SSC CHSL Tier-1 2022: Official Paper (Held On: 21 March, 2023 Shift 3) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2022 • 100 questions • 60 minutes • Answer key and solutions

Take this paper as a timed mock test

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

yourmocktest.com/pyq/ssc-chsl/ssc-chsl-tier-1-2022-official-paper-held-on-21-march-2023-shift…

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

ENGLISH LANGUAGE

Q1. In the following question below are given some statements followed by some conclusions based on those statements. Taking the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements:

I. Some A are T.

II. Some T are H.

Conclusions:

I. No T is A.

II. No H is T.

III. No A is H.

(a) Only conclusion I follows
(b) All conclusion follows
(c) Only conclusion II follows
(d) Neither conclusion follows

Q2. In the following question, four number pairs are given. In each pair the number on left side of (-) is related to the number of the right side of (-) with some Logic/Rule /Relation. Three pairs are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 - Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

(a) 56885 - 11377
(b) 38518 - 7701
(c) 74235 - 14847
(d) 82695 - 16539

Q3. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

TRAP, MMRE, FHIT, YCZI, ?

(a) RYQY
(b) RXQX
(c) RYQX
(d) RXQY

Q4. In the following question, select the missing number from the given series.

34, 71, 108, 145, ?, 219

(a) 160
(b) 182

(c) 180
(d) 172

Q5. Words given on the left side of (::) are related with each other by some Logic/Rule /Relation. Select the missing word/word pair on the right side of (::) from the given alternatives based on the same Logic/Rule/Relation.

Six : Hexagon :: ?

(a) Four : Rectangle
(b) Four : Pentagon
(c) Three : Square
(d) Seven : Octagon

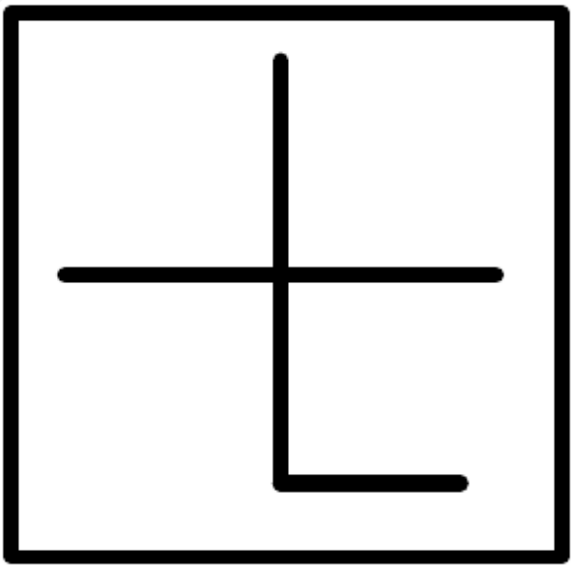
Q6. Pointing towards a lady in a photo, Rinku said, "She is my son's sister's mother". How that lady is related to Rinku?

(a) Daughter
(b) Daughter in law
(c) Sister
(d) Wife

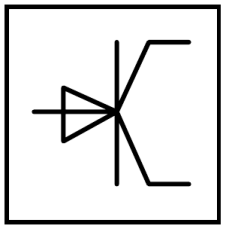
Q7. In the following question, select the odd letter/letters from the given alternatives.

(a) KLIO
(b) RSPT
(c) VWTX
(d) HIFJ

Q8. Select the option figure in which the given figure is embedded. (Rotation is NOT allowed).

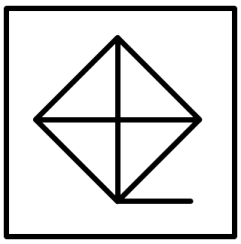


(a)

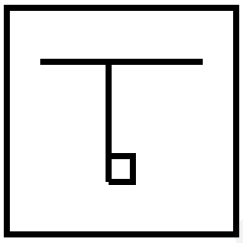


YourMockTest.com — Free Study Material

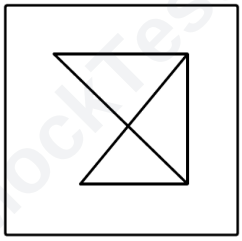
(b)



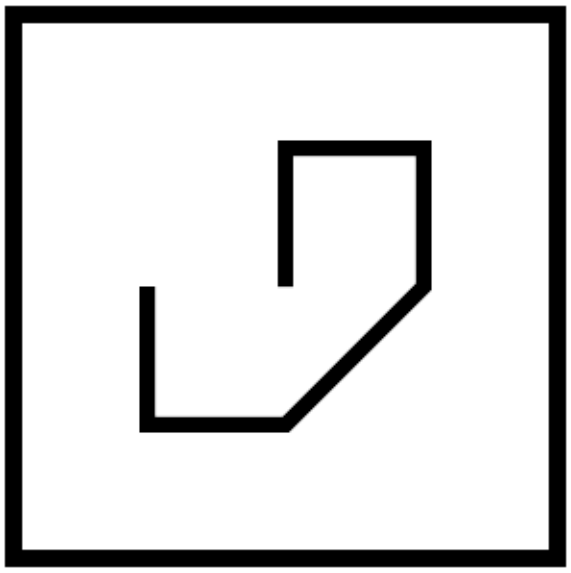
(c)



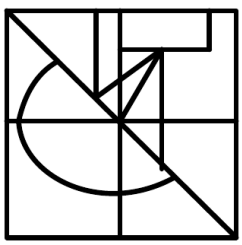
(d)



Q9. Select the option figure in which the given figure is embedded. (rotation is NOT allowed)

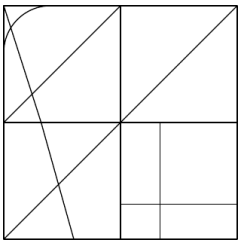


(a)

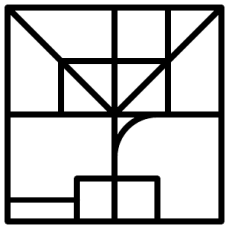


YourMockTest.com — Free Study Material

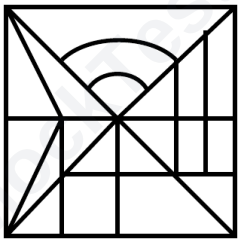
(b)



(c)



(d)



Q10. In the following question, select the related letters from the given alternatives.

PM : RO :: BC : ?

(a) DE
(b) ZA
(c) JK
(d) XY

Q11. After interchanging which two signs and two numbers (Not digits), the value of the given expression will be '45'?

10 × 8 ÷ 6 - 2 + 4

(a) • and -, 8 and 6
(b) • and ×, 10 and 4
(c) ÷ and -, 10 and 8
(d) ÷ and -, 4 and 8

Q12. In a certain code language, 'ONLINE + THEIR' is coded as '11', 'FREE + NEW' is coded as '7'. What is the code for 'HELP + STUDENTS' in that code language?

(a) 10
(b) 12
(c) 8
(d) 6

Q13. Select the option in which the numbers shares the same relationship in set as that shared by the numbers in the given set. (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 - Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

(182, 79, 378)

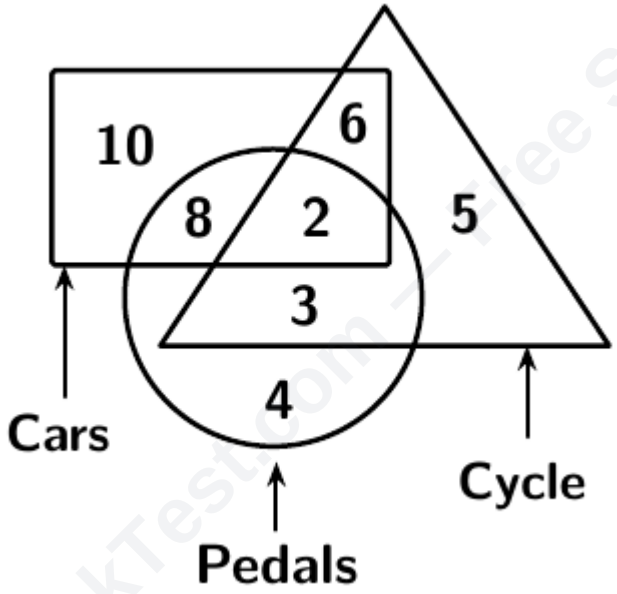
(345, 16, 604)

(a) (79, 18, 178)
(b) (53, 72, 82)

YourMockTest.com — Free Study Material

(c) (68, 79, 193)
(d) (84, 64, 84)

Q14. How many cycles are not pedals?



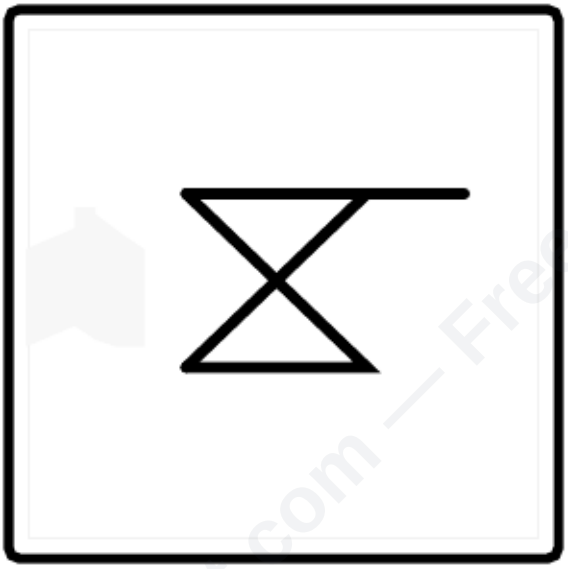
(a) 8
(b) 11
(c) 7
(d) 5

Q15. In a certain code language, 'PRINTS' is coded as 'QRLHQO'. What is the code for 'STRICT' in that code language?
(a) RAGSQR
(b) RAGQSR
(c) RAQGSR
(d) RGAQSR

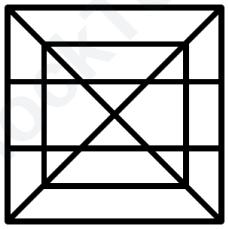
Q16. In the following question, four number pairs are given. In each pair the number on left side of (-) is related to the number of the right side of (-) with some Logic/Rule /Relation. Three pairs are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives. (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 - Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)
(a) 9 - 810
(b) 11 - 1452
(c) 7 - 392
(d) 13 - 2368

Q17. If 13 @ 2 # 5 = 10 and 43 # 9 @ 16 = 50, then 8 @ 6 # 3 = ?
(a) 7
(b) 11
(c) 10
(d) 8

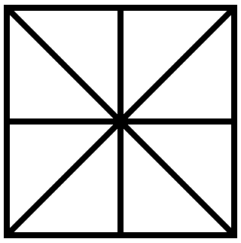
Q18. Select the option figure in which the given figure is embedded. (rotation is NOT allowed)



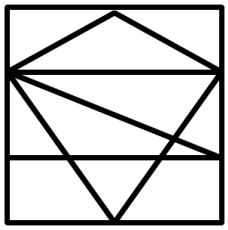
(a)



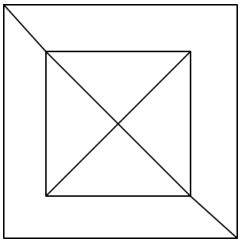
(b)



(c)



(d)



YourMockTest.com — Free Study Material

Q19. Words given on the left side of (::) are related with each other by some Logic/Rule /Relation. Select the missing word/word pair on the right side of (::) from the given alternatives based on the same Logic/Rule/Relation.

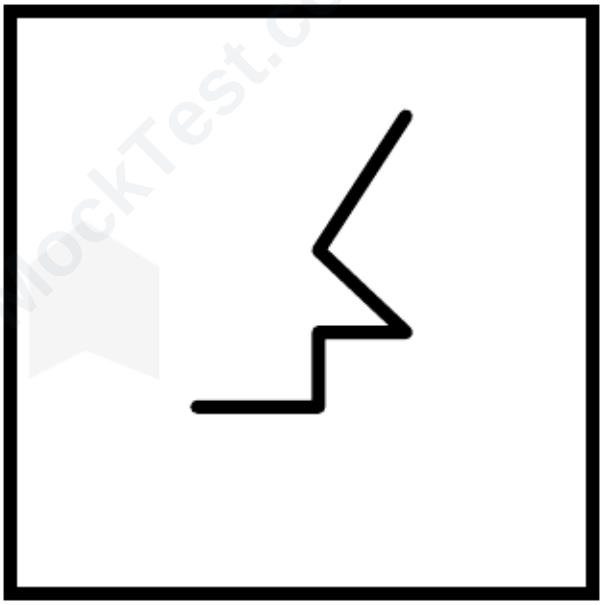
Uttar Pradesh : Lucknow :: ?

(a) Sikkim : Trivandrum
(b) Rajasthan : Sikar
(c) West Bengal : Kolkata
(d) Chennai : Tamil Nadu

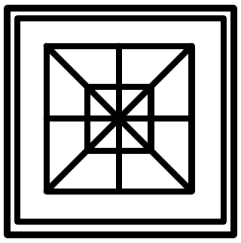
Q20. In the following question, select the odd word pair from the given alternatives.

(a) Ottawa - Canada
(b) Karachi - Pakistan
(c) Rome - Italy
(d) Canberra - Australia

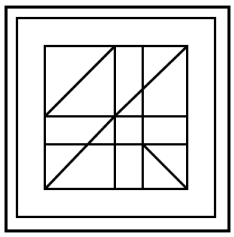
Q21. Select the option figure in which the given figure is embedded. (rotation is NOT allowed)



(a)

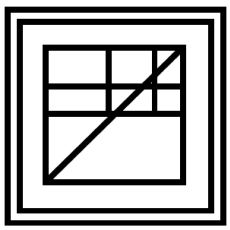


(b)

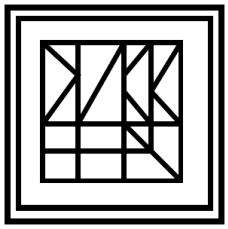


YourMockTest.com — Free Study Material

(c)



(d)



Q22. Select the correct option that indicates the arrangement of the given words in the order in which they appear in an English dictionary.

1. Lean
2. League
3. Lecture
4. Layout
5. Leftist

(a) 4, 2, 3, 1, 5
(b) 2, 1, 5, 3, 4
(c) 4, 2, 1, 3, 5
(d) 4, 2, 1, 5, 3

Q23. Select the option that is related to the sixth number in the same way as the first number is related to the second number and third number is related to fourth number.

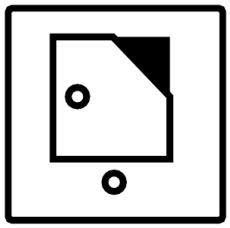
319 : 552 :: 146 : 379 :: ? : 774

(a) 535
(b) 639
(c) 541
(d) 479

Q24. Select the figure from the given options that can replace the question mark (?) in the following series.

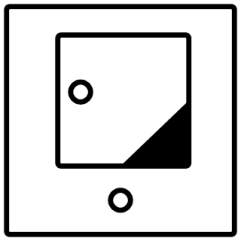


(a)

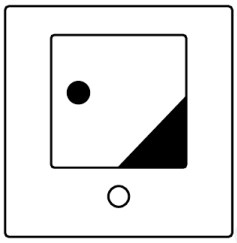


YourMockTest.com — Free Study Material

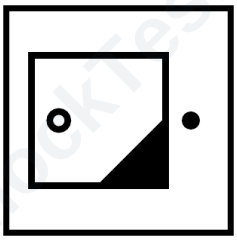
(b)



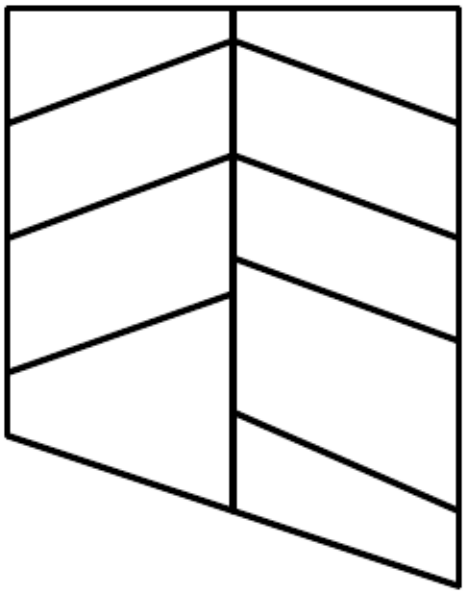
(c)



(d)



Q25. How many quadrilaterals are there in the given figure?



(a) 24
(b) 26
(c) 22
(d) 20

GENERAL INTELLIGENCE

YourMockTest.com — Free Study Material

Q26. As per Global Hunger Index (GHI) 2022, India ranks at _____ position.

(a) 57th
(b) 77th
(c) 97th
(d) 107th

Q27. What is the full form of EPROM?

(a) Erasable Permanent Read Only Memory
(b) Entire Programmable Read Only Memory
(c) Erasable Programmable Read Only Memory
(d) Entire Permanent Read Only Memory

Q28. Which of the following is monoatomic?

(a) Nitrogen
(b) Oxygen
(c) Chlorine
(d) Helium

Q29. Which of the following persons has been awarded the Nobel Peace Prize?

(a) C. V. Raman
(b) Kailash Satyarthi
(c) Amartya Sen
(d) Rabindranath Tagore

Q30. Gandhiji, aged _____, arrived in India in 1915 from South Africa.

(a) 52
(b) 46
(c) 28
(d) 34

Q31. Which among the following is a viral disease?

(a) Chicken pox
(b) Tuberculosis
(c) Whooping Cough
(d) Malaria

Q32. Which of the following is NOT a valid file format in MS-PowerPoint 365?

(a) .pptm
(b) .pwpt
(c) .ppt
(d) .pptx

Q33. The First Amendment Act, 1951 of the Indian constitution added which of the following schedules?

(a) Tenth schedule
(b) Ninth schedule
(c) Eleventh schedule
(d) Seventh schedule

Q34. The asteroid belt lies between which two planets?

(a) Jupiter and Saturn
(b) Mars and Jupiter
(c) Saturn and Uranus
(d) Mercury and Venus

YourMockTest.com — Free Study Material

Q35. Which among the following is not an All India Financial Institution?

(a) ICICI Bank
(b) National Bank for Agriculture and Rural Development
(c) National Housing Bank
(d) Export-Import Bank of India

Q36. Qawwali was brought in India from _____.

(a) Turkey
(b) Mongolia
(c) Saudi Arabia
(d) Persia

Q37. Which country won the FIFA U-20 World Cup 2019?

(a) Poland
(b) Norway
(c) Ukraine
(d) South Korea

Q38. The approximate length of the Great Himalayan range, also known as the central axial range, is _____ km from east to west.

(a) 2800
(b) 2500
(c) 3000
(d) 2100

Q39. What is the name of the mascot for 36th National Games, 2022?

(a) Chanakya
(b) Kojima
(c) Manikarnika
(d) Savaj

Q40. Identify the person from the given statements.

He founded e-commerce giant Amazon in 1994 out of his garage in Seattle. He stepped down as CEO to become executive chairman in July 2021.

(a) Jack Ma
(b) Steve Jobs
(c) Jeff Bezos
(d) Elon Musk

Q41. Western ghats are locally known as _____ in Maharashtra.

(a) Sahyadri
(b) Vindhya
(c) Khadar
(d) Gondwana

Q42. If there are N firms in the economy, each assigned with a serial number from 1 to N, then as per the product method, GDP can be written as _____.

(a) GVA1- GVA2..... - GVA_N
(b) NVA1+ NVA2..... + NVA_N
(c) GVA1 + GVA2..... + GVA_N
(d) GVA1+ NVA2+ GVA3+ NVA4.....

YourMockTest.com — Free Study Material

Q43. National Highways Infra Trust (NHAI InvIT) bonds introduced by Union Minister of Transport and Highways in October 2022 will provide a effective yield of _____ percent each year.

(a) 6.05
(b) 9.05
(c) 7.05
(d) 8.05

Q44. India won the only bronze medal in which team sports at Tokyo Olympics 2020 held in 2021?

(a) Table Tennis
(b) Basketball
(c) Field hockey
(d) Badminton

Q45. What is the average height of inner Himalayas?

(a) 6000 metres
(b) 4500 metres
(c) 5200 metres
(d) 7100 metres

Q46. Article 350A of the Indian constitution is related with _____.

(a) Special officers for linguistic minorities
(b) Facilities for instruction in mother-tongue at primary stage
(c) Direction for development of the Hindi language
(d) Language to be used in Supreme Court and High Courts of India

Q47. What is the percentage of carbon dioxide in the air exhaled by human lungs?

(a) 3.2 percent
(b) 5.9 percent
(c) 2.3 percent
(d) 4.4 percent

Q48. Which Indian cricketer is also known as Little Master?

(a) Umesh Yadav
(b) Virat Kohli
(c) Sunil Gavasker
(d) Kapil Dev

Q49. When was Alluri Sitarama Raju arrested ending a two-year armed tribal struggle?

(a) May 1924
(b) January 1921
(c) April 1919
(d) December 1929

Q50. Which Indian festival celebrates the birth anniversary of spiritual leader Padmasambhava, founder of Tibet Tantric Buddhism?

(a) Bakrid
(b) Losar
(c) Gurpurab
(d) Hemis

QUANTITATIVE APTITUDE

YourMockTest.com — Free Study Material

Q51. If tan A = 3/7, then what is the value of cosec A?

(a) 2√10/3
(b) 7√10/20
(c) √58/3
(d) 3/√58

Q52. A 1800 metres long train crosses a man walking in opposite direction in 10 seconds. If the speed of train is 8 times to the speed of man, then what is the speed of train?

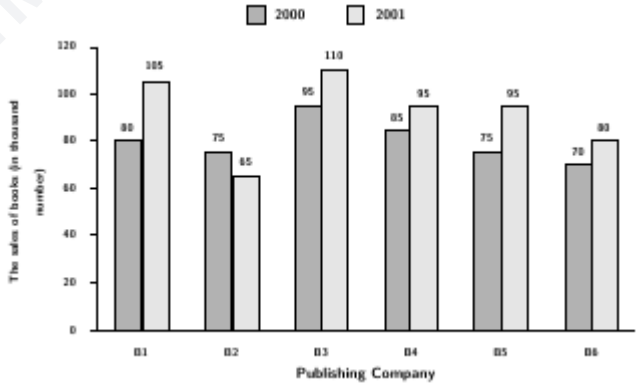
(a) 576 km/hr
(b) 640 km/hr
(c) 596 km/hr
(d) 570 km/hr

Q53. Distance of a chord RS from the centre is 20 cm. If the length of this chord is 30 cm, then what will be the diameter of this circle?

(a) 45 cm
(b) 55 cm
(c) 60 cm
(d) 50 cm

Q54. The bar graph given below shows the sales of books (in thousand number) from six branches - B1, B2, B3, B4, B5 and B6 of a publishing company during two consecutive years 2000 and 2001.

Find the percentage (approximate) of the average sales of branches B2, B4 and B6 in the year 2001 to the average sales of branches B1, B3 and B5 in the year 2001.



(a) 97.95%
(b) 82.26%
(c) 77.42%
(d) 92%

Q55. If $((17)^3 - (7)^3)/(17^2 + 7^2 + k) = 10$, then what is the value of k?

(a) 102
(b) 119
(c) 136
(d) 85

Q56. What is the value of $4^2 - 3^2 + 6^2 - 5^2 + 8^2 - 7^2 + ...92^2 - 91^2$?

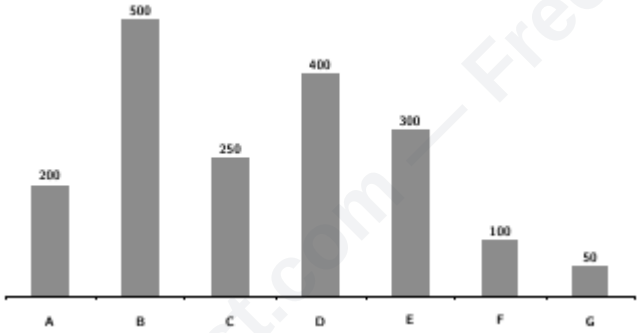
(a) 4272
(b) 4280
(c) 4278
(d) 4275

YourMockTest.com — Free Study Material

Q57. Rs. 43,120 is divided among P, Q and R such that P's share is 4/7 of total share of Q and R together and Q's share is 2/5 of total share of P and R together. What is the share of R?

(a) Rs. 15120
(b) Rs. 14220
(c) Rs. 16400
(d) Rs. 18050

Q58. The bar graph given below shows the number of girls in 7 schools.



The number of girls in A is what percent of the number of girls in F?

(a) 100 percent
(b) 200 percent
(c) 150 percent
(d) 50 percent

Q59. A merchant marks the price of his article 20 percent above the cost price. If he allows 10 percent discount, then what is the profit or loss percentage?

(a) 8 percent profit
(b) 3.33 percent loss
(c) 6 percent loss
(d) 5 percent profit

Q60. Three metallic cubes whose sides are 6 cm, 8 cm and 10 cm respectively are melted and converted into a single cube. If there is no loss of metal in this process, then what is the length of the side of the new cube?

(a) 16 cm
(b) 14 cm
(c) 12 cm
(d) 20 cm

Q61. The average of marks obtained by X and Y is 35 less than the average marks obtained by Y and Z. If the marks obtained by Z is 85, what is the marks obtained by X?

(a) 155
(b) 15
(c) 35
(d) 25

Q62. P sells a bottle to Q at a profit of 30 percent and Q sells it to R at a profit of 20 percent. What is the ratio of cost prices of P and R?

(a) 24 : 35
(b) 25 : 39
(c) 12 : 17
(d) 13 : 19

YourMockTest.com — Free Study Material

Q63. A man borrows a sum of Rs. 12,000 which amounts to Rs. 13,200 in 2 years on simple interest. What would have been the amount if the rate of interest was doubled?

(a) Rs. 13,400
(b) Rs. 14,400
(c) Rs. 12,400
(d) Rs. 14,000

Q64. What is the value of (tan θ - sec θ + 1)/(tan θ + sec θ - 1) ?

(a) sec θ + tan θ
(b) (1 + sin θ)/(cos θ)
(c) 2 sec θ
(d) (cos θ)/(1 + sin θ)

Q65. If A = (18 ÷ 9 × 4)/(15 ÷ 3 × 5) and B = (18 ÷ 36 × 3 + 5 ×1 - 6)/(18 ÷ 6 × 20 - 3 × 4 + 12), then what is the value of (A + B)?

(a) 137/600
(b) 23/100
(c) 187/600
(d) 197/600

Q66. Raman spends 50 percent of his income. If his income increases by 10 percent and the expenditure also increases by 10 percent, then what will be the percentage increase in his savings?

(a) 20 percent
(b) 16.66 percent
(c) 10 percent
(d) 8.33 percent

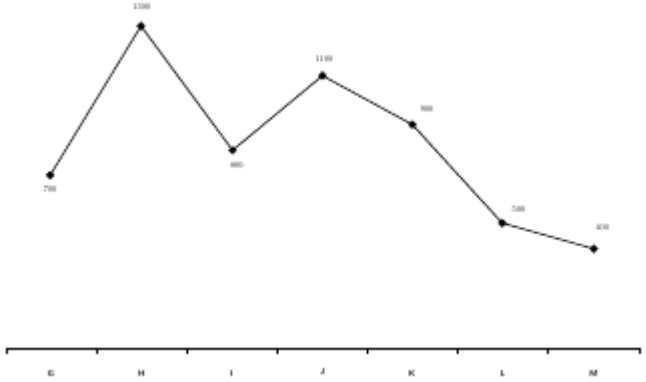
Q67. Two identical circles intersect each other such that each passes through the centre of the other. Length of common chord is 16√3 cm. What is the radius of each circle?

(a) 16 cm
(b) 16√3 cm
(c) 16√2 cm
(d) 8√3 cm

Q68. A alone can complete the project in 10 days; B alone can complete it in 20 days while C alone can complete it in 30 days. They together earn Rs. 1,100 for the project. By how much do the total earnings of A and C exceed the earnings of B?

(a) Rs. 600
(b) Rs. 900
(c) Rs. 700
(d) Rs. 500

Q69. The line chart given below shows the number of girls in 7 schools.



What is the difference between number of girls in school G, H and I together and the number of girls in school J, K, L and

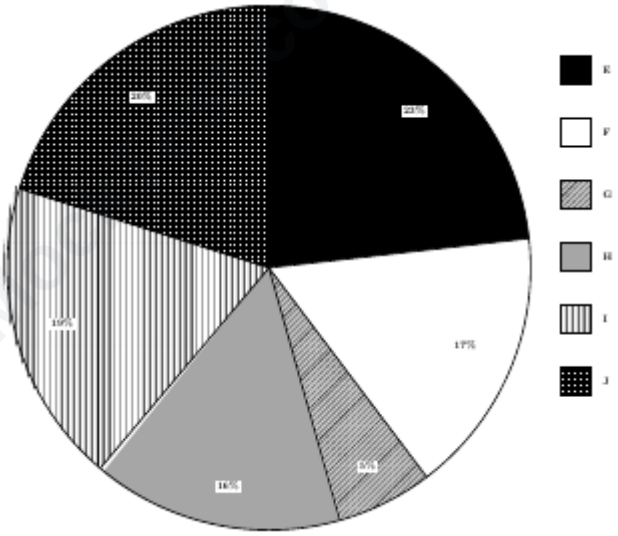
M together?

(a) 400
(b) 50
(c) 100
(d) 200

Q70. What is the value of (cot60° - cot30°)/(1 + cot60°.cot30°) ?

(a) 1/√3
(b) √3
(c) -√3
(d) -1/√3

Q71. The pie chart given below shows the number of girls in six schools. The total number of girls in all these six schools are 4000. Number of girls in a particular school is shown as a percentage of total number of girls in all these six schools.



What is the value of central angle formed by sector F?

(a) 48.4 degree
(b) 72.3 degree
(c) 31.4 degree
(d) 61.2 degree

Q72. Angle subtended by a chord AB on the circumference is 90 degree. If radius of this circle is 8 cm, then what is the length of AB?

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

Q73. In ΔSTU, SE and TF are medians intersect each other at O. If UT = 34 cm, TF = 22.5 cm and SE = 24 cm, then what is the value of angle TOE?

(a) 75 degree
(b) 60 degree
(c) 45 degree
(d) 90 degree

Q74. Which of the following is largest among $(125)^{1}/6$, $(11)^{1}/3$, $(12)^{1}/6$, $(5)^{1}/4$?

(a) $(12)^{1}/6$
(b) $(11)^{1}/3$
(c) $(125)^{1}/6$

(d) (5)¹/4

Q75. If a + 1/a = 4, then what is the value of a^4 + 1/(a^4) ?

(a) 206
(b) 194
(c) 204
(d) 198

GENERAL AWARENESS

Q76. Choose the sentence with no spelling error.

(a) I was rently at a literary festival.
(b) I was recently at a litrary festival.
(c) I was recently at a literary festival.
(d) I was recently at a literery fstival.

Q77. Improve the underlined part of the sentence. Choose 'No improvement' as an answer if the sentence is grammatically correct.

There has been a noticeable fall in the number of children dying from malnutrition.

(a) noticeable falling
(b) No improvement
(c) noticeably falling
(d) noticeably falls

Q78. Rearrange the parts of the sentence in correct order.

P. application, which can also be used to log complaints about
Q. littering or caused by the animals, according to officials
R. registered with the local authority through a mobile phone
S. the residents of Noida can now get their pets like dogs or cats

(a) QRPS
(b) SRPQ
(c) PRQS
(d) RQPS

Q79. Find the part of the given sentence that has an error in it. If there is no error, choose 'No error'.

Near 800 million people worldwide lack updated sanitation.

(a) updated sanitation.
(b) people worldwide lack
(c) No error
(d) Near 800 million

Q80. Improve the underlined part of the sentence. Choose 'No improvement' as an answer if the sentence is grammatically correct.

Scientists have predicted that the cultivation of rice will be affected severe.

(a) affect severe
(b) No improvement
(c) effecting severely
(d) affected severely

Q81. The given sentence is in active voice. Change the voice of the sentence. Select the correct option from the sentences given in options.

She used the aerobic ball during workout.

(a) During workout the aerobic ball were to be used by her.
(b) During workout the aerobic ball will be used by her.

YourMockTest.com — Free Study Material

(c) During workout the aerobic ball had been used by her.
(d) During workout the aerobic ball was used by her.

Q82. Choose the word that can substitute the given group of words.

A child born after the death of his father

(a) Orphan
(b) Pseudonym
(c) Posthumous
(d) Bigot

Q83. Select the option that will improve the bracketed part of the sentence. In case no improvement is needed, select 'No improvement'.

Dad said that, "She would have been a great sister if she was just a bit more careful".

(a) No improvement
(b) that, "She would have been a great sister if she were just a bit more careful"
(c) "She would have been a great sister if she were just a bit more careful"
(d) "She would have been a greatest sister if she was just a bit more careful"

Q84. Choose the word that means the same as the given word.

Fad

(a) Sensation
(b) Standard
(c) Classic
(d) Deviant

Q85. Select the most appropriate option to fill in the blank.

In space it is possible to identify and _____ some unique characteristics of human physiology and biology.

(a) isolate
(b) excess
(c) replete
(d) partition

Q86. Choose the word that is opposite in meaning to the given word.

Devious

(a) Outspoken
(b) Circuitous
(c) Clandestine
(d) Serpentine

Q87. Choose the word that means the same as the given word.

Nacreous

(a) Monochromatic
(b) Pale
(c) Gloom
(d) Iridescent

Q88. Improve the underlined part of the sentence. Choose 'No improvement' as an answer if the sentence is grammatically correct.

Mary doesn't like cartoons because they are loud, so she doesn't watched them.

(a) do not watched this
(b) doesn't watch them
(c) No improvement
(d) does watching them

YourMockTest.com — Free Study Material

Q89. In the following question, out of the given four alternatives, select the alternative which best expresses the meaning of the Idiom/Phrase.

To play with fire

(a) Feel sick
(b) To take foolish risk
(c) To abuse
(d) Show disappointment

Q90. Choose the incorrectly spelt word.

(a) Flufy
(b) Gifted
(c) Juggler
(d) Struggler

Q91. Parts of the following sentence are given as options. Identify the part that contains a grammatical error. If there is no error, select 'No error'.

That was a good / conversation, I look forward / to meet you.

(a) That was a good
(b) to meet you.
(c) conversation, I look forward
(d) No error

Q92. Select the correct indirect form of the given sentence.

Nandini said, "I bought a pen yesterday."

(a) Nandini said she did bought a pen the previous day.
(b) Nandini said that she had bought a pen the previous day.
(c) Nandini said that she had bought a pen yesterday.
(d) Nandini says that she had bought a pen the previous day.

Q93. Select the most appropriate meaning of the given idiom.

Backseat driver

(a) A person who offers unsolicited advice.
(b) To miss an appointed meeting.
(c) Attempt to get control over someone.
(d) To conclude proceedings.

Q94. Choose the word that means the same as the given word.

Corrective

(a) Commuting
(b) Restorative
(c) Compensatory
(d) Sluggish

Q95. Rearrange the parts of the sentence in correct order.

Research shows

P. that medium-skilled employees who work

Q. in front of a computer and work beyond

R. 4.6 effective hours a day produce smaller

S. quantities of output per hour due to fatigue

(a) RQSP
(b) PQSR
(c) SQRP
(d) PQRS

YourMockTest.com — Free Study Material

Directions

In the following passage some of the words have been deleted. Read the passage carefully and select the correct answer for the given blank out of the four alternatives.

Rock candy is actually a collection of large sugar crystals that are "grown" from a sugar-water (1) ____. Crystals form when the smallest particles of a substance, the molecules, arrange themselves in a/an (2) __ and repetitive pattern. Molecules are too small for us to see moving around and (3) __ themselves, but you can get a rough idea of what this would look like by taking a small shallow tray and filling it with marbles, ball bearings, or other spheres. As you (4) __ more spheres, the bottom of the tray becomes covered, then the spheres must form layers on top of (5) ____, and a structure or pattern emerges.

Q96. Select the most appropriate option to fill in blank number 1.

(a) convergence
(b) ramification
(c) disposition
(d) solution

Q97. Select the most appropriate option to fill in blank number 2.

(a) orderly
(b) vastly
(c) wholly
(d) adeptly

Q98. Select the most appropriate option to fill in blank number 3.

(a) summarizing
(b) shielding
(c) arranging
(d) dividing

Q99. Select the most appropriate option to fill in blank number 4.

(a) add
(b) curse
(c) please
(d) toil

Q100. Select the most appropriate option to fill in blank number 5.

(a) others
(b) one
(c) one another
(d) every other

ANSWER KEY

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

YourMockTest.com — Free Study Material

SOLUTIONS

Q1. Answer: (d) Neither conclusion follows

The least possible Venn diagram is given below according to the given information.

Conclusion:

I. No T is A → Does not follow → (As some A are T and some T are H. So, no T is A is not definitely followed)

II. No H is T → Does not follow → (As some A are T and some T are H. So, no H is T is not definitely followed)

III. No A is H → Does not follow → (As some A are T and some T are H. So no A is H is not definitely followed)

So, Neither conclusion follows.

Hence, the correct answer is "Option 4".

Q2. Answer: (b) 38518 - 7701

The pattern followed here is:

Logic: (First number ÷ Second number) = 5.

Let's check each option one by one.

1) 56885 - 11377

=> 56885 ÷ 11377 = 5

2) 38818 - 7701

=> 38818 ÷ 7701 = 5.040.

3) 74235 - 14847

=> 74235 ÷ 14847 = 5

4) 82695 -16539

=> 82695 ÷ 16539 = 5

Clearly, "38515 - 7701" is odd one.

Hence, the correct answer is "38515 - 7701".

Q3. Answer: (b) RXQX

The logic followed here is:

Given: TRAP, MMRE, FHIT, YCZI, ?

Hence, the correct answer is "RXQX".

Q4. Answer: (b) 182

The pattern followed here is:

Given: 34, 71, 108, 145, ?, 219

Hence, the correct answer is "182".

Q5. Answer: (a) Four : Rectangle

The logic followed here is:

Logic: The second word is a polygon, and the first word shows the number of sides of the polygon.

Six: Hexagon

→ Hexagon is a six-sided polygon.

Let's check each option as per the logic,

1) Four: Rectangle

→ Rectangle is a four-sided polygon. => Follow the logic.

2) Four: Pentagon

→ Pentagon is a five-sided polygon.

3) Three: Square

→ Square is a four-sided polygon.

4) Seven: Octagon

→ Octagon is an eight-sided polygon.

Here, we can see that only Option 1 follow the logic.

Hence, the correct answer is "Four: Rectangle".

YourMockTest.com — Free Study Material

Q6. Answer: (d) Wife

The pattern followed here is:

Pointing towards a lady in a photo, Rinku said, "She is my son's sister's mother".

Clearly, the lady is the wife of Rinku.

Hence, the correct answer is "Wife".

Q7. Answer: (a) KLIO

The logic followed here is:

Let's check each option one by one.

1) KLIO

2) RSPT

3) VWTX

4) HIFJ

Hence, the correct answer is "KLIO".

Q8. Answer: (b) [figure]

The pattern followed here is:

Hence, the correct answer is "Option 2".

Q9. Answer: (c) [figure]

The pattern followed here is:

Hence, the correct answer is "Option 3".

Q10. Answer: (a) DE

The logic followed here is:

Logic: 2 has been added in the first and second letter's positional value to get the corresponding first and second letter.

PM: RO

Similarly,

BC:?

Hence, the correct answer is "DE".

Q11. Answer: (d) ÷ and -, 4 and 8

Let's check each option,

1) + and -, 8 and 6

→ 10 × 6 ÷ 8 + 2 - 4 =?

→ 10 × 3/4 + 2 - 4 =?

→ 7.5 + 2 - 4 =?

→ 9.5 - 4 =?

→ 5.5 =?

2) + and ×, 10 and 4

→ 4 + 8 ÷ 6 - 2 × 10 =?

→ 4 + 4/3 - 2 × 10 =?

→ 4 + 4/3 - 20 =?

→ 16/3 - 20 =?

→ - 44/3 =?

3) ÷ and -, 10 and 8

→ 8 × 10 - 6 ÷ 2 + 4 =?

→ 8 × 10 - 3 + 4 =?

→ 80 - 3 + 4 =?

→ 84 - 3 =?

→ 81 =?

4) ÷ and -, 4 and 8

→ 10 × 4 - 6 ÷ 2 + 8 =?

YourMockTest.com — Free Study Material

→ 10 × 4 - 3 + 8 =?

→ 40 - 3 + 8 =?

→ 48 - 3 =?

→ 45 =?

Here, we can see that Option 4 gives the value 45.

Hence, the correct answer is "÷ and -, 4 and 8".

Q12. Answer: (b) 12

The pattern followed here is:

Logic: Addition of Left hand side alphabet + Right hand side alphabet = Code.

1) 'ONLINE + THEIR' is coded as '11'

=> 6 letter in the word ONLINE and 5 letter in the word THEIR

=> 6 + 5 = 11

And,

2) 'FREE + NEW' is coded as '7'

=> 4 letter in the word FREE and 3 letter in the word NEW

=> 4 + 3 = 7

Similarly,

3) 'HELP + STUDENTS' in that code language "?"

=> 4 letter in the word HELP and 8 letter in the word STUDENTS

=> 4 +8 = 12

Hence, the correct answer is "12".

Q13. Answer: (a) (79, 18, 178)

The logic followed here is:

Logic: Third Number = (Sum of reversal of 1^(st) and 2^(nd) number)

(182, 79, 378):

→ 378 = 281 + 97

(345, 16, 604):

→ 604 = 543 + 61

Let's check each option as per the logic,

1) (79, 18, 178):

→ 178 = 97 + 81 => Follow the logic.

2) (53, 72, 82):

→ 82 ≠ 35 + 27

3) (68, 79, 193):

→ 193 ≠ 86 + 97

4) (84, 64, 84):

→ 84 ≠ 48 + 46

Here, we can see that only Option 1 follow the logic.

Hence, the correct answer is "(79, 18, 178)".

Confusion PointsReversing a number does not typically fall under the category of "breaking" a number.

In mathematical terms, breaking a number usually refers to decomposing it into parts, such as breaking it into digits (e.g., breaking 123 into 1, 2, and 3) as restricted in the question.

Reversing a number, on the other hand, involves changing the order of its digits (e.g., reversing 123 to get 321). This is a different operation and is usually referred to as "reversing" or "mirroring" a number, rather than "breaking" it.

Q14. Answer: (b) 11

The number of cycles which are not pedals = (6 + 5) = 11

Hence, the correct answer is "11".

Mistake Pointscars We will not consider car while solving this problem because the question has not mentioned about cars

YourMockTest.com — Free Study Material

Q15. Answer: (b) RAGQSR

PRINTS: QRLHQO

Similarly,

STRICT:?

Hence, the correct answer is "RAGQSR".

Q16. Answer: (d) 13 - 2368

The pattern followed here is:

Logic: (First number)³ + (First number)² = Second number.

Let's check each option one by one.

1) 9 - 810

= $(9)^3 + (9)^2$

= 729 + 81 = 810 = 810

2) 11 - 1452

= $(11)^3 + (11)^2$

= 1331 + 121 = 1452 = 1452

3) 7 - 392

= (7)3 + (7)2

= 343 + 49 = 392 = 392

4) 13 - 2368

= (13)3 + (13)2

= 2197 + 169 = 2366 ≠ 2368

Hence, the correct answer is "13 - 2368".

Q17. Answer: (b) 11

The pattern followed here is:

Logic: @ Replace with + and # is replace with -

1) 13 @ 2 # 5 = 10

= 13 + 2 - 5

= 15 - 5 = 10

And,

2) 43 # 9 @ 16 = 50

= 43 - 9 + 16

= 59 - 9 = 50

Similarly,

3) 8 @ 6 # 3 = ?

= 8 + 6 - 3

= 14 - 3 = 11

Hence, the correct answer is "11".

Q18. Answer: (a) [figure]

The pattern followed here is:

Hence, the correct answer is "Option 1".

Q19. Answer: (c) West Bengal : Kolkata

The logic followed here is:

Logic: The first word is a state, and the second word is its capital city.

Uttar Pradesh: Lucknow

→ Lucknow is the capital city of Uttar Pradesh.

Let's check each option,

1) Sikkim: Trivandrum

→ The capital city of Sikkim is Gangtok, not Trivandrum.

2) Rajasthan: Sikar

YourMockTest.com — Free Study Material

→ The capital city of Rajasthan is Jaipur, not Sikar.

3) West Bengal: Kolkata

→ Kolkata is the capital city of West Bengal. => Follow the logic.

4) Chennai: Tamil Nadu

→ Here, the order of the words is incorrect.

Here, we can see that only Option 3 follow the logic.

Hence, the correct answer is "West Bengal: Kolkata".

Q20. Answer: (b) Karachi - Pakistan

The logic followed here is:

Logic: The first word is the capital city, and the second word is the country.

Let's check each option as per the logic,

1) Ottawa - Canada

→ Ottawa is the capital city of Canada.

2) Karachi - Pakistan

→ Karachi is not the capital city of Pakistan. => Doesn't follow the logic.

3) Rome - Italy

→ Rome is the capital city of Italy.

4) Canberra - Australia

→ Canberra is the capital city of Australia.

Here, we can see that only Option 2 doesn't follow the logic and is the odd pair.

Hence, the correct answer is "Karachi - Pakistan".

Q21. Answer: (d) [figure]

The pattern followed here is:

Hence, the correct answer is "Option 4".

Q22. Answer: (c) 4, 2, 1, 3, 5

The correct order as per the dictionary is:

4) Layout

2) League

1) Lean

3) Lecture

5) Leftist

Hence, the correct answer is "4, 2, 1, 3, 5".

Q23. Answer: (c) 541

The pattern followed here is:

Logic: (First number + 233) = Second number.

1) 319 : 552

= 319 + 233 = 552

And,

2) 146 : 379

= 146 + 233 = 379

Similarly,

3) ? : 774

= 774 - 233 = 541

Hence, the correct answer is "541".

Q24. Answer: (b) [figure]

The pattern followed here is:

1) Corner dark shaded triangle shifted corner to corner in anticlockwise direction in every next figure.

2) Outside circle is shifted 90º in anticlockwise direction and turn shaded to unshaded then shifted 90º clockwise direction and turn unshaded into shaded and so on in next figure.

YourMockTest.com — Free Study Material

3) Inside circle is shifted 90º in clockwise direction then shifted 90º anticlockwise direction so on in next figure.

Hence, the correct answer is "Option 2".

Q25. Answer: (b) 26

The pattern followed here is:

Quadrilateral means a four- sided figure. So, quadrilateral in the given figure are as follows.

Hence, the correct answer is "26".

Q26. Answer: (d) 107th

The correct answer is 107th

Key Points:

• India has been ranked 107th out of 121 countries in the 2022 Global Hunger Index (GHI) released on 14th October 2022.

• In 2021, India was ranked 101st out of 116 countries.

• India has fared poorer than its neighbors Pakistan (99th), Nepal (81st) and Bangladesh (84th).

• The index calculates the hunger levels and malnutrition across the world.

• Published by: Concern Worldwide and Welthungerhilfe

Important Points:

• This year, the report accessed data from 136 countries but evaluated 121 of them.

• The Global Hunger Index score is calculated on four indicators – undernourishment, child wasting (the share of children under the age of five with low weight for their height), child stunting (children under the age of five with low height for their age) and child mortality (the mortality rate of children under the age of five).

• India’s global hunger index score is 29.1, which puts the country in the “serious” category of hunger problems.

• In 2021, India's score was 27.5.

• Lesser GHI score means better ranking in the index.

• Globally, 17 countries, including China, Hungary, Montenegro, Uzbekistan, Russia and Saudi Arabia, shared the top spot.

• No country has been placed in the extremely alarming category this year.

Q27. Answer: (c) Erasable Programmable Read Only Memory

The correct answer is Erasable Programmable Read-Only Memory.

Key Points:

• EPROM (Erasable Programmable Read-Only Memory) is a form of computer memory.

• It does not lose its content when the power supply is cut off and that can be erased and reused.

• EPROMs are generally employed for programs designed for repeated use but that can be upgraded with a later version of a program.

• EPROMs are erased with ultraviolet light.

Additional Information:

• The EPROMs have been upgraded with extended capability as an EEPROM (Electrically Erasable Programmable Read-Only Memory).

• Flash memory, which is extensively used in computers is an EEPROM.

Q28. Answer: (d) Helium

Correct Answer Helium

Key Points:Concept:

• An atom is any particle of matter at its most basic level which contains at least one proton.

• Molecules are made up of one or more atoms.

• Types of molecules are-

• Monoatomic molecules

• Diatomic molecules

• Triatomic molecules

Explanation:

Monoatomic molecules:

• A molecule composed of just one atom, and lacking any covalent bonds.

• The noble gases such as He, Ne, Ar, Kr, Xe, and Rn are monoatomic molecules.

Additional Information:Diatomic molecules:

• Diatomic molecules are molecules that contain only two atoms bonded to one another.

• Examples are hydrogen, oxygen, etc.

Triatomic molecules:

• Triatomic molecules are molecules composed of three atoms, of either the same or different chemical elements.

• An example is ozone.

Q29. Answer: (b) Kailash Satyarthi

The correct answer is Kailash Satyarthi

Key Points:Kailash Satyarthi

• Kailash Satyarthi is an Indian social activist who works and campaigned against child labour in India and elsewhere and advocated the right to education.

• In 2014 he was the recipient of the Nobel Peace Prize, along with Pakistan Malala Yousafzai, “for their struggle against the suppression of children and young people and for the right of all children to education”.

• Kailash Satyarthi founded the movement called Bachapan Bachao Andolan in India. Hence statement B is correct.

• Kailash Satyarthi is the fifth Indian Nobel prize winner.

Additional Information:

Noble Prize winners from India:

• Rabindranath Tagore

• Chandrashekhar Venkataraman

• Mother Teresa

• Amartya Sen

Q30. Answer: (b) 46

The correct answer is 46

Key Points

• Mahatma Gandhi was born on 2 Oct 1869.

• He returns to India from South Africa on 9 January 1915.

• At the time, Age of Mahatma Gandhi was 45 years 3 months and 7 days.

• After arriving in India, Mahatma Gandhi successfully organized Satyagraha Movements in various places.

• Gandhi returned to India from South Africa in 1915 at the request of Gopal Krishna Gokhale.

• Gandhi Ji returns from South Africa can be seen as perfect timing for the future of development of the Indian national movement. Gokhale helped Gandhiji at the time of hardships in raising funds when Gandhiji was in South Africa.

• Gokhale insisted Gandhiji that he has been far away from his nation. He wanted Gandhiji to come to India and know the situation of India under British Rule.

Important Points:Things Mahatma Gandhi did in South Africa:

• He organised non-violent protests against the racial discrimination directed towards the native Africans and Indians in 1894.

• He came to India for a short time in 1896 to gather fellow India to serve in South Africa,

• He organised the Indian Ambulance corps for the British during the outbreak of the Boer War in 1899.

• Het set up Phoenix Farm near Durban where Gandhi trained his cadre for peaceful restraint or non-violent Satyagraha.

• He also set up another farm which was Tolstoy Farm which is considered the place where Satyagraha was moulded into a weapon of protest.

Movements Started by Gandhiji in India:

• Champaran Satyagraha of 1917

• Kheda Satyagrah of 1918

• Khilafat Movement Post World War I

• Non-Co-operation Movement

• Civil Disobedience Movement

• Negotiations over Round Table Conferences

• Gandhi Irwin Pact

• Quit India Movement

Q31. Answer: (a) Chicken pox

The correct answer is Chicken pox.

Key Points

• Chicken pox:
• The virus that causes chickenpox is known as varicella-zoster.
• It results in a small number of fluid-filled blisters and an itchy rash.
• People who have never had chickenpox or who haven't received the vaccine are very contagious.
• Within 10 to 21 days of coming into contact with a virus carrier, symptoms start to manifest.
• The average recovery time is two weeks.

Additional Information

Disease	
Virus	AIDS, Common cold, Ebola, Genital herpes, Influenza, Measles, Chickenpox and shingles, Coronavirus disease 2019, etc.
Fungi	Aspergillus infection, Athlete's foot, Jock itch, Ringworm, Coccidioidomycosis, Sporotrichosis, valley fever, histoplasmosis, etc.
Bacteria	Tetanus, Tuberculosis, Pneumonia, Cholera, Dysentery, Pseudomonas Infection, Gonorrhea, etc.
Protozoa	Dysentery, malaria, Amoebiasis, Chagas disease, Babesiosis, Giardiasis, etc.

Q32. Answer: (b) .pwpt

The correct answer is .pwpt.

Key Points

• Microsoft PowerPoint 365
• Microsoft PowerPoint 365 is a subscription-based version of the popular presentation software developed by Microsoft.
• It is part of the Microsoft 365 suite of productivity applications, which includes Word, Excel, Outlook, and other tools.
• PowerPoint 365 offers a range of features and enhancements compared to earlier versions of PowerPoint.

Additional Information

File Format	Description
.PPTM	PowerPoint Macro-Enabled Presentation format, similar to .pptx but allows the inclusion of macros and VBA (Visual Basic for Applications) code within the presentation.
.PPT	PowerPoint Presentation format, used in older versions of PowerPoint (prior to PowerPoint 2007).
.PPTX	The default file format for PowerPoint presentations. It supports tables and other slide elements.
.CSV	Comma-separated values format, which represents tabular data with values separated by commas.
.XLSX	Excel workbook format, which can contain multiple worksheets with tables and other data.
.ODS	OpenDocument Spreadsheet format, an open standard for spreadsheets that can include tables and formulas.
.TXT	Plain text format, where tabular data can be represented using spaces or tabs to separate columns.
.HTML	Hypertext Markup Language format, which can be used to embed tables with formatting in PowerPoint.
.XML	Extensible Markup Language format, which allows structured data representation, including tables.

Q33. Answer: (b) Ninth schedule

The correct answer is Ninth schedule.

Key Points

YourMockTest.com — Free Study Material

• Ninth schedule

• Ninth Schedule of the Indian Constitution pertains to protect the state laws pertaining to land reforms from being challenged in the Judiciary.

• However, Judicial review was made a part of the Basic Structure of the Constitution after the Keshavananda Bharti Case.

• Further, the Coehlo case made a judgement where subjects from the ninth schedule couldn't be kept immune from judicial review.

Additional Information

Schedules	Features of Schedules
1st Schedule	It contains the name of States and Union Territories.
2nd Schedule	The provisions in relation to allowances, privileges, and emoluments
3rd Schedule	Oath and affirmation
4th Schedule	It contains the provisions in relation to the allocation of seats for States and Union Territories in the Rajya Sabha
5th Schedule	It contains provisions in relation to the administration and control of scheduled areas and scheduled tribes
6th Schedule	It contains provisions in relation to the administration of tribal areas in the states of Assam, Meghalaya, Tripura and Mizoram
7th Schedule	This schedule deals with the three legislative lists
8th Schedule	It deals with the 22 official languages recognized by the Constitution:
9th Schedule	It deals with the state acts and regulations of that deal with land reforms and the abolition of the Zamindari system. It also deals with the acts and regulations of the Parliament dealing with other matters.
10th Schedule	It contains provisions relating to disqualification of the members of Parliament and State Legislatures on the ground of defection.
11th Schedule	It contains the provisions that specify the powers, authority and responsibilities of Panchayats.
12th Schedule	It deals with the provisions that specify the powers, authority and responsibilities of Municipalities.

Q34. Answer: (b) Mars and Jupiter

The correct answer is Mars and Jupiter.

Key Points

• Asteroids have their orbits between Mars and Jupiter. In the past, planets and their moons have existed between Mars and Jupiter in the asteroid belt.

• They were destroyed in some kind of affliction. The asteroids belt could be their scattered remains. Hence, the combined gravitational force of Jupiter and Mars accelerates the moving of the asteroids around them.

• Ceres, Vesta, Pallas and Hygiea are few names of Asteroids.

Additional Information

• The Solar System has four terrestrial planets: Mercury, Venus, Earth, and Mars. These are also inner planets.

• The Solar System has four outer planets: Jupiter, Saturn, Uranus, Neptune.

• For more and latest info on this topic - regularly visit below link -

https://solarsystem.nasa.gov/moons/overview/

Q35. Answer: (a) ICICI Bank

The correct answer is ICICI Bank.

Key Points

• AIFIs comprising Development Financial Institutions (DFIs) and Investment Institutions play a pivotal role in the financial market.

• To facilitate higher resource flow to the infrastructure sector, the Companies (Amendment) Ordinance promulgated on October

YourMockTest.com — Free Study Material

31, 1998 has designated the Infrastructure Development Finance Company (IDFC) as a Public Financial Institution (PFI).

• The Discussion Paper prepared by the Reserve Bank on “Harmonising the Role and Operations of Development Financial Institutions and Banks” (January 1999) has envisaged the architecture of Financial System.

Additional Information

• ICICI in ICICI Bank stands for Industrial Credit and Investment Corporation of India.

• ICICI was formed in 1955.

• The objective was to create a development financial institution for providing medium-term and long-term project financing to Indian businesses.

• Headquarters: Mumbai.

Q36. Answer: (d) Persia

The correct answer is Persia.

Key Points

• Qawwali is a form of Sufi devotional music that originated in the Persia.

• Qawwali music is popular in India, Bangladesh, and Pakistan.

• Qawwali music is popular in the Punjab and Sindh regions of Pakistan.

• In India, it is popular in Hyderabad, Delhi, and the Northern regions.

• Popular in Dhaka and Chittagong regions of Bangladesh.

• Notable Qawwals: Munshi Raziuddin, Fateh Ali Khan, Faiz Ali Faiz, Nizami Bandhu, Ateeq Hussain Khan.

Q37. Answer: (c) Ukraine

The correct answer is Ukraine.

Key Points

• After defeating South Korea 3–1 in the final, Ukraine secured their first FIFA U-20 World Cup.

• The final tournament will have a total of 24 players. Apart from Poland, which qualified as hosts automatically, 23 other teams qualified from six different continental competitions.

Additional Information

• Since its establishment in 1977 as the FIFA World Youth Championship, the FIFA U-20 World Cup has been held every two years and is contested by the under-20 national teams of FIFA member associations.

• Poland hosted the tournament from the 23rd to the 15th of June, 2019.

• Poland had previously hosted UEFA international football competitions, including the UEFA Euro 2012 with Ukraine and the 2017 UEFA European Under-21 Championship.

Q38. Answer: (b) 2500

The correct answer is 2500.

Key Points

• The approximate length of the Great Himalayan range, also known as the central axial range.

• It is 2,500 km from east to west, and their width varies between 160-400 km from north to south.

• The Himalayas consist of three parallel ranges - Himadri, Himachal & Shiwaliks.

• Himadri is also known as Inner Himalayas or Greater Himalayas.

• Himachal is also known as Middle Himalayas or Lesser Himalayas.

• Shiwalik is also known as Outer Himalayas.

Q39. Answer: (d) Savaj

The correct answer is Savaj.

Key Points

The 36th National Games

• The 36th National Games is coming to an end after a glorious display of sporting performance and sportsmanship spirit.

• In its 36th edition, Gujarat hosted the National Games for the first time in 2022.

• The National Games 2022 was held across six cities, Ahmedabad, Gandhinagar, Surat, Vadodara, Rajkot, and Bhavnagar, in Gujarat.

• Almost 7,000 athletes from 28 Indian States, eight Union Territories, and Services, the sports team of the Indian Armed Forces, competed for medals in 36 different sports.

• The Official mascot for the 36th National Games is “SAVAJ”, it portrays a sportsman’s most prominent personality traits of self-confidence, vigor, a strong sense of motivation, an inner desire to succeed, a strong sense of focus, a natural leader, and a

YourMockTest.com — Free Study Material

goal setter

• Savaj- taranhar in gujarati means “Savior” in English. Savaj is the representation of The Asiatic Lion, which today survives only in wild India.

• National Games

• The National Games trace its origins to the Olympic Movement, which became highly popular in India in the 1920s.

• The National Games of India was organized as the Indian Olympic Games in the initial years.

• Since the 9th edition of the 1924 Indian Olympic Games in Lahore, these games have been held every two years in major cities of India.

• In 1940, the Indian Olympic Games were organized as National Games.

• It involves competition between sportsmen from various parts of the country.

• The city of Lucknow in Uttar Pradesh hosted the inaugural edition of the National Games in Independent India.

• These games’ duration and regulations are within the jurisdiction of the Indian Olympics Association.

• The National Games must be conducted in such a way that they do not clash with the Olympic Games and Asian Games.

Q40. Answer: (c) Jeff Bezos

The correct answer is Jeff Bezos.

Key Points

• Amazon was founded by Jeff Bezos in 1994 as an internet bookseller.

• He founded e-commerce giant Amazon in 1994 out of his garage in Seattle. He stepped down as CEO to become executive chairman on July 5, 2021.

• Overview

• Bezos is the founder of Amazon, the world's biggest online retailer.

• The Seattle-based company sells electronics, household goods, and other products through its flagship website.

• It also controls the Whole Foods grocery chain and offers cloud computing and streaming services.

Additional Information

• Amazon:

• Founded: 1994

• Founder: Jeff Bezos

• Headquarters: Washington

• Executive Chairman: Jeff Bezos

• President and CEO: Andy Jassy

• Amit Agarwal is the Country head of Amazon India.

Q41. Answer: (a) Sahyadri

The correct answer is Sahyadri.

Key Points

• Western Ghat is known as Sahyadri Mountain in Maharashtra, Goa & Karnataka.

• The Western Ghat has a high altitudinal variation and the average elevation is 1200m.

• Sahyadri mountain range or the Western Ghat originates near the town of Nasik in Maharashtra.

• It runs parallel to the coast and merges with the Nilgiri hills complex of Tamil Nadu in the south.

• These Hills cover 1600 Km and form the catchment area for the complex river drainage system.

• Nilgiri Hills is located in Tamil Nadu, Kerala, and Karnataka state.

• Nilgiri Hills meet at the junction of Western Ghats & Eastern Ghat.

• Doddabetta is the highest peak in the Nilgiri Hills at 2637m.

• Anaimudi is the highest mountain peak of southern India located in the Anaimalai Hills at 2695m.

Q42. Answer: (c) GVA1 + GVA2..... + GVA_N

The correct answer is GVA1 + GVA2 ..... + GVAN.

Key Points Gross Domestic Product:

• Definition:

• GDP is the final value of the goods and services produced within the geographic boundaries of a country during a specified period of time, normally a year.

• GDP is the total value of all final goods and services produced during a particular year.

• GDP growth rate is an important indicator of the economic performance of a country.

• It counts the goods and services produced within the country and hence does not consider the products that the country imports from another country.

• It can be measured by three methods, namely,

• Output Method:

• This measures the monetary or market value of all the goods and services produced within the borders of the country.

• In order to avoid a distorted measure of GDP due to price level changes, GDP at constant prices o real GDP is computed. GDP (as per output method) = Real GDP (GDP at constant prices) – Taxes + Subsidies.

• Expenditure Method:

• This measures the total expenditure incurred by all entities on goods and services within the domestic boundaries of a country.

• GDP (as per expenditure method) = C + I + G + (X-IM) C: Consumption expenditure, I: Investment expenditure, G: Government spending and (X-IM): Exports minus imports, that is, net exports.

• Income Method:

• It measures the total income earned by the factors of production, that is, labour and capital within the domestic boundaries of a country.

• GDP (as per income method) = GDP at factor cost + Taxes – Subsidies.

Q43. Answer: (d) 8.05

The correct answer is 8.05.

Key Points

• National Highways Infra Trust (NHAI InvIT), the infrastructure investment trust sponsored by National Highway Authority of India (NHAI) to support Government of India's National Monetization Pipeline, has raised a sum of Rs 1,430 crore from domestic and international investors through placement of its units, for part funding its acquisition of three additional road projects from NHAI.

• The proposed issue has a base issue size of Rs. 750 crores with an option to retain oversubscription up to Rs. 750 crores, aggregating up to Rs. 1,500 crores (“Issue”).

• The NCD issue offers coupon rate of 7.90% p.a. payable semi-annually and Effective Yield of 8.05%per annum for NCD holders in all categories.

• The NCDs are proposed to be listed on BSE and NSE (collectively, the “Stock Exchanges”) with BSE as the Designated Stock Exchange for the Issue.

• The NCDs have been rated ‘CARE AAA/Stable’ by CARE Ratings Limited and ‘IND AAA/Stable’ by India Ratings and Research Private Limited.

• The minimum application size would be Rs. 10,000 (i.e. 10 NCDs) and thereafter in multiples of Rs. 1,000 (i.e. 1 NCD) thereof.

Q44. Answer: (c) Field hockey

The correct answer is Field hockey.

Key Points

• India defeated Germany to win the men's hockey bronze medal at the Olympic Games held in Tokyo in 2021.

• Indian hockey team Captian (Male) - Manpreet Singh

• Indian Hockey team Captain (Female) - Rani Rampal

• India won three bronze medals at the Summer Olympic Games in 1972, 1968, and 2020(Tokyo).

• India's team won eight gold medals in 1928, 1932, 1936, 1948, 1952, 1956, 1964, and 1980.

• India won one silver medal in the Rome Olympics in the year 1960 and Pakistan won the Gold medal that year.

Additional Information

Year	Medal	Host
1928	Gold	Amsterdam, Netherlands
1932	Gold	Los Angles, US
1936	Gold	Berlin, Germany
1948	Gold	London, Great Britain
1952	Gold	Helsinki, Finland
1956	Gold	Melbourne, Australia
1960	Silver	Rome, Italy

1964	Gold	Tokyo, Japan
1968	Bronze	Mexico City, Mexico
1972	Bronze	Munich, West Germany
1980	Gold	Moscow, Soviet Union
2020	Bronze	Tokyo, Japan

Q45. Answer: (a) 6000 metres

The correct answer is 6000 metres.

Key Points

• The average height of the Inner Himalayas is 6000 meters.

• Greater Himalayas

• It is also called as Inner Himalayas or Himadri.

• It is the most continuous range consisting of the loftiest peaks.

• The average height of these peaks is 6,000 metres.

• It contains all prominent Himalayan peaks.

• The core of this part of the Himalayas is composed of granite.

• It is perennially snowbound, and a number of glaciers descend from this range.

Additional Information

• Himachal or Lesser Himalayas

• This range lies to the south of the Himadri and forms the most rugged mountain system.

• The ranges are mainly composed of highly compressed and altered rocks.

• The altitude varies between 3,700 and 4,500 metres and the average width is of 50 Km.

• Pir Panjal, the Dhaula Dhar and the Mahabharat ranges are important ranges in the Himalayas.

• This range consists of the famous valley of Kashmir, the Kangra and the Kullu Valley in Himachal Pradesh.

• This region is well-known for its hill stations.

• Shivalik Range

• It is the outermost range of the Himalayas.

• They extend over a width of 10-50 Km and have an altitude varying between 900 and 1100 metres.

• The longitudinal valley lying between lesser Himalayas and the Shiwaliks is known as Duns.

• Dehra Dun, Kotli Dun and Patli Dun are some of the well-known Duns

Q46. Answer: (b) Facilities for instruction in mother-tongue at primary stage

The correct answer is Facilities for instruction in mother-tongue at primary stage.

Key Points

• Part XVII of the Indian Constitution deals with the official languages in Articles 343 to 351.

• Article 350A: (Facilities for instruction in mother-tongue at the primary stage) provides that it shall be the endeavour of every State and of every local authority within the State to provide adequate facilities for instruction in the mother-tongue at the primary stage of education to children belonging to linguistic minority groups.

• Article 350B: (Special Officer for linguistic minorities): The President should appoint a special officer for linguistic minorities to investigate all matters relating to the constitutional safeguards for linguistic minorities and to report to him. The President should place all such reports before the Parliament and send them to the state government concerned.

• Article 351: (Directive for development of the Hindi language) provides that it shall be the duty of the Union to promote the spread of the Hindi language.

Q47. Answer: (d) 4.4 percent

The correct answer is 4.4 percent.

Key Points

• Breathing means taking in air rich in oxygen and giving out air rich in carbon dioxide with the help of respiratory organs.

• The taking in of air rich in oxygen into the body is called inhalation and giving out of air rich in carbon dioxide is known as exhalation.

YourMockTest.com — Free Study Material

Q48. Answer: (c) Sunil Gavasker

The correct answer is Sunil Gavasker.

Key Points

• Sunil Gavaskar is famously known as the 'little master'.

• The name was given to him by commentators after watching his skills in the 1970s.

• It was also because of his short height of 5'6 and that he lasted against tall pacers in the field for long durations in test matches.

• The nickname was later given to Sachin Tendulkar as well.

• Haryana Hurricane is the nickname of Kapil Dev.

• Anil Kumble was given the nickname Jumbo by Navjot Singh Sidhu.

Q49. Answer: (a) May 1924

The correct answer is May 1924.

Key Points

• In 1924, Alluri was detained. He was publicly executed in Koyyuru on May 7 after being tied to a tree and shot.

• This effectively put an end to the armed uprising.

• His final resting place (tomb) is at Krishnadevipeta, 111 km from Visakhapatnam.

Additional Information

• In August 1922, he launched what is now known as the Rampa Rebellion against the British.

• The Rampa administrative area was home to about 28,000 tribes.

• These tribes followed the ‘Podu’ system of cultivation, whereby every year, some forest tracts were cleared for cultivation, as it was their only source for food.

• To get the forests cleared, ‘The Madras Forest Act, 1882’ was passed, thereby restricting the free movement of the tribal communities and prohibiting them from engaging in their traditional Podu agricultural system.

• This oppressive order was the beginning of the tribal revolt, also known as the Manyam Rebellion.

• He was honoured for his valour and fiery spirit with the title, “Manyam Veerudu” (Hero of the Jungle).

• Every year, the Government of Andhra Pradesh commemorates his birth date, the 4th of July, as a state festival.

Q50. Answer: (d) Hemis

The correct answer is Hemis.

Key Points

• Two-day long annual Hemis festival dedicated to the Guru Padmasambhava began on 26 June 2015 in the largest monastery of Ladakh Hemis Gompa (monastery).

• Hemis festival is celebrated to mark the birth anniversary of Guru Padmasambhava.

• During this festive season, Lamas called 'chhams,' perform masked dances and sacred plays to the accompaniment of cymbals, drums, and longhorns. The head lama presides over the function.

• The festival takes an auspicious turn every 12 years in the Tibetan Year of the Monkey when the two-storey-high Thanka depicting Padmasambhava is displayed.

Additional Information

• Bakrid

• Bakrid is known as Id-ul-Zuha.

• Id-ul-Zuha (Bakr-Id), is a festival of great rejoice, special prayers, and exchange of greetings and gifts mark this festival of Muslims.

• Id-ul-Zuha, the festival of sacrifice is celebrated with traditional fervor and gaiety in India and the world.

• It is called Id-ul-Adha in Arabic and Bakr-Id in the Indian subcontinent, because of the tradition of sacrificing a goat or 'bakr' in Urdu.

• Losar

• The Losar Festivals are celebrated in Arunachal Pradesh.

• It is celebrated by the people of the Monpa Tribe who are said to be inhabitants of Arunachal Pradesh.

• Losar is a 3-day festival, which is celebrated with great pomp and show in Tawang.

• The festival is observed to ward off evil spirits and welcome the new year that shall be filled with happiness and prosperity.

• GurPurab

• In the Sikh tradition, a GurPurab is a celebration of the anniversary of the birth of a guru, marked by a festival.

• The word Gur Purab first appeared in the days of the gurus.

YourMockTest.com — Free Study Material

• It is a compound of the word Purab (or Parva in Sanskrit), with the word guru, indicating a festival or celebration.

• According to the controversial Bhai Bala Janamsakhi, Guru Nanak was born on the Full Moon (Pooranmashi) of the Kartik Indian Lunar Month.

Q51. Answer: (c) √58/3

Given:

tan A = 3/7

Concept Used:

Trigonometric identity: $\text{cosec}^2 A = 1 + \cot^2 A$

Calculation:

=> cot A = 7/3 (since cot A = 1/tan A)

=> $\text{cosec}^2 A = 1 + (7/3)^2$

=> $\text{cosec}^2 A = 1 + 49/9$

=> $\text{cosec}^2 A = 58/9$

=> cosec A = √(58/9) = √(58) / 3

Hence, cosec A = √(58) / 3

Q52. Answer: (a) 576 km/hr

Given:

Length of train = 1800 meters,

Time taken = 10 seconds,

Ratio of speeds = 8:1

Concept Used:

Speed = Distance / Time

Calculation:

Total speed = Distance / Time = 1800 m / 10 s = 180 m/s (This is the relative speed)

Speed of train = 8/9 × total speed = 8/9 × 180 = 160 m/s

In km/hr, 160 × 18/5 = 576 km/hr

Therefore the speed of the train is 576 km/hr.

Q53. Answer: (d) 50 cm

Shortcut Trick

The perpendicular from the center bisects the chord, so half-chord = 30 ÷ 2 = 15 cm.

Using Pythagorean Triplet (15, 20, 25), the radius is 25 cm.

Diameter = 2 × Radius = 2 × 25 = 50 cm.

Therefore The correct answer is 50 cm.

Alternate Method

Given: Distance of chord (d) = 20 cm, Length of chord (c) = 30 cm.

Formula Used: Radius (r) = $\sqrt{[d^2 + (c/2)^2]}$; Diameter (D) = 2 × r.

=> Half-chord length (MS) = 30 ÷ 2 = 15 cm

=> In right-angled triangle OMS, $OM^2 + MS^2 = OS^2$

=> $20^2 + 15^2 = \text{Radius}^2$

=> 400 + 225 = Radius^2

=> $\text{Radius}^2 = 625$

=> Radius = √625 = 25 cm

=> Diameter = 2 × 25 = 50 cm

Therefore The correct answer is 50 cm.

Additional Information

Chord Perpendicular Property

A perpendicular drawn from the center of a circle to a chord always bisects the chord into two equal halves.

Pythagoras Theorem

For any right-angled triangle, the square of the hypotenuse (radius) is equal to the sum of the squares of the other two sides (distance and half-chord).

YourMockTest.com — Free Study Material

Circle Diameter

The diameter is defined as the longest chord passing through the center, and its length is exactly twice the radius.

Q54. Answer: (c) 77.42%

Calculation:

The average sales of branches B2, B4 and B6 in the year 2001 = (65 + 95 + 80)/3 = 240/3

The average sales of branches B1, B3 and B5 in the year 2001 = (105 + 110 + 95)/3 = 310/3

Percentage = (240/3)/(310/3) × 100 = 77.42%

Therefore Option 3 is the correct answer.

Q55. Answer: (b) 119

Given:

$((17)^3 - (7)^3)/(17^2 + 7^2 + k) = 10$

Concept used:

a3 - b3 = (a - b)(a2 + b2 + ab)

Calculation:

$((17)^3 - (7)^3)/(17^2 + 7^2 + k) = 10$

$\Rightarrow (17-7)(17^2+7^2+7\times17)/(17^2+7^2+k) =10$

$\Rightarrow (17^2+7^2+119)/(17^2+7^2+k) =1$

$\Rightarrow 172 + 72 + 119 = 172 + 72 + k$

$\Rightarrow k = 119$

Therefore The value of k is 119.

Q56. Answer: (d) 4275

Given:

42 - 32 + 62 - 52 + 82 - 72 + ...922 - 912

Concept used:

1. Sum of N natural numbers = N(N + 1)/2

2. $A^2 - B^2 = (A + B)(A - B)$

Calculation:

42 - 32 + 62 - 52 + 82 - 72 + ...922 - 912

$\Rightarrow (4 + 3)(4 - 3) + (6 + 5)(6 - 5)+ .... + (92 + 91)(92 - 91)$

$\Rightarrow (4 + 3) \times 1 + (6 + 5) \times 1 + ... + (92 + 91) \times 1$

$\Rightarrow 4 + 3 + 6 + 5 + ... + 92 + 91$

$\Rightarrow 3 + 4 + 5 + 6 + ... + 91 + 92$

$\Rightarrow (1 + 2 + 3 + 4 + 5 + 6 + ... + 91 + 92) - (1 + 2)$

$\Rightarrow 92(92 + 1)/2 - 3$

$\Rightarrow 4275$

Therefore The required answer is 4275.

Q57. Answer: (a) Rs. 15120

Shortcut Trick

Ratio of P : (Q + R) = 4 : 7 (Total 11) and Q : (P + R) = 2 : 5 (Total 7).

To equate the total sum, multiply first ratio by 7 and second by 11 (LCM of 11, 7 is 77).

New ratios: P = 4 × 7 = 28 units, Q = 2 × 11 = 22 units.

R's share = Total − (P + Q) = 77 − (28 + 22) = 27 units.

Value of 27 units = (43120 ÷ 77) × 27 = 560 × 27 = 15120.

Therefore The correct answer is Rs. 15120.

Alternate Method

Given:

Total Amount = Rs. 43,120

P's share = 4/7 of (Q + R)

Q's share = 2/5 of (P + R)

Formula Used:

Individual Share = (Individual Ratio Part ÷ Total Ratio Parts) × Total Amount

Calculations:

=> P : (Q + R) = 4 : 7 => P : (P + Q + R) = 4 : 11

=> Q : (P + R) = 2 : 5 => Q : (P + Q + R) = 2 : 7

=> Total Ratio Parts = LCM of 11 and 7 = 77

=> P's units = (4 ÷ 11) × 77 = 28 units

=> Q's units = (2 ÷ 7) × 77 = 22 units

=> R's units = 77 − (28 + 22) = 27 units

=> 77 units = Rs. 43120

=> 1 unit = 43120 ÷ 77 = Rs. 560

=> Share of R = 27 × 560 = Rs. 15120

Therefore The correct answer is Rs. 15120.

Additional Information

Ratio Normalization

When comparing parts to a common total, the sum of the ratio terms for each subset must be scaled to the Least Common Multiple (LCM) of the individual sums.

Proportional Division

If a sum S is divided in the ratio a : b : c, then the shares are (a/k)S, (b/k)S, and (c/k)S, where k = a + b + c.

Base Change in Ratios

P/(Q+R) = 4/7 implies P/(P+Q+R) = 4/(4+7) = 4/11. This conversion allows for direct comparison with the total amount.

Q58. Answer: (b) 200 percent

Calculation:

Percentage of the number of girls in A is to the number of girls in F = 200/100 × 100 = 200%

Therefore Option 2 is the correct answer.

Q59. Answer: (a) 8 percent profit

Given

Marked price is 20% of the cost price

Discount given is 10%

Concept:

Marked Price/Cost Price = (100 + Profit%)/(100 - Discount %)

Solution:

Marked Price: Cost Price = 6 : 5

6 : 5 = (100 + Profit%)/(100 - 10)

6 : 5 = (100 + Profit%)/(100 - 10)

6/5 = (100 + Profit%)/90

108 = 100 + Profit%

Profit% = 108 - 100 = 8%

Therefore, the profit percentage is 8%.

Q60. Answer: (c) 12 cm

Shortcut Trick

The total volume remains constant during the melting process.

Volume of new cube = $6^3 + 8^3 + 10^3$

Volume = 216 + 512 + 1000 = 1728 cm^3

Side of new cube = $\sqrt[3]{1728}$ = 12 cm

Therefore The correct answer is 12 cm.

Alternate Method

Given: Sides of three metallic cubes are s1 = 6 cm, s2 = 8 cm, and s3 = 10 cm.

Formula Used: Volume of a cube = $(side)^3$

=> Volume of 1^(st) cube = 6^3 = 216 cm^3

=> Volume of 2^(nd) cube = 8^3 = 512 cm^3

=> Volume of 3^(rd) cube = 10^3 = 1000 cm^3

=> Total volume of melted metal = 216 + 512 + 1000 = 1728 cm^3

=> Let 'a' be the side of the new cube.

=> a^3 = 1728

=> a = $\sqrt[3]{1728}$

=> a = 12 cm

Therefore The correct answer is 12 cm.

Additional Information

Volume and Surface Area of a Cube

For a cube with side 'a', the Volume is a^3 and the Total Surface Area is $6a^2$.

Diagonal of a Cube

The length of the longest rod that can be placed inside a cube of side 'a' is given by the Diagonal formula: $d = a\sqrt{3}$.

Lateral Surface Area

The area of the four vertical faces of a cube (excluding top and bottom) is called the Lateral Surface Area, which is $4a^2$.

Q61. Answer: (b) 15

Given:

Average(Y,Z) - Average(X,Y) = 35,

Z = 85

Concept Used:

Average formula, X+Y = 2(Average of X,Y) and Y+Z = 2(Average of Y,Z)

Calculation:

Average(Y,Z) - Average(X,Y) = 35,

=> (Y + Z)/2 - (X + Y)/2 = 35

=> Y + Z - X - Y = 70

=> 85 - X = 70

=> X = 15

Therefore, the marks obtained by X are 15.

Q62. Answer: (b) 25 : 39

Given:

Profit percentages = 30%, 20%

Concept Used:

Profit = Selling Price - Cost Price

Calculation:

=> CP of Q = 130% of CP of P

=> CP of R = 120% of CP of Q

=> 120% of 130% of CP of P = 156% of CP of P

=> Ratio of CPs of P and R = CP of P/CP of R

=> 1/1.56 = 100/156 = 25 : 39

Hence, the ratio of the cost prices of P and R is 25 : 39.

Q63. Answer: (b) Rs. 14,400

Shortcut Trick

Simple Interest is directly proportional to the rate of interest when Principal and Time are constant.

Original Simple Interest = Rs. 13,200 − Rs. 12,000 = Rs. 1,200

If the rate of interest is doubled, the Simple Interest will also be doubled.

New Simple Interest = 2 × 1,200 = Rs. 2,400

New Amount = Principal + New Interest = 12,000 + 2,400 = Rs. 14,400

Therefore The correct answer is Rs. 14,400.

Alternate Method

Given:

Principal (P) = Rs. 12,000

Amount in 2 years (A) = Rs. 13,200

Time (T) = 2 years

Formula Used:

Simple Interest (I) = A − P

I = (P × R × T) ÷ 100

Calculation:

=> Original Interest = 13,200 − 12,000 = Rs. 1,200

=> 1,200 = (12,000 × R × 2) ÷ 100

=> 1,200 = 240 × R

=> R = 1,200 ÷ 240 = 5%

=> New Rate = 2 × 5% = 10%

=> New Interest = (12,000 × 10 × 2) ÷ 100 = Rs. 2,400

=> New Amount = 12,000 + 2,400 = Rs. 14,400

Therefore The correct answer is Rs. 14,400.

Additional Information

Proportionality in Simple Interest

Simple interest is directly proportional to Principal (P), Rate (R), and Time (T). If any one of these is multiplied by a factor while the others remain constant, the Simple Interest is simply multiplied by the same factor.

Simple Interest vs Compound Interest

In Simple Interest, the interest is calculated only on the original principal every year, meaning it remains constant per period. In Compound Interest, interest is calculated on both the original principal and the accumulated interest from previous periods.

Simple Interest Formula

The formula to calculate simple interest is I = (P × R × T) ÷ 100. The total amount at the end of the time period is the sum of the principal and the interest earned: A = P + I.

Q64. Answer: (d) (cos θ)/(1 + sin θ)

Shortcut Trick

Let θ = 45°

Expression = (tan 45° − sec 45° + 1) / (tan 45° + sec 45° − 1) = (1 − √2 + 1) / (1 + √2 − 1)

=> Expression = (2 − √2) / √2 = √2 − 1

Check Option 4: cos 45° / (1 + sin 45°) = (1/√2) / (1 + 1/√2) = 1 / (√2 + 1) = √2 − 1

Therefore The correct answer is cos θ / (1 + sin θ).

Alternate Method

Given:

Expression = (tan θ − sec θ + 1) / (tan θ + sec θ − 1)

Formula Used:

$\sec^2 \theta - \tan^2 \theta = 1$

Calculations:

=> Replace 1 in the numerator with $(\sec^2 \theta - \tan^2 \theta)$

=> Numerator = tan θ − sec θ + $(\sec^2 \theta - \tan^2 \theta)$

=> Numerator = −(sec θ − tan θ) + (sec θ − tan θ)(sec θ + tan θ)

=> Numerator = (sec θ − tan θ)(sec θ + tan θ − 1)

=> Expression = [(sec θ − tan θ)(sec θ + tan θ − 1)] / (tan θ + sec θ − 1)

=> Expression = sec θ − tan θ = (1 / cos θ) − (sin θ / cos θ)

=> Expression = (1 − sin θ) / cos θ

=> Multiply numerator and denominator by (1 + sin θ)

=> Expression = [(1 − sin θ)(1 + sin θ)] / [cos θ(1 + sin θ)]

=> Expression = $(1 - \sin^2 \theta) / [\cos \theta(1 + \sin \theta)] = \cos^2 \theta / [\cos \theta(1 + \sin \theta)]$

=> Expression = cos θ / (1 + sin θ)

Therefore The correct answer is cos θ / (1 + sin θ).

Additional Information

Trigonometric Identities

The Pythagorean identities are $\sin^2\theta + \cos^2\theta = 1$, $\sec^2\theta - \tan^2\theta = 1$, and $\text{cosec}^2\theta - \cot^2\theta = 1$.

Value Substitution Method

When simplifying trigonometric expressions, substituting standard angles (like 30°, 45°, or 60°) can quickly verify the correct option. Always ensure the substituted angle doesn't make any denominator zero.

Conjugate Properties

Multiplying and dividing by the conjugate (e.g., 1 + sin θ) helps rationalize terms, allowing seamless conversions like (1 − sin θ) / cos θ → cos θ / (1 + sin θ).

Q65. Answer: (d) 197/600

Calculation:

A = (18 ÷ 9 × 4)/(15 ÷ 3 × 5)

=> (2 × 4)/(5 × 5) = 8/25

B = (18 ÷ 36 × 3 + 5 ×1 - 6)/(18 ÷ 6 × 20 - 3 × 4 + 12)

=> (1/2 × 3 + 5-6)/(60 - 12 +12) = ((3 + 10 - 12)/2)/60 = 1/120

A + B = 8/25 + 1/120 = (192 + 5)/600 = 197/600

Therefore Option 4 is the correct answer.

Q66. Answer: (c) 10 percent

Shortcut Trick

If the percentage increase in Income and Expenditure is exactly the same, the percentage increase in Savings will also be the same value.

Given: Income increase = 10% and Expenditure increase = 10%.

By property: % change in Savings = % change in Income = % change in Expenditure.

Therefore Percentage increase in savings = 10%.

Therefore The correct answer is 10 percent.

Alternate Method

Given:

Initial expenditure = 50% of Income

Increase in Income = 10%

Increase in Expenditure = 10%

Formula Used:

Income = Expenditure + Savings

Percentage Increase = [(New Value − Old Value) ÷ Old Value] × 100

Let initial Income = 100

=> Initial Expenditure = 50% of 100 = 50

=> Initial Savings = 100 − 50 = 50

=> New Income = 100 + 10% of 100 = 110

=> New Expenditure = 50 + 10% of 50 = 50 + 5 = 55

=> New Savings = 110 − 55 = 55

=> Increase in Savings = 55 − 50 = 5

=> Percentage Increase in Savings = (5 ÷ 50) × 100

=> Percentage Increase in Savings = 10%

Therefore The correct answer is 10 percent.

Additional Information

Income, Expenditure and Savings Relationship

The basic relationship is Income = Expenditure + Savings. Any change in one component affects the others if total income is not constant.

Percentage Change Formula

Percentage change is calculated as: [(Change in value) ÷ (Original value)] × 100.

Effect of Uniform Percentage Change

If every component of a linear sum (like A = B + C) increases by the same percentage k%, then the total sum A also increases by exactly k%.

YourMockTest.com — Free Study Material

Q67. Answer: (a) 16 cm

Shortcut Trick

When two identical circles pass through each other's centers, the length of the common chord is given by r√3.

Given: Common chord = 16√3 cm

=> r√3 = 16√3

=> r = 16 cm

Therefore The correct answer is 16 cm.

Alternate Method

Given:

=> Two circles are identical, so Radius r1 = r2 = R.

=> Each passes through the center of the other, so distance between centers (d) = R.

=> Length of common chord (L) = 16√3 cm.

Property: When two identical circles of radius R pass through each other's centers, the line of centers (O1O2) and the common chord (AC) bisect each other at right angles.

=> Let M be the midpoint of O1O2.

=> O1M = R / 2

=> In right-angled triangle ΔO1MA, by Pythagoras Theorem:

=> $AM^2 = O1A^2 - O1M^2$

=> $AM^2 = R^2 - (R / 2)^2$

=> $AM^2 = R^2 - R^2 / 4 = 3R^2 / 4$

=> AM = (R√3) / 2

=> Length of common chord (AC) = 2 × AM = R√3

=> Given AC = 16√3 cm

=> R√3 = 16√3

=> R = 16 cm

Therefore The correct answer is 16 cm.

Additional Information

Common Chord of Two Intersecting Circles

Length = $2 \times \sqrt{(R^2 - d1^2)}$, where d1 is the distance from the center to the chord.

Distance between centers

For identical circles passing through centers, the distance d = R. If they touch externally, d = 2R. If they touch internally, d = 0.

Area of Intersection

The overlapping area of two identical circles passing through each other's centers is given by $R^2(2\pi/3 - \sqrt{3}/2)$.

Q68. Answer: (d) Rs. 500

Shortcut Trick

Wage ratio = Inverse ratio of days taken = 1/10 : 1/20 : 1/30 = 6 : 3 : 2

Total ratio parts = 6 + 3 + 2 = 11 parts → Rs. 1100

1 part → Rs. 100

Required difference = (A + C) − B = (6 + 2) − 3 = 5 parts

Difference = 5 × 100 = Rs. 500

Therefore The correct answer is Rs. 500.

Alternate Method

Given:

Time taken by A alone = 10 days

Time taken by B alone = 20 days

Time taken by C alone = 30 days

Total earnings = Rs. 1100

Person	Days	Total Work	Efficiency
A	10	60	6
B	20	3	

C	30	2	

Calculations:

=> Ratio of efficiencies A : B : C = 6 : 3 : 2

=> Total efficiency parts = 6 + 3 + 2 = 11 parts

=> Earnings of A = (6 ÷ 11) × 1100 = Rs. 600

=> Earnings of B = (3 ÷ 11) × 1100 = Rs. 300

=> Earnings of C = (2 ÷ 11) × 1100 = Rs. 200

=> Total earnings of A and C = 600 + 200 = Rs. 800

=> Required difference = Total earnings of (A + C) − Earnings of B

=> Required difference = 800 − 300 = Rs. 500

Therefore The correct answer is Rs. 500.

Additional Information

Work and Wages

Wages are always distributed in proportion to the total work done by each individual. If individuals work together for the same number of days, their wages are divided exactly in the ratio of their one-day work (efficiencies).

Efficiency and Time Relation

Efficiency is inversely proportional to the time taken to complete the work. For instance, if the ratio of time taken by two people is A : B, their efficiency ratio is B : A.

Total Work Assumption

A highly effective way to determine total work is by calculating the Least Common Multiple (LCM) of the distinct days taken by all individuals to finish the task alone.

Q69. Answer: (c) 100

Calculation:

Number of girls in school G, H and I together = 700 + 1300 + 800 = 2800

Number of girls in school J, K, L and M together = 1100 + 900 + 500 + 400 = 2900

Difference = 2900 - 2800 = 100

Therefore Option 3 is the correct answer.

Q70. Answer: (d) -1/√3

Given:

(cot60° - cot30°)/(1 + cot60°.cot30°)

Calculation:

(cot60° - cot30°)/(1 + cot60°.cot30°)

(1/(√3) - √3)/(1 + 1/(√3)× √3)

(-2)/(√3)/2

(-1)/(√3)

Therefore Option 4 is the correct answer.

Q71. Answer: (d) 61.2 degree

Calculation:

Percentage of total number of girls in sector F = 17%

The value of central angle formed by sector F = 360/100 × 17 = 61.2°

Therefore Option 4 is the correct answer.

Q72. Answer: (a) 16 cm

Given:

Radius = 8 cm

Concept Used:

When a chord subtended 90° angle on the cirsumference, then this chord is the diameter of the circle.

Diameter = 2 × radius

Calculation:

Radius = 8 cm

Diameter = 2 × radius = 2 × 8 = 16 cm

Therefore Option 1 is the correct answer.

Q73. Answer: (d) 90 degree

Given:

In ΔSTU, SE, and TF are medians that intersect each other at O.

UT = 34 cm, TF = 22.5 cm and SE = 24 cm

Concept used:

1. The medians of a triangle divide each other in a 2:1 ratio.

2. Pythagoras Theorem: Base2 + Perpendicular2 = Hypotenuse2

3. Pythagoras Theorem is only applicable to right-angled triangles.

Calculation:

According to the question,

Since SE is median, TE = EU = 34/2 = 17 cm

According to the concept,

TO : OF = SO : OE = 2 : 1

Hence,

TO = 22.5 × 2/(2 + 1) = 15 cm

OE = 24 × 1/(2 + 1) = 8 cm

In ΔTOE, TO = 15 cm, OE = 8 cm, and TE = 17 cm.

As we can see, $TO^2 + OE^2 = TE^2$

So, ΔTOE is a right-angled triangle at O.

Now, the measure of angle TOE = 90°

Therefore The value of angle TOE is 90°.

Q74. Answer: (c) $(125)^{1}/6$

Shortcut Trick

LCM of denominators of powers (6, 3, 6, 4) is 12.

Raise all values to the 12th power:

((125)1/6)12 = 1252 = 15625

((11)1/3)12 = 114 = 14641

((12)1/6)12 = 122 = 144; ((5)1/4)12 = 53 = 125

Comparing results: 15625 > 14641 > 144 > 125.

Therefore The correct answer is (125)1/6.

Alternate Method

Given: (125)1/6, (11)1/3, (12)1/6, (5)1/4

Formula: To compare a1/n and b1/m, convert them to a common index by finding the LCM of denominators.

=> Convert all powers to a common denominator 12:

=> (125)1/6 = (125)2/12 = (1252)1/12 = (15625)1/12

=> (11)1/3 = (11)4/12 = (114)1/12 = (14641)1/12

=> (12)1/6 = (12)2/12 = (122)1/12 = (144)1/12

=> (5)1/4 = (5)3/12 = (53)1/12 = (125)1/12

=> Since 15625 > 14641 > 144 > 125, the largest value is (15625)1/12.

Therefore The correct answer is (125)1/6.

Additional Information

Comparing Surds of Different Indices

To compare numbers like n√a and m√b, find the LCM of n and m. Raise both numbers to the power of the LCM to eliminate the radical signs.

Laws of Indices

Important properties include (am)n = am×n and a1/n = n√a. These are essential for simplifying expressions before comparison.

Ascending and Descending Order

Once terms are converted to the same index (e.g., x1/12), they can be sorted based on the magnitude of the base x.

YourMockTest.com — Free Study Material

Q75. Answer: (b) 194

Given:

a + 1/a = 4

Formula used:

If a + 1/a = k, then

$a^2 + 1/a^2 = k^2 - 2$

a4 + 1/a4 = $(k2 - 2)^2 - 2$

Calculation:

=> a4 + 1/a4 = (42 - 2)2 - 2

=> a4 + 1/a4 = (16 - 2)2 - 2

=> a4 + 1/a4 = (14)2 - 2 = 194

Hence, the value of a^4 + 1/a^4 is 194.

Q76. Answer: (c) I was recently at a literary festival.

The correct answer is 'Option 3' i.e. 'I was recently at a literary festival.'

Key Points

• In option 3, all words are spelled correctly. Let's analyze the spelling errors in the other options:

• 'Rently' is not a word in English. The correct word is 'recently'.

• 'Litrary' is incorrect. The correct spelling is 'literary'.

• 'Literery' and 'fstival' are incorrect. The correct spellings are 'literary' and 'festival', respectively.

Therefore, the sentence with no spelling error is: 'I was recently at a literary festival.'

Q77. Answer: (b) No improvement

The correct answer is 'Option 2' i.e. 'No improvement'.

Key Points

• Explanation:

• The original sentence is correct as it stands.

• "There has been a noticeable fall" is grammatically correct.

• In this context, 'fall' is a noun meaning 'decrease' or 'drop', and 'noticeable' is an adjective meaning 'easily seen or noticed; clear or apparent.'

• Together, they accurately describe the situation: a decrease that is easy to notice.

Therefore, the correct sentence is: 'There has been a noticeable fall in the number of children dying from malnutrition.'

Q78. Answer: (b) SRPQ

The correct answer is 'Option 2' i.e. 'SRPQ'.

Key Points

• When we rearrange the parts according to option SRPQ, we get a coherent and logical sentence:

• "S. The residents of Noida can now get their pets like dogs or cats

• R. registered with the local authority through a mobile phone

• P. application, which can also be used to log complaints about

• Q. littering or caused by the animals, according to officials."

• The sentence starts by stating what residents can do (get pets registered) and then explains how they can do it (through a mobile application) and what else the application can be used for (log complaints about littering caused by the animals).

• The phrase 'according to officials' at the end refers to the source of this information.

• This makes a logical, clear, and grammatically correct sentence.

Therefore, the correct order of sentence is: 'SRPQ'.

Q79. Answer: (d) Near 800 million

The correct answer is 'Option 4' i.e. 'Near 800 million'.

Key Points

• The error in the sentence lies in the usage of the term "Near" for expressing quantities.

• "Near" is used to express proximity in terms of location but not in terms of quantity.

• The correct term to use for expressing quantities is "Nearly".

YourMockTest.com — Free Study Material

• "Nearly" is used to indicate that something is almost but not completely done or the case.
• In this context, it means almost or approximately 800 million people.
• The sentence talks about a significant number of people worldwide who lack access to updated sanitation.
Therefore, the correct sentence should be: "Nearly 800 million people worldwide lack updated sanitation."

Q80. Answer: (d) affected severely

The correct answer is 'Option 4' i.e. 'affected severely'.
Key Points
• The sentence aims to convey that the cultivation of rice will be significantly impacted.
• The adverb 'severely' is used to express the intensity of the effect, and it modifies the verb 'affected', which describes the action.
• 'Severely' means to a great degree; intensely or harshly.
• Therefore, the correct sentence is: "Scientists have predicted that the cultivation of rice will be affected severely."

Q81. Answer: (d) During workout the aerobic ball was used by her.

The correct answer is 'Option 4'
Key Points
• In the process of transforming sentences from active to passive voice, the object of the active sentence becomes the subject of the passive sentence.
• Similarly, the subject of the active sentence becomes the object in the passive sentence.
• The verb form also changes according to the tense.
• The active sentence *'She used the aerobic ball during workout.' i*s in the past simple tense.
• Hence, in its passive form, the verb 'used' changes to 'was used'.
Therefore, the correct answer is: 'During workout the aerobic ball was used by her.'

Q82. Answer: (c) Posthumous

The solution is in Hindi. Read it online.

Q83. Answer: (c) "She would have been a great sister if she were just a bit more careful"

The correct answer is 'Option 3'.
Key Points
• This is because, in English grammar, when referring to hypothetical situations or conditions that are contrary to fact, we often use "were" instead of "was" after "if" even when the subject is singular.
• This is a usage pattern known as the subjunctive mood.
• So, "if she were just a bit more careful" is more grammatically correct than "if she was just a bit more careful".
• Also, we use 'that' to introduce reported speech when the words are not the speaker's exact words (i.e., when the speaker is paraphrasing, summarizing, or interpreting the original speaker's words). So, 'Dad said that' is appropriate here.
Therefore, the correct sentence is: "Dad said that, 'She would have been a great sister if she were just a bit more careful'".

Q84. Answer: (a) Sensation

The correct answer is 'Option 1' i.e. 'Sensation'.
Key Points
• The word 'Fad' means an intense and widely shared enthusiasm for something, especially one that is short-lived and without basis in the object's qualities
• 'Sensation' is a term that can be used to describe a similar phenomenon, something that causes great excitement and interest, often for a brief period of time.
• It captures the same sense of a widespread and often temporary interest in something.
• So, 'Sensation' is synonymous with 'Fad' in this context.
Therefore, the correct answer is: 'Sensation'.
Additional Information
• 'Standard' generally refers to something that serves as a basis for comparison.
• 'Classic' is typically used to describe something that is judged over a period of time to be of the highest quality and outstanding of its kind
• 'Deviant' describes something that departs from usual or accepted standards, especially in social or sexual behavior.

YourMockTest.com — Free Study Material

Q85. Answer: (a) isolate

The solution is in Hindi. Read it online.

Q86. Answer: (a) Outspoken

The solution is in Hindi. Read it online.

Q87. Answer: (d) Iridescent

The solution is in Hindi. Read it online.

Q88. Answer: (b) doesn't watch them

The correct answer is 'Option 2' i.e. 'doesn't watch them'.

Key Points

• In the sentence, the correct tense to use is the simple present tense because the sentence talks about a general, habitual action.

• In English, we use the base form of the verb with auxiliary verb 'does not' or 'doesn't' for negative sentences in the simple present tense.

• Therefore, 'watch' should be used instead of 'watched'.

Therefore, the correct sentence should be: "Mary doesn't like cartoons because they are loud, so she doesn't watch them."

Q89. Answer: (b) To take foolish risk

The solution is in Hindi. Read it online.

Q90. Answer: (a) Flufy

The solution is in Hindi. Read it online.

Q91. Answer: (b) to meet you.

The correct answer is 'Option 2' i.e. 'to meet you.'.

Key Points

• The error in the sentence is related to the use of the infinitive 'to meet'.

• When the phrase 'look forward to' is used, it should be followed by a gerund (-ing form of a verb) and not an infinitive.

Therefore, the correct form of the sentence is: "That was a good conversation, I look forward to meeting you."

Q92. Answer: (b) Nandini said that she had bought a pen the previous day.

The correct answer is 'Option 2'.

Key Points

• The sentence is in direct speech and it needs to be changed to indirect speech.

• When converting direct to indirect speech, present tense verbs are often changed to past tense, and words referring to near time ('yesterday' in this case) need to be changed to refer to a more distant time ('the previous day').

• The verb "bought" is in the past simple, so it changes to past perfect ("had bought") in reported speech.

• The phrase "I bought a pen yesterday" thus changes to "she had bought a pen the previous day".

Therefore, the correct indirect form of the given sentence is "Nandini said that she had bought a pen the previous day."

Q93. Answer: (a) A person who offers unsolicited advice.

The solution is in Hindi. Read it online.

Q94. Answer: (b) Restorative

The solution is in Hindi. Read it online.

Q95. Answer: (d) PQRS

The correct answer is 'Option 4' i.e. 'PQRS'.

Key Points

• PQRS: This is the correct order because it maintains the logical flow of the sentence.

• It starts with the subject of the research - "medium-skilled employees who work" (P), goes on to further describe their working conditions - "in front of a computer and work beyond" (Q), and finally presents the conclusion of the research - "4.6 effective hours a day produce smaller" (R) "quantities of output per hour due to fatigue" (S).

• The sequence PQRS maintains the coherence and completeness of the idea being expressed.

Therefore, the correct order of sentence is: 'PQRS'.

YourMockTest.com – Free Study Material

Q96. Answer: (d) solution

The correct answer is 'Option 4' i.e. 'solution'.

Key Points

• In this context, we're discussing the process of forming rock candy, which involves the growth of sugar crystals from a sugar-water mixture.

• This mixture is most accurately referred to as a 'solution', a term commonly used in chemistry to describe a homogeneous mixture composed of two or more substances.

• Here, the sugar and water form a solution, where sugar is the solute (the substance that is dissolved) and water is the solvent (the substance that does the dissolving).

Therefore, the correct sentence is: 'Rock candy is actually a collection of large sugar crystals that are "grown" from a sugar-water solution. Crystals form when the smallest particles of a substance, the molecules, arrange themselves in a/an (2) ____ and repetitive pattern. Molecules are too small for us to see moving around and (3) __ themselves, but you can get a rough idea of what this would look like by taking a small shallow tray and filling it with marbles, ball bearings, or other spheres. As you (4) __ more spheres, the bottom of the tray becomes covered, then the spheres must form layers on top of (5) ____, and a structure or pattern emerges.'

Additional Information

• The other options don't fit the context appropriately:

• 'Convergence' generally means the process of coming together or meeting at a point.

• 'Ramification' refers to a consequence or implication, especially one that makes a situation more complicated.

• 'Disposition' usually refers to a person's inherent qualities of mind and character, or an inclination or tendency.

Q97. Answer: (a) orderly

The correct answer is 'Option 1' i.e. 'orderly'.

Key Points

• In the given context, the process described is the arrangement of molecules into a repetitive pattern to form crystals.

• This arrangement isn't haphazard or random; it follows a specific order.

• Therefore, the term 'orderly' is the most appropriate word to fill in the blank.

• 'Orderly' means arranged or disposed in some order or pattern, which is exactly what is happening in the formation of these crystals.

Therefore, the correct sentence is: 'Rock candy is actually a collection of large sugar crystals that are "grown" from a sugar-water solution. Crystals form when the smallest particles of a substance, the molecules, arrange themselves in a/an orderly and repetitive pattern. Molecules are too small for us to see moving around and (3) ____ themselves, but you can get a rough idea of what this would look like by taking a small shallow tray and filling it with marbles, ball bearings, or other spheres. As you (4) __ more spheres, the bottom of the tray becomes covered, then the spheres must form layers on top of (5) ____, and a structure or pattern emerges.'

Additional Information

• The other options are not suitable for the following reasons:

• 'Vastly' is an adverb that means to a very great extent; it doesn't describe the manner of arrangement.

• 'Wholly' means entirely or fully, but doesn't provide the necessary context for the arrangement of molecules.

• 'Adeptly' means in a very skilled or proficient way. While molecules do arrange themselves in a precise way, this term is typically used to describe the actions of a person, not a natural physical process.

Q98. Answer: (c) arranging

The correct answer is 'Option 3' i.e. 'arranging'.

Key Points

• In the given context, the process described involves the molecules of a substance arranging themselves into an orderly and repetitive pattern.

• This is what happens when sugar crystals form.

• The molecules of sugar arrange themselves in a specific pattern.

• Therefore, the term 'arranging' is the most appropriate word to fill in the blank.

Therefore, the correct sentence is: 'Rock candy is actually a collection of large sugar crystals that are "grown" from a sugar-water solution. Crystals form when the smallest particles of a substance, the molecules, arrange themselves in a/an orderly and repetitive pattern. Molecules are too small for us to see moving around and arranging themselves, but you can get a rough idea of what this would look like by taking a small shallow tray and filling it with marbles, ball bearings, or other spheres. As you (4) ____ more spheres, the bottom of the tray becomes covered, then the spheres must form layers on top of (5) ____, and a structure or pattern emerges.'

Additional Information

• Let's discuss why the other options aren't suitable:

• 'Summarizing': This term is generally used in the context of condensing information or presenting a brief statement of the main points. It doesn't fit the context of molecular arrangement.

• 'Shielding': This term means to protect something by interposing material that prevents the loss or transfer of energy or particles. It does not fit in the given context which is about molecules arranging themselves to form crystals.

• 'Dividing': This term is typically used to mean separate or be separated into parts. It is not applicable here as the molecules aren't being separated; rather, they're organizing themselves into a specific pattern.

Q99. Answer: (a) add

The correct answer is 'Option 1' i.e. 'add'.

Key Points

• In the given context, the action being discussed involves putting more spheres into a tray.

• The verb that most appropriately describes this action is 'add'.

Therefore, the correct sentence is: 'Rock candy is actually a collection of large sugar crystals that are "grown" from a sugar-water solution. Crystals form when the smallest particles of a substance, the molecules, arrange themselves in a/an orderly and repetitive pattern. Molecules are too small for us to see moving around and arranging themselves, but you can get a rough idea of what this would look like by taking a small shallow tray and filling it with marbles, ball bearings, or other spheres. As you add more spheres, the bottom of the tray becomes covered, then the spheres must form layers on top of (5) _____, and a structure or pattern emerges.'

Additional Information

• The other options are not suitable for the following reasons:

• 'Curse': This word generally refers to expressing a wish of harm or misfortune on someone or something. It does not fit into the context of the sentence which is discussing a physical action involving spheres.

• 'Please': This word is typically used to ask for something in a polite way or to express satisfaction or approval. It does not make sense in the context of the sentence.

• 'Toil': This word is usually used to mean work extremely hard or incessantly. While making rock candy might require effort, the specific action being discussed in this part of the sentence is simply adding more spheres to a tray, so 'toil' is not the correct choice.

Q100. Answer: (c) one another

The correct answer is 'Option 3' i.e. 'one another'.

Key Points

• In this context, the spheres are forming layers on top of other spheres, meaning they are interacting with each other.

• 'One another' is used when each member of a group is doing something to the others, which fits the context here.

Therefore, the correct sentence is: 'Rock candy is actually a collection of large sugar crystals that are "grown" from a sugar-water solution. Crystals form when the smallest particles of a substance, the molecules, arrange themselves in a/an orderly and repetitive pattern. Molecules are too small for us to see moving around and arranging themselves, but you can get a rough idea of what this would look like by taking a small shallow tray and filling it with marbles, ball bearings, or other spheres. As you add more spheres, the bottom of the tray becomes covered, then the spheres must form layers on top of one another, and a structure or pattern emerges.'

Additional Information

• Let's consider the other options:

• 'Others': This choice could technically work, but it is less precise than 'one another' because it does not necessarily imply that every sphere is interacting with all the others.

• 'One': This option is incorrect because it would mean that all the spheres are forming layers on top of a single sphere, which doesn't make sense in this context.

• 'Every other': This option is also incorrect because it implies that only every second sphere is involved in the layering, which does not fit the context.

More previous year papers and mock tests: **www.yourmocktest.com/pyq**