. The mean of a distribution is 18 and the standard deviation is 4.5. What is the value of the coefficient of variation?

A. 50%
B. 25%
C. 100%
D. 75%

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

Q11. If $a^3 + b^3 + c^3 - 3abc = 0$, then find the value of $(a^2/bc + b^2/ac - 3)$.

A. $-c^2/ab$
B. $-c^2/bc$
C. $-c^3/ba$
D. $-c/a$

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

Q12. Pointing to a woman, I said that her brother's only son is the brother of my wife. How is the woman related to me?

A. Father-in-law's sister
B. Mother-in-law
C. Sister-in-law
D. Sister

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

Q13. Which of the following states does not share a border with Myanmar?

A. Assam
B. Mizoram
C. Nagaland
D. Manipur

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

Q14. Geographical Indication (GI) is related to _____ having unique geographic origin and evolution over centuries.

A. Hills
B. Mountain ranges
C. Plains
D. Products

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

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Q15. In March 2016 Election Commission of India declared assembly elections in_____ states scheduled for April – May 2016.

A. 3

B. 7

C. 5

D. 6

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

Q16. 10 persons can do a job in X days. If 20 persons with twice the efficiency can do the same job in 5 days, then find the value of X?

A. 40

B. 15

C. 20

D. 30

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

Q17. P can do a piece of work in 60 days & Q can do the same work in 50 days. Find the ratio of working efficiencies of P and Q.

A. 1 : 3

B. 6 : 5

C. 5 : 6

D. 4 : 5

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

Q18. A kite is flying at a height of 50 m. If the length of the string is 100 m then the inclination of the string to the horizontal ground in degree measures is:

A. 90

B. 45

C. 60

D. 30

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

Q19. Retinol is mainly related to _____

A. Vitamin A

B. Vitamin B

C. Vitamin D

D. Vitamin E

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

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(d) B

Q20. A lady said that father of Rahul's father is my father. How is the lady related to Rahul?

A. Mother

B. Paternal aunt

C. Sister

D. Niece

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

Q21. Bollywood actor _____ has been selected for the 47^(th) Dadasaheb Phalke Award for 2015.

A. Dilip Kumar

B. Manoj Kumar

C. Rajinikanth

D. Anupum Kher

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

Q22. Read the given statement carefully and answer the question.

A group of people getting together casually without prior planning and in a relaxed manner is called informal gathering.

Which of the following situations better fits the above statement?

A. A group celebrates every month on salary day

B. Invitees gather on the occasion of wedding reception

C. Soon after the release of mark list, top 10 rankers gather to greet each other

D. People gather to witness beating retreat at Wagah border in Amritsar

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

Q23. Sleep apnea is related to _____ while sleeping.

A. Walking

B. Talking

C. Snoring

D. Smiling

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

Q24. Boiling point of water is _____.

A. 210° F

B. 212° F

C. 214° F

D. 208° F

(a) A
(b) B

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(c) D
(d) C

Q25. Circumvent : Bypass ? Comprehensible : _____

A. Understandable
B. Unclear
C. Grasping
D. Apprehend

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

Q26. The product of two consecutive odd numbers is 399. Find the lower of them.

A. 17
B. 19
C. 21
D. 23

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

Q27. If a = 2b/3, b = 2c/3, and c = 2d/3, then find the ratio of b and d.

A. 8/9
B. 4/9
C. 4/3
D. 5/27

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

Q28. Windows 10 is

A. an utility software
B. a browser
C. an application software
D. an operating system

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

Q29. One of the techniques used for desalination of seawater is

A. Filtration
B. Distillation
C. evaporation
D. Condensation

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

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Directions

Directions: The following table represents the number of fans of stars MSD, VK, RD, and SR in different areas of a town. Consider the information and answer the following questions based on it.

	Area 1	Area 2	Area 3	Area 4
VK	2500	1700	2300	5000
MSD	3000	3000	4000	3100
RD	1500	3500	4500	5200
SR	1500	4000	3500	2500

Q30. What is the difference between the numbers of fans of Area 2 to that of Area 3?

A. Area 2 has 2200 more fans
B. Area 2 has 2100 less fans
C. Area 2 has 2100 more fans
D. Area 2 has 2200 less fans

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

Q31. What is the difference between the total number of fans of SR and MSD?

A. 1500
B. 1600
C. 3000
D. 3200

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

Q32. In all, who has the highest number of fans?

A. VK
B. MSD
C. RD
D. SR

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

Q33. Echocardiogram is more closely related to

A. Doppler effect
B. Zeeman effect
C. Photoelectric effect
D. Magnetic effect

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

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Q34. Statements followed by some conclusions are given below.

Statements:

1. Compulsive online shopping has become a common behavior among youngsters.
2. This is evident from most of those seeking counselling for de-addiction.

Conclusions:

I. All youngsters are addicted online shopping.

II. All youngsters seek counselling for de-addiction.

Find which of the given conclusions logically follows from the given statements.

A. Only conclusion I follows

B. Only conclusion II follows

C. Both I and II follow

D. Neither I nor II follows

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

Q35. In a mixture of 25 liters, the ratio of milk and water is 4 : 1. How many liters of milk must be added to make the ratio 16 : 1?

A. 21

B. 25

C. 60

D. 36

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

Q36. World Wetland day is celebrated every year on _____February.

A. 2^(nd)

B. 3^(rd)

C. 4^(th)

D. 5^(th)

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

Q37. Night blindness : Sight ? _____ : Speech

A. Talk

B. Stutter

C. Speak

D. Lecture

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

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Q38. Davis Cup 2015 final was held in _____

A. UK
B. Australia
C. Belgium
D. Argentina

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

Q39. Mohan starts to calculate the sum of all odd natural numbers less than 83. What result does he get?

A. 1456
B. 1681
C. 1437
D. 1671

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

Q40. 'Start' menu in a standard personal computer is

A. Part of the hardware
B. A set of options and commands
C. Nothing but the status bar
D. Network related

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

Q41. If the mathematical operator '÷' means '×', '+' means '-', '×' means '+' and '-' means '÷', then 24 + 48 – 12 × 4 ÷ 2 = ?

A. 6
B. -6
C. 16
D. 28

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

Q42. Avalanche : Ice ? Volcano : _____

A. Lava
B. Sand
C. Heat
D. Earth

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

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Q43. The process of reducing the milk fat globules size of allow them to stay evenly distributed in milk is called _____

A. Standardization
B. Pasteurization
C. Homogenization
D. Fortification

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

Q44. _____ was the 3^(rd) Mughal Emperor of India.

A. Humayun
B. Akbar
C. Aurangzeb
D. Jahangir

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

Q45. Velocity of a car does not depend on

A. Speedometer
B. Change in direction
C. Change in speed
D. Change in acceleration

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

Q46. The Colosseum, known as the Flavian Amphitheatre, is located in _____

A. Venice
B. Rome
C. Milan
D. Vatican City

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

Q47. Mukesh got a series of discounts 30%, 25%, 15% on his shirt. Find out the single equivalent discount.

A. 52.34%
B. 38.35%
C. 55.38%
D. 57.38%

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

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Q48. In March 2016 National Green Tribunal imposed an initial compensation of Rs 5 Crore on _____ for tempering with the Yamuna river's flood plains.

A. Kalki Avatar Foundation

B. Art of Living Foundation

C. Emissaries of Divine Light

D. Sant Nirankari Mission

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

Q49. The ancient Indian legal document 'Manusmriti' was written in _____

A. Tamil

B. Hindi

C. Sanskrit

D. Bengali

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

Q50. Find the missing (?) in the series:

FHJ, KMO, PRT, ?

A. UVZ

B. UXZ

C. UVW

D. UWY

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

Q51. India won the 2016 Asia Cup T20 held in Bangladesh by _____ wickets.

A. 7

B. 6

C. 5

D. 8

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

Q52. Kakori train robbery was organized by the _____ in 1925.

A. Swaraj Party

B. Indian National Congress

C. Anushilan Samiti

D. Hindustan Republican Association

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

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Q53. The mean of 20 observation is 19. One more observation is included and the new mean becomes 20. The 21^(st) observation is:

A. 20
B. 30
C. 40
D. 42

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

Q54. Golconda Fort was built during _____.

A. Vijayanagara Empire
B. Qutb Shahi dynasty
C. Satavahana dynasty
D. Hoysala Dynasty

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

Q55. Provincial Autonomy was provided by _____

A. The Government of India Act 1935
B. The Montague-Chelmsford Report
C. The Government of India Act 1919
D. The Indian Independence Act 1947

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

Q56. Who is number 1 in the Forbes 2016 ranking of World's billionaires?

A. Warren Buffet
B. Amancio Ortega
C. Bill Gates
D. Carlos Slim Helu

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

Q57. In a factory, 60 workers can stitch 120 m of clothes in 7 days, what length of clothes can be stitched by 70 workers in 5 days?

A. 100 m
B. 90 m
C. 85 m
D. 110 m

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

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Q58. Which one reveals, more appropriately, functioning of the heart?

A. Electrocardiogram
B. Echocardiogram
C. Stethoscope
D. Lipid profile

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

Q59. Given that $(a^2 + b^2) = 60$, then find the value of $(a + b)^2 + (a – b)^2$.

A. 90
B. 120
C. 140
D. 150

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

Q60. Mother of K's father is the sister of G.S is the daughter of G. How is S related to K's father?

A. Cousin sister
B. Mother
C. Paternal Aunt
D. Cannot be determined

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

Q61. A balloon is connected to a meteorological station by a cable of length 130 m, inclined at 60° to the horizontal. Find the height of the balloon from the ground. Assume that there is no slack in the cable.

A. 110.32 m
B. 173 m
C. 163.28 m
D. 112.58 m

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

Q62. Orbital period of Halley's comet is _____ years.

A. 25
B. 50
C. 76
D. 100

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

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Q63. Find the greatest number which on dividing 1580 and 3800 leaves remainders 8 and 1 respectively.

A. 262
B. 131
C. 65.5
D. 393

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

Q64. Which one is not the cause of kidney stone formation?

A. Drinking more water
B. Diabetic mellitus
C. Taking nuts rich in oxalate
D. Eating lot of stone forming foods

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

Q65. If the angles of a triangle are in the ratio of 2 : 3 : 5, then find the ratio of the greatest angle to the smallest angle.

A. 7 : 2
B. 5 : 2
C. 5 : 3
D. 3 : 5

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

Q66. The annual financial statement prepared under article 112 of the Indian Constitution is called _____

A. Public account
B. Consolidated account
C. Budget
D. Revenue account

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

Q67. Ram travels 4/9^(th) of the total journey by bus, 5/18^(th) by rail, and the remaining 10 km on foot. Find the distance of the total journey.

A. 42 km
B. 90 km
C. 36 km
D. 18 km

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

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Q68. If a = 5, b = 4, c = 8 then find the value of $(a^3 + b^3 + c^3 – 3abc)/(ab + bc + ca – a^2 – b^2 – c^2)$.

A. 15
B. 17
C. -17
D. -15

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

Q69. The average age of a batch of 19 members is 24 years. If the age of the one faculty is included, then the average increases by 4 months. What is the age of the faculty?

A. 35 years
B. 30 years 8 months
C. 37 years 4 months
D. 32 years 8 months

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

Q70. Courtroom : Judge ? Stadium : _____

A. Landlord
B. Organizer
C. Referee
D. promoter

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

Q71. The tennis star, _____ was provisionally suspended after testing positive for banned drugs during Australian open 2016.

A. Maria Sharapova
B. Serena Williams
C. Ana Ivanovic
D. Andy Murray

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

Directions

Consider the following information and answer the questions based on it.

Out of the 75 birders, 15 wanted to see only sunbird, 10 wanted to see only flycatcher, 12 wanted to see both sunbird and nuthatch, 15 wanted to see only bee-eater, 13 wanted to see both sunbird and bee-eater, 5 wanted to see both flycatcher and nuthatch and the remaining wanted to see only nuthatch.

Q72. The difference between the birders who want to see sunbird and those who want to see flycatcher is

A. 12
B. 25
C. 30

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D. 15

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

Q73. How many birders wanted to see only one bird?

A. 30
B. 40
C. 45
D. 50

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

Q74. The ratio of birders who like nuthatch to those who like bee-eaters is

A. 11/14
B. 10/7
C. 11/20
D. 30/8

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

Q75. Find the missing (?) in the series:

9, 4, 16, 6, 36, 9, 81, ?

A. 12
B. 10
C. 11
D. 13

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

Q76. Charles Wilkinson's English version of Bhagavad Gita was first published in the year

A. 1685
B. 1725
C. 1785
D. 1885

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

Q77. A sum of money of Rs. 1000 is lent out in two parts in such a way that the interest on one part at 10% per annum for 5 years is equal to another at 5% for 10 years. Calculate the sum lent out at 5%.

A. Rs. 500
B. Rs. 800
C. Rs. 1000

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D. Rs. 1200

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

Q78. In a certain code, 329 means 'you are bad', 419 means 'bad is good' and 195 means 'nothing is bad'. _____ represents 'good'.

A. 9
B. 4
C. 1
D. 3

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

Q79. Any online 'demo' is _____.

A. An interactive presentation
B. A non-interactive presentation
C. Not a sequential presentation
D. An active user interface

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

Q80. In a certain code, 324 means 'are you alright', 783 means 'you come home' and 927 means 'we are home'. Which digit represents 'come'?

A. 8
B. 9
C. 7
D. 3

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

Q81. The game of football is also referred to as _____

A. Rugby
B. Poker
C. Soccer
D. Ping-Pong

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

Q82. Rearrange the jumbled letters to make meaningful words and then select the one which is different.

A. OMESU
B. ROTINOM
C. RETIAW

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D. RETNIRP

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

Q83. Find the odd pair out.

A. Nitrogen : Air
B. Hydrogen : Water
C. Uranium : Coins
D. Sulphur : Match stick

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

Q84. Neeraj purchased a few shirts for his shop at cost prices ranging from Rs. 400 to Rs. 550 and sold at prices ranging from Rs. 450 to Rs. 650. What is the maximum profit that might be made in selling 10 shirts?

A. Rs. 2800
B. Rs. 2500
C. Rs. 2400
D. Rs. 2000

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

Q85. As per historical astronomy there are _____ zodiac divisions.

A. 9
B. 10
C. 11
D. 12

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

Q86. How much is the maximum % discount that Sheela can offer to her customer on her Marked Price so that she sells her product at no profit or loss, if she had already marked her product by 25% more than the cost price?

A. 25%
B. 20%
C. 30%
D. 40%

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

Q87. If the standard deviation of a population is 10, what would be the population variance?

A. 100
B. 30
C. 5

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D. 20

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

Q88. An assertion (A) and a reason (R) are given below.

Assertion (A): Electric wires are generally made of copper.

Reason (R): Copper is a good conductor.

Choose the correct option.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R are true, but R is not the correct explanation of A.

C. A is true, but R is false

D. A is false, but R is true

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

Q89. Ram is thrice as fast as Mohan and Mohan is twice as fast as Sohan. The distance covered by Sohan in 42 minutes will be covered by Mohan in:

A. 18 minutes

B. 21 minutes

C. 20 minutes

D. 22 minutes

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

Q90. An angle is 60° more than one-fifth of its complement. Find the smaller angle in degrees.

A. 65°

B. 35°

C. 25°

D. 45°

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

Directions

Consider the following information and answer questions based on it.

Seven bottles colored — brown, blue, black, violet, white, indigo and purple are kept in a row, in random order, from left to right such that the —

1. White and purple bottles are not at either extremes.
2. Brown bottle is to the immediate right of violet bottle and to the immediate left of the white bottle.
3. White, violet and brown bottles are not at the center.
4. Black bottle is to the immediate left of purple bottle.
5. Blue bottle is neither second last nor at either extremes.

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Q91. Bottles at the extreme right and left ends are

A. Violet and purple

B. Indigo and violet

C. Black and indigo

D. Black and violet

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

Q92. Which bottle is at the center of the row?

A. Black bottle

B. Indigo bottle

C. Blue bottle

D. Purple bottle

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

Q93. Which of the following statement is correct?

A. Indigo bottle is to the immediate left of the purple bottle.

B. Blue is to the immediate right of the purple bottle.

C. There are at least five bottles between brown and black.

D. Black bottle is to the immediate right of the blue bottle.

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

Q94. Statements followed by some conclusions are given below.

Statements:

1. Demand and supply determine the prices of goods and services.

2. When there are too many buyers, prices are pushed up and too many sellers push down prices.

Conclusions:

I. Buyers and sellers determine the prices.

II. Price discovery is market driven.

Find which of the given conclusions logically follows from the given statements.

A. Only conclusion I follows

B. Only conclusion II follows

C. Both I and II follow

D. Neither I nor II follows

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

Q95. Find the value of 6 + 11 + 16 + 21 + … + 71.

A. 539

B. 561

C. 661

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D. 639

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

Q96. The astronomer who discovered planet Pluto was _____

A. Sylvain Arend
B. Joseph Ashbrook
C. Edwin Hubble
D. Clyde Tombaugh

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

Q97. Which assumptions are implied from the below statement

Statement: “The real impact of water crisis would be felt in 2 years,” Says the Panchayat chief.

Assumptions:

I. The water level has started depleting

II. Water bodies need maintenance

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

Q98. Three numbers are in the ratio of 3 : 5 : 10 and their LCM is 630. Find their HCF.

A. 21
B. 42
C. 63
D. 36

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

Q99. 3 years ago, the ratio of Maya’s and Shika’s age was 5 : 9 respectively. After 5 years, this ratio would become 3 : 5. Find present age of Maya?

A. 40
B. 45
C. 43
D. 53

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

Q100. If ‘god is fair’ = ‘ge se fa’, ‘who is god’ = ‘ge we fa’ and ‘you are god’ = ‘ne le fa’, which code does represent ‘is’?

A. se
B. ge
C. fa
D. we

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

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) A

The code for each word is shown below:

how – kl

you – ne

here – ke/go

So, the possible combination is ‘kl ne ke’ or ‘kl ne go’.

Only ‘kl ke ne’ is present in the options, so it is the correct answer.

Q2. Answer: (a) B

The correct answer is Reflection.

Key Points

• Reflection is when light bounces off an object.

• The laws of reflection of light apply to both plane mirrors as well as spherical mirrors.

• The first law of reflection: The incident ray, reflected ray and normal, all lie in the same plane.

• The second law of reflection: The angle of reflection is always equal to the angle of incidence.

Important Points

• Heat travels through three main pathways: conduction, convection, and radiation.

Diffusion	**• Diffusion heat transfer is due to random molecular motion. Neighboring molecules move randomly and transfer energy between one another.**
Convection	• When a fluid, such as air or a liquid, is heated and then travels away from the source, it carries the thermal energy along. - The fluid above a hot surface expands, becomes less dense, and rises.
Radiation	• It is the transport of heat energy by electromagnetic waves. - Radiation heat transfer does not require a medium and is thus the only mode of heat transfer in space. - In this process, the sun warming the Earth.

• The time scale for radiative heat transfer is much smaller than diffusive heat transfer.

• Conduction describes heat transfer via direct contact of materials.

Additional Information

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• A reflection appears to be the same distance from the "other side" of the mirror as the viewer's eyes are from the mirror.

• Two types of reflection: diffuse reflection and specular reflection.

• Diffuse reflection is the reflection of light from a surface where an incident ray is reflected at many angles.

• Specular reflection is defined as light reflected from a smooth surface at a definite angle or in a single direction. Examples, reflection on the mirror, still water, etc.

Q3. Answer: (b) C

The correct answer is 8^(th).

Important Points

• In 1975, during the International Women's Year, the United Nations began celebrating 8 March as International Women's Day.

• It is a day when women are recognized for their achievements without regard to divisions, whether national, ethnic, linguistic, cultural, economic, or political.

• International Women's Day 2020 theme— "I am Generation Equality: Realizing Women's Rights".

Q4. Answer: (a) D

A. → (+ ÷ =)

Given expression: 186 # 31 # 36 # 30

After replacing the # by '+ ÷ =', we get:

186 + 31 ÷ 36 = 30

L.H.S = 186.8611 ≠ R.H.S

B. → (- = +)

Given expression: 186 # 31 # 36 # 30

After replacing the # by '+ ÷ =', we get:

186 - 31 = 36 + 30

L.H.S = 155

R.H.S = 66

L.H.S ≠ R.H.S

C. → (- + ÷)

Given expression: 186 # 31 # 36 # 30

After replacing the # by '- + ÷', we get:

186 - 31 + 36 ÷ 30

= 186 – 31 + 1.2

= 187.2 – 31

= 156.2

D. → (÷ = -)

Given expression: 186 # 31 # 36 # 30

After replacing the # by '÷ = -', we get:

186 ÷ 31 = 36 - 30

L.H.S = 6

R.H.S = 6

L.H.S = R.H.S

Hence, '÷ = -' is the correct answer.

Q5. Answer: (b) C

Given:

Triangle PQR is similar to triangle XYZ.

PQ = 9 cm, QR = 6 cm and PR = 7.5 cm

XY = 18 cm

Concept:

If ΔABC ~ ΔPQR, then

AB/PQ = BC/QR = AC/PR

Calculation:

ΔPQR ~ ΔXYZ, then

=> YZ/QR = XY/PQ

=> YZ/6 = 18/9

=> YZ = 2 × 6

=> YZ = 12 cm

Q6. Answer: (d) A

The correct answer is Gelatin.

Important Points

• Gelatin, a protein of animal origin, was used almost exclusively in the ice cream industry as a stabilizer but has gradually been replaced with polysaccharides of plant origin due to their increased effectiveness and reduced cost.

• The stabilizers are a group of compounds, usually polysaccharide food gums, that are responsible for adding viscosity to the mix and the unfrozen phase of the ice cream.

• Without the stabilizers, the ice cream would become coarse and icy very quickly due to the migration of free water and the growth of existing ice crystals.

Q7. Answer: (d) A

The correct answer is Carbonated water.

Key Points

• The main ingredient in sweetened soft drinks is water; they are about 90 percent carbonated water.

• Carbonated water is water that has been infused with carbon dioxide gas under pressure.

• This produces a bubbly drink that's also known as sparkling water, club soda, soda water, seltzer water, and fizzy water.

• Apart from seltzer water, carbonated waters usually have salt added to improve their taste.

• Carbonated beverage consumption has been linked with diabetes, hypertension, and kidney stones, all risk factors for chronic kidney disease.

• Soft drinks typically contain carbonated water, high fructose corn syrup (sugar), caramel color, caffeine, phosphoric acid, citric acid, natural flavors, carbon dioxide, organic diol, and Brominated vegetable oil (BVO).

Additional Information

• Caffeine, a stimulant, is one of the major ingredients in sodas.

• Phosphoric acid (H3PO4) was a corrosive acid. As a colorless and odorless agent, it was found in most acidic soft drinks.

• Osteoporosis is linked to phosphoric acid.

• Caramel Color is the world’s most widely used food colorant.

• It is used largely to impart color in numerous foods and beverages including colas, soy sauce, seasonings, bread, pet foods, cereals, etc.

Q8. Answer: (d) B

Given:

P = 10,000, R = 20% p.a and t = 2 years

Concept:

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

If interest compounded half yearly, then

Rate of interest = r/2

Time = 2 × t

Calculation:

R = 20/2 = 10%,

Time = 4

A = 10,000 × (1 + 10/100)^4

=> A = 10000 × [11/10] × [11/10] × [11/10] × [11/10]

=> A = Rs. 14641

Q9. Answer: (d) B

The correct answer is Lollywood.

Key Points

• Lollywood, the Pakistani film industry, based in Lahore Since 1929.

• Lollywood is the Urdu and Punjabi-language film industry of Pakistani cinema.

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• Kariwood also refers to the Pakistani film industry, based in the city of Karachi, Pakistan.

Important Points

• Pollywood is the Punjabi language film industry centered around the state of Punjab in India.

• Kollywood for the Tamil film industry, based in Chennai, India.

• Mollywood may refer to Malayalam cinema, a sector of the Indian film industry.

• List of the state film industry in India:

FILM INDUSTRY	STATE
Bollywood	Bombay-based Hindi language film industry in Mumbai, Maharashtra.
Bhojiwood	Bhojpuri language films of Bihar, Uttar Pradesh, and Jharkhand.
Chhollywood	Chhattisgarhi language movie industry in Chhattisgarh.
Tollywood	Bengali film industry in Tollygunge, West Bengal. Telugu film industry in Andhra Pradesh and Telangana.
Sandalwood	Kannada language film industry in Karnataka.
Jollywood	The film industry of Assam state.
Ollywood	Odia language movie industry in Odisha.

Additional Information

• The Karachi International Film Festival, simply known as the Kara Film Festival was founded in 2001 by the KaraFilm Society.

• "Teri Yaad" was the first-ever feature film released on 7 August 1948 in Pakistan after the partition of India, on Eid.

Q10. Answer: (d) B

Given:

Mean = 18

Standard deviation = 4.5

Formula:

Coefficient Variance = [Standard deviation/Mean] × 100

Calculation:

Coefficient Variance = [4.5/18] × 100

=> 25%

Therefore The coefficient of variation is 25%.

Q11. Answer: (c) A

Given:

$a^3 + b^3 + c^3 – 3abc = 0$

Formula:

If $a^3 + b^3 + c^3 – 3abc = 0$, then

$a^3 + b^3 – 3abc = -c^3$

Calculation:

$a^2/bc + b^2/ac – 3$

$=> (a^3 + b^3 – 3abc)/abc$

$=> -c^3/abc$

$=> -c^2/ab$

Q12. Answer: (d) A

The family tree diagram is shown below:

Hence, the woman is my father-in-law’s sister.

Q13. Answer: (a) A

The correct answer is Assam.

• Myanmar shares the border with four Northeast Indian states Arunachal Pradesh, Nagaland, Mizoram, and Manipur.

Important Points

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• Capital of Myanmar Naypyitaw.

• The Currency of Myanmar Burmese kyat.

STATE	CAPITAL	CM
Assam	Dispur	Himanta Biswa Sarma
Mizoram	Aizawl	Zoramthanga
Nagaland	Kohima	Neiphiu Rio
Manipur	Imphal	Nongthombam Biren Singh

Additional Information

• Seven Sister States: a region in northeastern India comprising the contiguous states of Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram, Nagaland, and Tripura.

• India shares borders with 10 countries:

• In the north or north-west: China, Bhutan, Nepal, Pakistan, Afghanistan.

• In the east: Bangladesh, Myanmar.

• Water borders: Sri Lanka, Maldives, Indonesia.

Q14. Answer: (b) D

The correct answer is Product.

• A geographical indication (GI) is a sign used on products or goods that have a specific geographical origin and possess qualities or a reputation that are due to that origin.

• The Geographical Indications Act of India was incubated in 1999.

Important Points

• Some important GI tag in India:

GI	TYPE	STATE/UT
Darjeeling Tea	Agricultural	West Bengal
Aranmula Kannadi	Handicraft	Kerala
Solapur Chaddar	Handicraft	Maharashtra
Bhagalpur Silks	Handicraft	Bihar
Katarni Rice	Agricultural	Bihar
Nanjanagud Banana	Agricultural	Karnataka
Nakshi Kantha	Handicraft	West Bengal
Santipur Saree	Handicraft	West Bengal
Bikaneri Bhujia	Foodstuff	Rajasthan
Sanganeri Hand Block Print	Handicraft	Rajasthan

• Darjeeling tea was the first product that got a GI tag in 2004–05 in India.

• 365 goods had been added to the list as of May 2020.

• Kashmir saffron and black rice Manipur got this GI tag recently.

Q15. Answer: (c) C

The correct answer is 5.

• In 2016, the elections in India include the five state legislative assembly elections.

• The states are Tamil Nadu, West Bengal, Kerala, Puducherry, Assam.

Key Points

• Each Member of the Legislative Assembly (MLA) is directly elected to serve 5-year terms by single-member constituencies.

• The biggest state, Uttar Pradesh, has 404 members in its Assembly.

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Q16. Answer: (b) C

Given:

10 Person can do a job in X days

Formula:

Total work = Efficiency × Time

Calculation:

Let efficiency of 1 man in the starting be 1 unit/day

New efficiency of 1 man = 2 units/day

According to the question

10 × 1 × X = 20 × 2 × 5

=> X = 200/10

Therefore X = 20

Q17. Answer: (c) C

Given:

P can complete a work in 60 days

Q can complete the same work in 50 days

Concept:

Time is inversely proportional to efficiency.

Calculation:

Efficiency of P = 1/60

Efficiency of Q = 1/50

Efficiency ratio of P to Q = 1/60 : 1/50

=> 50 : 60

=> 5 : 6

Therefore The ratio of working efficiencies of P and Q is 5 : 6

Alternate Method

Ratio of time taken by P and Q = 60 : 50

=> 6 : 5

Now, as we know that Time is inversely proportional to efficiency

So, Ratio of their efficiency will be inverse i.e = 5 : 6

Therefore The ratio of working efficiencies of P and Q is 5 : 6

Q18. Answer: (c) D

Given:

A kite flying at a height of 50 m

Length of string = 100 m

Formula:

sin θ = Perpendicular/hypotenuse

Calculation:

Hypotenuse = 100 m

Perpendicular = 50 m

=> sin θ = 50/100

=> sin θ = 1/2

=> sin θ = sin 30°

=> θ = 30°

Q19. Answer: (b) A

The correct answer is Vitamin A.

Important Points

VITAMIN	SCIENTIFIC NAME	DEFICIENCY	SOURCE

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A	Retinol	Night Blindness, Hyperkeratosis, Keratomalacia	Fish, liver, dairy products, orange, ripe yellow fruits, leafy vegetables, carrots, pumpkin, squash, spinach
D	Cholecalciferol (D3), Ergocalciferol (D2)	Rickets and osteomalacia	Eggs, liver, certain fish species such as sardines, certain mushroom species such as shiitake
E	Tocopherols, Tocotrienols	mild hemolytic anemia in newborn infants	Many fruits and vegetables, nuts and seeds, and seed oils
K	Phylloquinone, Menaquinones	Bleeding diathesis	Many fruits and vegetables, nuts and seeds, and seed oils
B	Thiamine	Beri-Beri	Pork, wholemeal grains, brown rice, vegetables, potatoes, liver, eggs
C	Ascorbic acid	Scurvy	Many fruits and vegetables, liver

Q20. Answer: (c) B

The family tree diagram is shown below:

Hence, the lady is ‘Paternal Aunt’ of Rahul.

Q21. Answer: (c) B

The correct answer is Manoj Kumar.

• Veteran Bollywood star Manoj Kumar has been selected for the 47th Dadasaheb Phalke Award for 2015.

• He is best known for his patriotic films Purab Aur Paschim, Upkar, and Kranti.

Important Points

• List of actors who won Dadasaheb Phalke Award:

• Kasinathuni Viswanath in 2016.

• Vinod Khanna in 2017.

• Amitabh Bachchan in 2018.

Additional Information

• Dadasaheb Phalke is known as the 'Father of Indian Cinema'.

• He had made India's first full-length feature film Raja Harishchandra in 1913.

• Devika Rani was the first recipient of the Dadasaheb Phalke award in 1969.

Key Points

• Dadasaheb Phalke award, the highest official recognition in Indian cinema.

Q22. Answer: (b) C

Out of given four options, only Option C is unplanned and as Top 10 rankers can not be decided beforehand.

Hence, Soon after the release of mark list, top 10 rankers gather to greet each other is the Correct answer.

Q23. Answer: (b) C

The correct answer is Snoring.

Key Points

• Sleep apnea is a serious sleep disorder that occurs when a person's breathing is interrupted during sleep.

• This means the brain and the rest of the body may not get enough oxygen.

• There are two types of sleep apnea:

• Obstructive sleep apnea (OSA): It is caused by a blockage of the airway, usually when the soft tissue in the back of the throat collapses during sleep.

• Central sleep apnea: In this case, the airway is not blocked, but the brain fails to signal the muscles to breathe, due to instability in the respiratory control center.

Important Points

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Somnambulism	The act of getting up and walking around while in a state of sleep (Sleepwalking).
Somniloquy	Talking during sleep without being aware of it.
Hypnogely	Laughing or smiling during sleep.

Additional Information

• Signs and symptoms of sleep apnea:

• Loud snoring.

• Excessive daytime sleepiness.

• Awakening with a dry mouth or sore throat.

• Morning headache.

• High blood pressure.

Q24. Answer: (b) B

The correct answer is 212° F.

• At 1 atmosphere of pressure (sea level), water boils at 100° C (212° F).

• When a liquid is heated, it eventually reaches a temperature at which the vapor pressure is large enough that bubbles form inside the body of the liquid. This temperature is called the boiling point.

• Once the liquid starts to boil, the temperature remains constant until all of the liquid has been converted to a gas.

Important Points

• The boiling point of water depends on the atmospheric pressure, which changes according to elevation.

• Water boils at a lower temperature as you gain altitude (e.g., going higher on a mountain).

• Water boils at a higher temperature if you increase atmospheric pressure (coming back down to sea level or going below it).

• The boiling point of water also depends on the purity of the water.

• Water that contains impurities (such as salted water) boils at a higher temperature than pure water. This phenomenon is called boiling point elevation.

• It is one of the colligative properties of matter.

Key Points

• Liquids have a characteristic temperature at which they turn into solids, known as their freezing point.

• Water freezes at 32° F or 0° C or 273.15 Kelvin.

• Pure, crystalline solids have a characteristic melting point, the temperature at which the solid melts to become a liquid.

• In theory, the melting point of a solid should be the same as the freezing point of the liquid.

Q25. Answer: (c) A

The relation is:

Circumvent : Bypass → These two words are synonyms of each other.

Similarly,

Comprehensible : _____ → Understandable is the synonym of comprehensible.

Hence, ‘understandable’ is the correct answer.

Word	Meaning
Circumvent	find a way around (an obstacle).
Bypass	a road passing round a town or its centre to provide an alternative route for through traffic.
Comprehensible	able to be understood; intelligible.
Understandable	able to be understood.
Unclear	not easy to see, hear, or understand.
Grasping	avaricious; greedy.
Apprehend	arrest (someone) for a crime.

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Q26. Answer: (a) B

Let, two consecutive odd numbers be (x – 1) and (x + 1)

According to the question,

(x – 1) × (x + 1) = 399

=> x^2 – 1 = 399

=> x^2 = 400

=> x = 20

Therefore Lowest odd number = (20 – 1) = 19

Q27. Answer: (d) B

Given:

a = 2b/3, b = 2c/3, and c = 2d/3

Calculation:

a/b = 2/3 ----(1)

b/c = 2/3 ----(2)

c/d = 2/3 ----(3)

Multiply by 4 in equation (1), multiply by 6 in equation (2) and multiply by 9 in equation (3)

a: b : c : d = 8 : 12 : 18 : 27

=> b : d = 12 : 27

=> b/d = 4/9

Q28. Answer: (b) D

The correct answer is an operating system.

• An operating system or "OS" is software that communicates with the hardware and allows other programs to run.

• It is comprised of the system software, or the fundamental files your computer needs to boot up and function.

• Common desktop operating systems include Windows, DOS, Linux.

• Each OS is different, most provide a graphical user interface, or GUI, that includes a desktop and the ability to manage files and folders.

Important Points

A utility software	**• This software analyses and maintain a computer. This software is focused on how OS works on that basis it performs the task to enable smooth functioning of the computer. - Example: windows defender, windows disk cleanup tool. Antivirus, backup software, file manager, disk compression tool.**
A browser	• A browser is a software application used to locate, retrieve, and display content on the World Wide Web, including webpages, images, videos, and other files. - Examples: Mozilla Firefox, Google Chrome, Microsoft Edge, Opera.
an application software	• It is a type of computer program that performs a specific personal, educational, and business function. Each program is designed to assist the user with a particular process, which may be related to productivity, creativity, and/or communication. - Examples: Microsoft suite of products (Office, Excel, Word, PowerPoint, Outlook, etc.)

Q29. Answer: (b) B

The correct answer is Distillation.

Key Points

• Distillation is an important separation process in chemistry, industry, and food science.

• Distillation is the process of separating components of a mixture based on different boiling points.

• Examples of uses of distillation include purification of alcohol, desalination, crude oil refining, and making liquefied gases from the air.

Important Points

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Filtration	**• Filtration is the process of separating suspended solid matter from a liquid. - The liquid which has passed through the filter is called the filtrate. The filter may be paper, cloth, cotton-wool, asbestos, slag- or glass-wool, unglazed earthenware, sand, or other porous material.**
Evaporation	• Evaporation is the process by which water changes from a liquid to a gas or vapor. It is the primary pathway that water moves from the liquid state back into the water cycle as atmospheric water vapor.
Condensation	• Condensation is the process where water vapor becomes liquid. It is the reverse of evaporation, where liquid water becomes a vapor. - Happens one of two ways: Dew Point and Saturation.

Q30. Answer: (c) B

Calculation:

Total number of fans of Area 2 = 1700 + 3000 + 3500 + 4000

=> 12200

Total number of fans of Area 3 = 2300 + 4000 + 4500 + 3500

=> 14300

Therefore Area 2 has less fans than those of Area 3 = 14300 – 12200 = 2100

Q31. Answer: (c) B

Calculation:

Total number of fans of SR = 1500 + 4000 + 3500 + 2500

=> 11500

Total number of fans of MSD = 3000 + 3000 + 4000 + 3100

=> 13100

Therefore Required difference = 13100 – 11500 = 1600

Q32. Answer: (b) C

Calculation:

Total number of fans of VK = 2500 + 1700 + 2300 + 5000

=> 11500

Total number of fans of MSD = 3000 + 3000 + 4000 + 31000

=> 13100

Total number of fans of RD = 1500 + 3500 + 4500 + 5200

=> 14700

Total number of fans of SR = 1500 + 4000 + 3500 + 2500

=> 11500

Therefore The highest number of fans is of RD.

Q33. Answer: (d) A

The correct answer is Doppler effect.

Key Points

• To examine the heart, Doppler echocardiography is used to produce the Doppler ultrasonography.

• Doppler Echocardiography is a method by which one can identify the direction and velocity of blood flow.

• Doppler can be used for various purposes in echocardiography.

• The principles of Doppler as we use it in echocardiography were discovered by Christian Doppler.

Important Points

Zeeman effect	**• The splitting of a single spectral line into two or more lines of different frequencies observed when radiation (such as light) originates in a magnetic field. - It was named after Dutch physicist Pieter Zeeman**

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Photoelectric effect	• It refers to what happens when electrons are emitted from a material that has absorbed electromagnetic radiation. - Physicist Albert Einstein was the first to describe the effect fully and received a Nobel Prize for his work.
Magnetic effect	• Magnetism is one aspect of the combined electromagnetic force. - It refers to physical phenomena arising from the force caused by magnets, objects that produce fields that attract or repel other objects. - A magnetic field exerts a force on particles in the field due to the Lorentz force

• The lines corresponding to Zeeman splitting also exhibit polarization effects.

• Polarization has to do with the direction in which the electromagnetic fields are vibrating.

Additional Information

• Doppler Effect refers to the change in wave frequency during the relative motion between a wave source and its observer.

• Doppler Effect works on both light and sound objects.

Q34. Answer: (c) D

I. All youngsters are addicted online shopping. → False (As, the statement is tells about ‘common behavior among youngsters’, and not about all youngsters.)

II. All youngsters seek counselling for de-addiction. → False (As, statement ‘2’ gives data evident about most of youngsters with addiction seeking for counselling, but not for ‘all youngsters’.)

Hence, ‘neither I nor II follows’

Q35. Answer: (d) C

Given:

Total quantity of mixture = 25 liters

Ratio of milk and water in the mixture = 4 : 1

Formula:

If N is divided into a : b, then

First part = N × [a/(a + b)]

Second part = N × [b/(a + b)]

Calculation:

Quantity of milk in mixture = 25 × [4/5] = 20 liters

=> Quantity of water in mixture = 25 – 20 = 5 liters

Let the quantity of added milk be x liters,

According to the question

(20 + x)/5 = 16/1

=> 20 + x = 16 × 5

=> 20 + x = 80

=> x = 80 – 20

=> x = 60

Q36. Answer: (b) A

The correct answer is 2^(nd).

• World Wetlands Day is annually celebrated globally on the 2^(nd) of February.

• The day aims to raise awareness about the crucial role played by wetlands for people and our planet.

Important Points

• The theme of World Wetlands Day 2020 is “Wetlands and Biodiversity”.

• There are 3 types of wetlands:

• Inland wetlands: marshes, swamps, rivers, fens, lakes, floodplains, and ponds.

• Coastal wetlands: mangroves, saltwater marshes, lagoons, estuaries, etc.

• Man-made wetlands: Fish ponds, saltpans, and rice paddies.

Additional Information

• Some wetland site in India:

• Asthamudi Wetland in Kerala.

• East Calcutta Wetlands in West Bengal.
• Chandertal Wetland in Himachal Pradesh.
• Bhitarkanika Mangroves in Orissa.
• Bhoj Wetlands in Madhya Pradesh.

Q37. Answer: (b) B

The relation is:

Night blindness : Sight →

Night blindness is a type of vision impairment also known as nyctalopia. People with night blindness experience poor vision at night or in dimly lit environments.

Similarly,

_____ : Speech → Stuttering, also known as stammering and dysphemia, is a speech disorder in which the flow of speech is disrupted by involuntary repetitions and prolongations of sounds, syllables, words or phrases as well as involuntary silent pauses or blocks in which the person who stutters is unable to produce sounds.

Hence, 'stutter' is the correct answer.

Q38. Answer: (d) C

The correct answer is Belgium.

Key Points

• The 2015 Davis Cup by BNP Paribas World Group Final, which sees Belgium host Great Britain on 27-29 November.
• The match played indoors on clay.
• Great Britain won the Davis Cup in 2015.
• Davis Cup is associated with Lawn Tennis.

Additional Information

• Italy's Nicola Pietrangeli is the leading all-time Davis Cup player.
• He holds the record for most wins in both singles and doubles.
• Rafael Nadal is the winner of Davis Cup 2019.
• The venue of Davis cup 2019: Caja Mágica in Madrid, Spain.
• Surface: Hardcourt.

Q39. Answer: (c) B

Concept:

Sum of first n odd numbers = n^2

Calculation:

Total odd numbers less than 83 = (83 – 1)/2 = 41

Therefore Sum of first 41 odd number = 41^2 = 1681

Q40. Answer: (a) B

The correct answer is A set of options and commands.

• The Start menu is the main gateway to your computer programs, folders, and settings.
• It is called a menu because it provides a list of choices, just as a restaurant menu does.

Important Points

• Use the Start menu to do these common activities:
• Start programs.
• Open commonly used folders.
• Search for files, folders, and programs.
• Adjust computer settings.
• Get help with the Windows operating system.
• Turn off the computer.
• Log off from Windows or switch to a different user account.

Q41. Answer: (d) D

Operator	÷	•	×	•

Meaning	×	•	•	÷

Given: 24 + 48 – 12 × 4 ÷ 2 = ?

After replacing the operator by their meaning, we get:

L.H.S = 24 - 48 ÷ 12 + 4 × 2

= 24 – 4 + 8

= 32 – 4

= 28

Hence, '28' is the correct answer.

Q42. Answer: (a) A

The relation is:

Avalanche : Ice → An avalanche is a mass of snow (ice) that slides rapidly down an inclined slope, such as a mountainside or the roof of a building.

Similarly,

Volcano : _____ → A volcano is a rupture in the crust of a planetary-mass object, such as Earth, that allows hot lava, volcanic ash, and gases to escape from a magma chamber below the surface.

Hence, 'lava' is the correct answer.

Q43. Answer: (c) C

The correct answer is Homogenization.

Key Points

• Homogenization is a mechanical process used to reduce the size of the fat globules in the milk.

• Reduce the milk fat globules size to less than 1.0 µm which allows them to stay evenly distributed in milk.

• Homogenization is a high-pressure process that forces milk at a high velocity through a small orifice to break up the globules.

Important Points

Standardization	**• The adjustment of one or more of the milk constituents to meet the legal requirement or nominated level. - In the market milk industry, normally involves reducing the butterfat content by the addition of skim milk or. Through the removal of the cream.**
Pasteurization	• Pasteurized milk is a raw milk that has been heated to a specified temperature and time to kill pathogens that may be found in the raw milk. - Pathogens are microorganisms such as bacteria that make humans sick. Raw milk can contain pathogens such as Campylobacter, E. coli, Salmonella, Listeria, and other bacteria.
Fortification	• Fortified milk is cow's milk that contains extra vitamins and minerals that are not naturally found in milk in significant amounts. - To fortify milk, vitamin A palmitate and vitamin D3 are added.

Q44. Answer: (a) B

The correct answer is Akbar.

• Akbar was the 3^(rd) Mughal emperor of India.

• Akbar succeeded his father, Humayun, in 1556.

• The 13-year-old Akbar was enthroned by Bairam Khan and was proclaimed Shahanshah.

• Akbar was given the nickname 'the Great' because of his many accomplishments, among which, was his record of unbeaten military campaigns that established the Mughal rule in the Indian subcontinent.

Important Points

• The first six Mughal emperors of the Mughal dynasty – Babur, Humayun, Akbar, Jahangir, Shah Jahan, and Aurangzeb.

• Babur (AD 1526-1530) is known for defeating:

• Ibrahim Lodhi in the First Battle of Panipat (AD 1526).

• Rana Sanga (Sangram Singh) at battle of Khanwa.

• Medini Rai of Chenderi at Battle of Chanderi (AD 1528).

• Mahmud Lodi at Battle of Ghagra (AD 1529).

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• Humayun (AD 1530-1556) fought two battles with Sher Shah Suri and was ultimately defeated:
• Battle of Chausa (AD 1539).
• Battle of Kannauj (AD 1540).
• Humayun-Nama was written by his half-sister Gulbadan Begum.
• Jahangir (AD 1605-1627) was Akbar's son, executed the fifth Sikh Guru, Arjun Dev.
• Captain Hawkins and Sir Thomas Roe visited his court.
• The Taj Mahal, the Moti Mahal in Agra, and the Red Fort and Jama Masjid in Delhi was built by Shah Jahan.
• Aurangzeb (Alamgir) (AD 1658-1707) was the last seriously notable Mughal emperor.
• He was called Darvesh or a Zinda Pir.
• Aurangzeb built Biwi ka Makbara on the tomb of his queen Rabaud-Durani at Aurangabad, Moti Mahal within Red Fort at Delhi, and the Jami or Badshahi Mosque at Lahore.

Additional Information

• The most notable of Akbar's wives was Jodha Bai, who was a Jaipur princess.
• In 1563, Akbar canceled the law to collect tax from Hindu pilgrims if they visited their holy places.
• Akbar had nine ministers in his court, who were called his Navratnas or '9 gems'.
• The Akbarnama which means 'Book of Akbar', is an official biographical account of Akbar.
• The work was commissioned by Akbar, and written by Abul Fazl, one of the Nine Jewels.

Q45. Answer: (a) A

The correct answer is Speedometer.

• A speedometer is a measuring device which measures at what speed a vehicle or any moving object is moving.

Important Points

• Velocity is defined as a vector measurement of the rate and direction of motion of an object.
• velocity formula when an object moving in a straight line: r = d / t.
• r is the rate or speed, d is the distance moved, t is the time it takes to complete the movement.

Key Points

• A body moving with a constant speed has velocity without acceleration.

Q46. Answer: (d) B

The correct answer is Rome.

• The Colosseum in Rome, Italy, is a large amphitheater that hosted events like gladiatorial games.
• The building was constructed by emperors of the Flavian dynasty, following the reign of Nero.
• It is one of the new 7 wonders of the world.

Important Points

• 7 wonders of the world in 2019:

WONDER	COUNTRY
Taj Mahal	India
The great wall	China
Machu Pichu	Peru
Roman Colosseum	Rome
Christ the Redeemer Statue	Brazil
Petra	Jordan
Chichen Itza	Mexico

Additional Information

• Vatican City is the smallest independent state in the world and residence of the spiritual leadership of the Roman Catholic Church.
• It is the Centre of Christianity since the foundation of Saint Peter's Basilica by Constantine (4th century) and at a later stage the permanent seat of the Popes.

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Q47. Answer: (b) C

Concept:

SP = MP × (100 – Discount%)/100

If x and y are two successive discounts then single equivalent discount = x + y – (xy/100)

Calculation:

Let MP of shirt be Rs. 100

=> SP of shirt = 100 × (70/100) × (75/100) × (85/100) = 44.625

=> Single equivalent discount = 100 – 44.625 = 55.375 or 55.38

Therefore Single equivalent discount = (55.38/100) × 100 = 55.38%

Short Trick:

Single equivalent discount of 30% and 25% = 30 + 25 – (30 × 25)/100

=> 55 – 7.5 = 47.5%

Single equivalent discount of 47.5% and 15% = 47.5 + 15 – (47.5 × 15)/100

=> 62.5 – 7.125

=> 55.375 or 55.38%

Q48. Answer: (b) B

The correct answer is Art of Living Foundation.

• The Supreme Court issues notice to a former forestry official on whose challenge the green tribunal had imposed a fine of Rs 5 crore on Art of Living (AOL) for destroying the Yamuna floodplains.

• AOL Foundation is led by spiritual guru Sri Sri Ravi Shankar.

• The appeal was brought by Vyakti Vikas Kendra India (VVKI), a Chennai-based charitable trust founded by Sri Sri Ravi Shankar.

Important Points

• The Kalki Avatar Foundation is a non-religious spiritual organization dedicated to raising awareness of the spiritual sciences and the universal message of Divine Love.

• The Kalki Avatar Foundation was formed under the guidance of Lord Ra Gohar Shahi in 2000.

• Its headquarter is in London, United Kingdom.

• The Emissaries of Divine Light is an international spiritual community founded in 1932 by Lloyd Arthur Meeker.

• Sunrise Ranch is the headquarters for Emissaries of Divine Light.

• Satguru Mata Savinder Hardev Ji Maharaj, Holy Sister Sudiksha Ji has been declared as Nirankari Satguru and the spiritual head of the Sant Nirankari Mission.

• It is a spiritual organization based out of Delhi, India.

• Its founder was Baba Buta Singh Ji.

Q49. Answer: (d) C

The correct answer is Sanskrit.

Important Points

• Manusmriti is usually translated as "code of Manu", but it literally means "reflections of Manu".

• It was written in Sanskrit.

• It presents itself as a document that compiles and organizes the code of conduct for human society.

• Manu-smriti is the popular name of the work, which is officially known as Manava-dharma-shastra.

Additional Information

• Vedas had a great influence on ancient Indian society and these Vedas became a crucial part in forming the Hindu dharma.

• Rishi Vyasa compiled divine knowledge into four Vedas.

• There are four major Vedas: Rigveda, Samaveda, Yajurveda and Atharvaveda.

• Vedas were composed in Sanskrit.

Q50. Answer: (d) D

The logic is:

Hence, ‘UWY’ is the correct answer.

Q51. Answer: (a) D

The correct answer is 8.

• India defeated Bangladesh by 8 wickets in the final.

• India won their sixth Asia Cup title and was unbeaten throughout the tournament.

• The Player of the match was Shikhar Dhawan (India).

Important Points

• The 2016 Asia Cup is also called the Micromax Asia Cup T20.

• The final match was held in Sher-e-Bangla National Cricket Stadium, Mirpur, Dhaka.

• 14 editions of the Asia Cup have been played and India has managed to win the tournament seven times.

Q52. Answer: (c) D

The correct answer is Hindustan Republican Association.

Key Points

• Kakori Train Conspiracy was a political robbery and the incident that took place at the small town Karori which was only 16 km away from Lucknow on 9 August 1925.

• Hindustan Republican Association (HRA) under the leadership of Ram Prasad Bismil and supported by Ashfaqulla Khan, Rajendra Lahiri, Chandrashekhar Azad, Sachindra Bakshi, Keshab Chakravarty, Manmathnath Gupta, Murari Lal Gupta (Murari Lal Khanna), Mukundi Lal (Mukundi Lal Gupta) and Banwari Lal.

• Ram Prasad Bismil, Thakur Roshan Singh, Rajendra Nath Lahiri, and Ashfaqullah Khan were given a death sentence and the rest were given Kala Pani (Port Blair Cellular Jail).

Important Points

Swaraj Party	**• Swarajya Party was formed on 1 January 1923 by C R Das and Motilal Nehru.**
Indian National Congress	• Indian National Congress was formed on December 28, 1885, by British civil servant Allan Octavian Hume. - Umesh Chandra Banerjee was elected as the first president of the first meeting of the Congress. - After Lord Curzon declared the Partition of Bengal, senior Congress leaders Surendranath Banerjee and Sir Henry Cotton broke the political barriers and made the party instrumental in the Swadeshi movement.
Anushilan Samiti	• Founder: Satish Chandra Basu in 1902. - Headquarters: Kolkata. - The Samiti was inspired by the thoughts, speeches, and writings of Swami Vivekananda, and influenced by Bankim Chandra Chatterjee's 'Anandmath'.

Q53. Answer: (a) C

Given:

Mean of 20 observation = 19

Formula:

Mean = Sum of all observations/Total number of all observations

Calculation:

Sum of 20 observation = 20 × 19 = 380

Sum of 21 observation = 21 × 20 = 420

Let 21^(st) observation be x, then

380 + x = 420

=> x = 420 – 380

=> x = 40

Therefore The 21^(st) observation is 40.

Q54. Answer: (d) B

The correct answer is Qutb Shahi dynasty.

Key Points

• The Golconda Fort was built in 1518 by Sultan Quli Qutub-ul-Mulk.

• It is located in Hyderabad, Telangana, India.

• Golconda fort to defend the western part of their kingdom. The fort was built on top of a granite hill.

Important Points

• The Vijayanagara empire was formed in 1336 and afterward, it was in the Deccan, in the peninsula, and southern India.

• It was founded by Harihara (Hakka) and his brother Bukka Raya.
• The empire is named after its capital city Vijayanagara.
• Four dynasties ruled over Vijayanagar- Sangama Dynasty, Saluva Dynasty, Tuluva Dynasty, and Aravidu Dynasty.
• The first king of the Satavahana dynasty was Simuka.
• They are referred to as Andhras in the Puranas.
• The term “Satvahana” originated from the Prakrit which means "driven by seven".
• Many Satavahana coins bore the names of ‘Satakarni’ and ‘Pulumavi’.
• The Hoysala period is known as one of the best times in the history of Karnataka, next only to the Vijayanagara Empire.
• Some famous Hoysala kings were Vishnuvardhana, Veera Ballala II, and Veera Ballala III.
• Kannada was the main language of the Hoysala kings.

Q55. Answer: (a) A

The correct answer is The Government of India Act 1935.
• In August 1935, the Government of India passed the longest act.
• This act also included the Government of Burma Act 1935.
• According to this act, India would become a federation if 50% of Indian states decided to join it.
• The act of 1935 was an improvement on the existing position.
• It introduced what is known as provincial autonomy.

Important Points

• The Act of 1919 (also called Montague Chelmsford Reforms) has many contributions towards the constitutional development of India.
• The MCR stands out for proposing some of the most radical administrative changes, for giving provincial legislatures the mantle of self-governance and policy of administrative devolution.
• The Indian Independence Act was passed in 1947. The act created two new independent dominions: India and Pakistan.
• Pakistan was split into Pakistan and East Pakistan which is now Bangladesh.
• The Bengal and Punjab provinces were partitioned between the two new countries.
• This Act repealed the use of ‘Emperor of India' as a title for the British Crown and ended all existing treaties with the princely states.

Q56. Answer: (b) C

The correct answer is Bill Gates.
• Bill Gates remains the richest person in the world with a net worth of $75 billion in 2016 Forbes.
• He has been No. 1 one for 3 years in a row and topped the list 17 out of 22 years.
• Warren Buffet was ranked 3^(rd).
• Spanish clothing retailer, Amancio Ortega was ranked 2^(nd) (best known for the Zara fashion chain).
• Telecom mogul, Carlos Slim Helu was ranked 4^(th).
• Jeff Bezos holds no. 5 and Mark Zuckerberg holds no. 6.

Additional Information

• In 2020, Amazon founder and CEO Jeff Bezos, worth $179 billion, is number one for the third year in a row, followed by Bill Gates at number two.

Q57. Answer: (d) A

Given:

60 worker can stich of 120 m of clothes in 7 days

Formula:

(M1 × D1)/w1 = (M2 × D2)/W2

M = number of workers, D = number of days, W = work done

Calculation:

M1 = 60, D1 = 7 and W1 = 120 m

M2 = 70, D2 = 5 and W2 = ?

According to the question

(60 × 7)/120 = (70 × 5)/W2

=> 7/2 = 350/W2

=> W2 = 350 × (2/7)

=> W2 = 100 m

Therefore 100 m of clothes can be stitched by 70 workers in 5 days

Q58. Answer: (a) B

The correct answer is Echocardiogram.

Key Points

• Echocardiography is a test that uses sound waves to produce live images of your heart. The image is called an echocardiogram.

• This test allows your doctor to monitor how your heart and its valves are functioning.

• The images can help them get information about:

• Blood clots in the heart chamber.

• Fluid in the sac around the heart.

• Problems with the aorta, which is the main artery connected to the heart.

• Problems with the pumping function or relaxing function of the heart.

• Problems with the function of your heart valves.

• Pressures in the heart.

Important Points

Electrocardiogram	**• An ECG (electrocardiogram) records the electrical activity of your heart at rest. - It provides information about your heart rate and rhythm and shows if there is an enlargement of the heart due to high blood pressure (hypertension) or evidence of a previous heart attack (myocardial infarction).**
Stethoscope	• A medical instrument that is used to transmit low-volume sounds such as a heartbeat (or intestinal, venous, or fetal sounds) to the ear of the listener. - A stethoscope may consist of two earpieces connected through flexible tubing to a diaphragm that is placed against the skin of the patient.
Lipid profile	• A lipid panel measures the level of specific lipids in the blood. - Lipids are a group of fats and fat-like substances that are important constituents of cells and sources of energy. - There are two important lipids, cholesterol and triglycerides, which are transported in the blood by lipoproteins (also called lipoprotein particles).

Q59. Answer: (d) B

Given:

$(a^2 + b^2) = 60$

Formula:

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

Calculation:

$(a + b)^2 + (a – b)^2 = 2 \times 60$

$\Rightarrow (a + b)^2 + (a – b)^2 = 120$

Q60. Answer: (a) A

The family tree diagram is shown below:

Hence, ‘S’ is cousin sister of K’s father.

Q61. Answer: (d) D

Given:

Length of cable AC = 130 m

Point A is a balloon and height of balloon is AB

Formula:

$\sin \theta$ = Perpendicular/Hypotenuse

Calculation:

$\sin \theta = AB/AC$

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=> √3/2 = AB/130

=> AB = 130 × (√3/2)

=> AB = 65 × 1.732

=> AB = 112.58 m

Therefore Height of the balloon is 112.58 m.

Q62. Answer: (d) C

The correct answer is 76.

Important Points

• Halley was last seen in Earth's skies in 1986 and was met in space by an international fleet of spacecraft.

• It will return in 2061 on its regular 76-year journey around the Sun.

• The radius of Halley's Comet is 5.5 km.

• Halley's comet was discovered in 1758.

• Comet Halley moves backward (opposite to Earth's motion) around the Sun in a plane tilted 18 degrees to that of the Earth's orbit.

Additional Information

• Comet McNaught was seen over the Pacific Ocean in 2007. It was the biggest Comet Measured.

Q63. Answer: (a) B

Concept:

The greatest number which divides by a and b leaves the remainder p and q respectively then

Required number = HCF of (a– p) (b – q)

Calculation:

HCF of (1580 – 8), (3800 – 1)

=> HCF of 1572, 3799

1572 = 2 × 2 × 3 × 131

3799 = 29 × 131

Therefore HCF of 1572 and 3799 is 131.

Q64. Answer: (a) A

The correct answer is Drinking more water.

• Kidney stones (also called renal calculi, nephrolithiasis, or urolithiasis) are hard deposits made of minerals and salts that form inside your kidneys.

Important Points

• Diet, excess body weight, some medical conditions, and certain supplements and medications are causes of kidney stones.

• Kidney stones can affect any part of your urinary tract — from your kidneys to your bladder.

• The high magnesium and potassium content of banana for its ability to prevent the formation of kidney stones.

Q65. Answer: (d) B

Given:

Ratio of angles of a triangle = 2 : 3 : 5

Concept:

Sum of all three angles of a triangle is 180°.

Calculation:

Short Trick:

Ratio of greatest angle to smallest angle = 5 : 2

Detailed Method:

Ratio of angles of a triangle = 2x : 3x : 5x

According to the question

2x + 3x + 5x = 180°

=> 10x = 180°

=> x = 18°

Smallest angle is = 2 × 18° = 36°

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Greatest angle is = 5 × 18° = 90°

Therefore Required ratio = 90° : 36° = 5 : 2

Q66. Answer: (c) C

The correct answer is Budget.

• The budget is also referred to as the Annual Financial Statement in Article 112 of the Constitution of India.

• The Union Budget is the annual financial statement that contains the government's revenue and expenditure for a fiscal year.

Important Points

• Article 112 of the Constitution requires the government to present to Parliament a statement of estimated receipts and expenditure in respect of every financial year, from April 1 to March 31.

• It is divided into three parts, a Consolidated Fund, Contingency Fund, and Public Account.

• Public Account of India accounts for flows for those transactions where the government is merely acting as a banker.

• This fund was constituted under Article 266 (2) of the Constitution.

• The consolidated accounts combine all the information from the subsidiaries under the parent's control.

• It is the aggregate accounts of a group of companies.

• The revenue account is an equity account with a credit balance. This means that a credit in the revenue T-account (a set of financial records that use double-entry bookkeeping) increases the account balance.

• Revenue accounts are credited when services are performed/billed and therefore will usually have credit balances.

Key Points

• Now Railway Budget is merged with the Union Budget in 2016.

Q67. Answer: (d) C

Concept:

If a/b part of any value, where b > a

Remaining value = Actual value × (b – a)/b

Calculation:

Let total journey be x km, then

Distance covered by bus = x × (4/9) = 4x/9

Distance covered by Rail = x × (5/18) = 5x/18

Distance covered by foot = x – 5x/18 – 4x/9

=> (18x – 8x – 5x)/18 = 5x/18

According to the question

5x/18 = 10

=> x = 10 × (18/5)

=> x = 36

Therefore Total distance is 36 km.

Q68. Answer: (b) C

Given:

a = 5, b = 4, c = 8

Formula:

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

Calculation:

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

$=> (a + b + c) (a^2 + b^2 + c^2 – ab – bc – ca)/[- (a^2 + b^2 + c^2 – ab – bc – ca)]$

=> -(5 + 4 + 8)

=> -17

Therefore The value of (a3 + b3 + c3 – 3abc)/(ab + bc + ca – a2 – b2 – c2) is -17.

Q69. Answer: (d) B

Given:

Average of a batch of 19 members = 24 years

Formula:

Average = Sum of all observations/Total number of all observations

Calculation:

4 months = 1/3 year

Sum of age of 19 members = 19 × 24 = 456

Average age of 20 members = 24 + [1/3] = 73/3

=> Sum of age of 20 members = 20 × [73/3] = 1460/3

Age of faculty = [1460/3] – 456

=> (1460 – 456 × 3)/3

=> (1460 – 1368)/3

=> 92/3

=> 30 years + [2/3] × 12 months

=> 30 years 8 months

Therefore Age of faculty is 30 years 8 months.

The age of new person = 24 + 4/12 × 20 = 92/3 = 30 years 8months

Therefore Age of faculty is 30 years 8 months.

Q70. Answer: (c) C

The relation is:

Courtroom : Judge → A courtroom is the enclosed space in which courts of law are held in front of a judge.

Similarly,

Stadium : _____ → A stadium is a place or venue for outdoor sports, where sports are held in front of a umpire or referee.

Hence, 'referee' is the correct answer.

Q71. Answer: (d) A

The correct answer is Maria Sharapova.

• Maria Sharapova, a five-time Grand Slam champion and one of the world's highest-paid female athletes, was suspended for two years by an International Tennis Federation tribunal ruled that she unintentionally committed a doping violation.

• She is a Russian tennis player.

Important Points

Serena Williams	**• American tennis player. - She won 21 Grand Slam tournaments. - she has four gold medals from the Olympics from both the singles and doubles competitions.**
Ana Ivanovic	• Serbian tennis player. - French Open 2008 winner.
Andy Murray	• British tennis player. - He won a gold medal at the London Olympics and claimed his first Grand Slam title with a stellar run at the U.S. Open. - He won the Gold Medal in the 2012 and 2016 Men's Tennis Olympics.

Q72. Answer: (a) B

The venn diagram for the problem is shown below:

The birders who want to see sunbird = (13 + 15 + 12) = 40

Those who want to see flycatcher = (10 + 5) = 15

Difference = (40 – 15) = 25

Hence, '25' is the correct answer.

Q73. Answer: (d) C

Birders who wanted to see only flycatcher = 10

Birders who wanted to see only nuthatch = 5

Birders who wanted to see only sunbird = 15

Birders who wanted to see only bee-eater = 15

Therefore Total Birders who wanted to see only one bird = (15 + 15 + 5 + 10) = 45

Hence, '45' is the correct answer.

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Q74. Answer: (c) A

The birders who like nuthatch = (12 + 5 + 5) = 22

Those who like bee-eaters = (15 + 13) = 28

The ratio of birders who like nuthatch to those who like bee-eaters = 22/28 = 11/14

Hence, '11/14' is the correct answer.

Q75. Answer: (b) D

Given series: 9, 4, 16, 6, 36, 9, 81, ?

The logic is:

Hence, '13' is the correct answer.

Q76. Answer: (a) C

The correct answer is 1785.

• For the First time, the Bhagavad-Gita has been translated into English in 1785 by Ch. Wilkinson.

Important Points

• The Bhagavad-Gita is the fount of the Vedic wisdom.

• The Vedic wisdom is a complete and finished work, unlocking the mysteries of life, the laws of nature, the relationship between God and the living entity.

• Lord Krishna tried to narrate the Bhagavad Gita to Arjuna.

• "Song of the Lord" is the literary meaning of the Bhagavad Gita.

• There are 18 Chapters in the Gita.

• In Chapter Shanti Prava of the Mahabharata where the Gita appears.

• Mahatma Gandhi had called the Gita his Spiritual Dictionary.

• At the battleground of Kurukshetra, Krishna gives this sermon.

• The language of the Gita is Sanskrit.

• The Gita included in Upnishads scriptures.

Q77. Answer: (c) A

Given:

Principal = Rs. 1000

Formula:

SI = Prt/100

Calculation:

Let the sum lent out at 5% be Rs. x, then

The sum lent out at 10% = Rs. (1000 – x)

According to the question

(x × 5 × 10)/100 = [(1000 – x) × 10 × 5]/100

=> x = 1000 – x

=> 2x = 1000

=> x = 500

Therefore The sum lent out at 5% is Rs. 500.

Q78. Answer: (b) B

The code for each word is shown below:

Hence, '4' represents 'good'.

Q79. Answer: (b) B

The correct answer is A non-interactive presentation.

Key Points

• This is a new way to show new students how easy online lessons by using the online tool.

• Non-Interactive Mode means that the user cannot use the browser, think of it like the page is read-only.

• If the presenter clicks on anything or hits a keyboard key, the browser will automatically close and continue PowerPoint.

• This is very useful for presenters:

• Only using a remote clicker to navigate the presentation (don't have a mouse/keyboard available while they present).

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• Presenting in kiosk mode.
• A seamless flow in the presentation while showing a web page.
Important Points
• Interactive Mode means that the user can use the web page like normal navigating. Users can type into it, click on links, etc.

Q80. Answer: (d) A

The code for each word is shown below:
Hence, '8' represents 'come'.

Q81. Answer: (c) C

The correct answer is Soccer.
• Football, also called soccer, is a game involving two teams of 11 players each team.
• Players are using any part of their bodies except their hands and arms, try to maneuver the ball into the opposing team's goal.
Important Points

GAME	NUMBER OF PLAYERS
Rugby	15
Poker	5 to 8
Ping-pong	2
Hockey	11
Water polo	7
Volleyball	6
kho kho	9

• Table tennis is also known as Ping-pong.

Q82. Answer: (a) C

The meaningful words of the jumbled letters are:
A. OMESU → MOUSE
B. ROTINOM → MONITOR
C. RETIAW → WAITER
D. RETNIRP → PRINTER
All words except 'RETIAW' are electronic device.
Hence, 'RETIAW' is the odd one out.

Q83. Answer: (d) C

The logic is:
A. Nitrogen : Air → Air is made up of Nitrogen molecules.
B. Hydrogen : Water → Water is made up of Hydrogen molecules.
C. Uranium : Coins → Coins is made up of metal. Uranium has unique nuclear properties, so it cannot be used for making coins.
D. Sulphur : Match stick → Match stick is made using Sulphur.
Hence, 'Uranium : Coins' is the odd one out.

Q84. Answer: (a) B

Given:
Neeraj purchased a few shirts for his shop at cost prices ranging from = Rs 400 to Rs 550
Selling prices ranging from = Rs 550 to Rs 650
Formula:
Profit = SP – CP
Calculation:
For maximum profit, Neeraj should purchase the shirts at a minimum price and sells them at maximum price.
Cost price of 1 shirt = Rs 400

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=> Cost price of 10 shirt = Rs 400 × 10 = Rs 4000

Selling price of 1 shirt = Rs 650

=> Selling price of 10 shirt = Rs 650 × 10 = Rs 6500

Therefore Total profit = 6500 – 4000 = Rs. 2500

Q85. Answer: (a) D

The correct answer is 12.

Important Points

• The word 'zodiac' with astrology.

• It's defined by the annual path of the sun across our sky.

• The 12 signs listed in a horoscope, is closely tied to how the Earth moves through the heavens.

• Each occupying 30° of celestial longitude and roughly corresponding to the constellations.

• They are Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricorn, Aquarius, and Pisces.

Q86. Answer: (c) B

Given:

MP is more than CP = 25%

Formula:

Discount% = [Discount/MP] × 100

Calculation:

Let Cost price of the product be Rs. 100

=> MP of the product = 100 × (125/100) = Rs. 125

If Sheela sells her product on cost price, then she get neither profit nor loss

=> Discount given by Sheela on her product = 125 – 100 = Rs. 25

Therefore Discount% = (25/125) × 100 = 20%

Q87. Answer: (c) A

Given:

Standard deviation of population = 10

Formula:

Standard deviation = √(Variance)

Calculation:

10 = √(Population Variance)

=> Population Variance = 10^2 = 100

Q88. Answer: (c) A

One of the reasons that most wires are made out of copper is that it conducts electricity with high flexibility and very little resistance.

Hence, 'both A and R are true and R is the correct explanation of A.'

Q89. Answer: (b) B

Given:

Ram is thrice as fast as Mohan

Mohan is twice as fast as Sohan

Formula:

Time is inversely proportional to speed.

Calculation:

Let the speed of Sohan be x unit

Speed of Mohan = 2x

Speed of Ram = 3 × 2x = 6x

=> Speed ratio of Ram, Mohan, and Sohan = 6x : 2x : x

Ratio of time taken by Ram, Mohan, and Sohan = 1/6x : 1/2x : 1/x = 1 : 3 : 6

=> Ratio of time taken by Ram, Mohan, and Sohan = k : 3k : 6k

According to the question

6k = 42

=> k = 42/6

=> k = 7

Therefore Time taken by Mohan to cover the same distance = 3 × 7 = 21 min

Q90. Answer: (a) C

Given:

An angle is more than one fifth of its complement = 60°

Formula:

Sum of complementary of two angle is 90°

Calculation:

Let the angle be x, then

Complementary angle of x = (90° – x)

According to the question

x – [(90° – x)/5] = 60°

=> [5x – (90° – x)]/5 = 60°

=> 5x – 90° + x = 60° × 5

=> 6x = 300° + 90°

=> x = 390°/6

=> x = 65°

Therefore Smaller angle = 90° – 65° = 25°

Q91. Answer: (a) B

The arrangement will be as shown below:

Hence, bottles at the extreme right and left ends are Indigo and Violet.

Q92. Answer: (b) C

The arrangement will be as shown below:

Hence, ‘blue’ bottle is at the center of the row

Q93. Answer: (b) D

The arrangement will be as shown below:

A. Indigo bottle is to the immediate left of the purple bottle. → False

B. Blue is to the immediate right of the purple bottle. → False

C. There are at least five bottles between brown and black. → False

D. Black bottle is to the immediate right of the blue bottle. → True

Hence, ‘option 2’ is the correct answer.

Q94. Answer: (c) C

I. Buyers and sellers determine the prices. → True (As, when there are too many buyers, prices are pushed up and too many sellers push down prices.)

II. Price discovery is market driven. → True (As, demand and supply determine the prices of goods and services.)

Hence, both I and II follows.

Q95. Answer: (a) A

Given:

The given series is 6 + 11 + 16 + 21 + … + 71.

Formula:

$T_n = a + (n – 1) d$

$S_n = (n/2) [2a + (n – 1) d]$

a = first term

d = common difference

Calculation:

a = 6

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d = 11 – 6 = 5

=> 71 = 6 + (n – 1) 5

=> (n – 1) 5 = 71 – 6

=> n – 1 = 65/5

=> n = 13 + 1

=> n = 14

Therefore S14 = (14/2) × [2 × 6 + (14 – 1) × 5]

= 7 × [12 + 65]

= 7 × 77 = 539

Q96. Answer: (d) D

The correct answer is Clyde Tombaugh.

• Pluto, the ninth planet, is discovered at the Lowell Observatory in Flagstaff, Arizona, by astronomer Clyde W. Tombaugh.

• This discovery was announced on March 13, 1930.

• In 2006, Pluto was reclassified as a dwarf planet in the Kuiper belt.

• It's an area full of icy bodies.

Important Points

Sylvain Arend	**• He was a Belgian astronomer. - He discovered the bright comet C/1956 R1 (Arend-Roland).**
Joseph Ashbrook	• He was an American astronomer. - He worked on Cepheid variables as tools for establishing galactic distances.
Edwin Hubble	• He was an American astronomer. - He is famous for the Hubble Space Telescope. - In 1920, he discovered countless galaxies that exist beyond our own Milky Way galaxy revolutionized our understanding of the universe and earth place within it.

Additional Information

• Hubble telescope launched on April 24, 1990.

• Hubble is currently located about 340 miles (547 km) above Earth's surface.

• It completes 15 orbits per day — approximately one every 95 minutes.

• Hubble's orbit is inclined to the equator at 28.5 degrees.

Q97. Answer: (b) Both assumptions I and II are implicit

(Implicit - suggested though not directly expressed)

Water crisis can be considered as a consequence of depletion of water level.

Therefore, assumption I is implicit

The statement by the Panchayat chief is an indirect suggestion that the water bodies need maintenance.

Therefore, assumption II is implicit

Hence, both assumptions I and II are implicit.

Q98. Answer: (a) A

Given:

Ratio of three numbers = 3 : 5 : 10

LCM of three number = 630

Formula:

If N is divided into a : b, then

First part = N × [a/(a + b)]

Second part = N × [b/(a + b)]

Calculation:

Ratio of three number = 3x : 5x : 10x

First number = 3x

Second number = 5x

Third number = 10x

3x = 3 × x

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5x = 5 × x

10x = 10 × x

=> LCM of 3x, 5x and 10x = 2 × 3 × 5 × x = 30x

=> HCF of 3x, 5x and 10x = x

According to the question

30x = 630

=> x = 630/30

=> x = 21

Therefore HCF of three numbers is 21

Q99. Answer: (a) C

Let Maya's present age be M and Sikhas present age be S.

3 years ago, the ratio of Maya's and Shika's age was 5 : 9 respectively.

According to question:

(M - 3)/(S - 3) =

5/9

=> 9(M – 3) = 5(S – 3)

=> 9M – 27 = 5S – 15

=> 9M – 5S = 27 – 15

=> 9M – 5S = 12

=> (9M - 12)/5 = S ----(i)

After 5 years, this ratio would become 3 : 5.

According to question:

(M + 5)/(S + 5) =

3/5

=> 5(M + 5) = 3(S + 5)

=> 5M + 25 = 3S + 15

=> 5M – 3S = - 10 ----(ii)

Substituting the value of (i) in (ii), we get:

=> 5M - (3 (9M - 12))/5 = - 10

=> 25M – 27M + 36 = - 50

=> - 2M = - 50 – 36

=> - 2M = - 86

=> M = 43

Hence, the present age of Maya is '43' years.

Additional InformationLet's suppose, present age of Maya and Shikha is X and Y.

First we balance out the difference of numerator and denominator of the Ratio separately.

So, there difference of 4 in the ratio before 3 years age and difference of 2 between the ratio of age after 5 years. To balance out this, multiply by 2 in the numerator and denominator of ratio after 5 years.

Now, there is 8 years difference in between the age before 3 years and after 5 years.

In the numerator and denominator of both the ratios, there should also be difference of 8, but there is difference of 1.

So, to balance out this, multiply by 8 in numerator of denominator of both the ratios.

=>

=>

Now, either add 3 in the numerator and denominator of ratio of the age before 3 years or subtract 5 from numerator and denominator of ratio of the age after 5 years, to get the present age.

=>

Hence, we have present age of Maya is 43.

Q100. Answer: (d) B

The code for each word is shown below:

Hence, 'ge' is the code for 'is'.

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