SSC CHSL Tier-1 2022: Official Paper (Held On: 17 March, 2023 Shift 1) (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-17-march-2023-shift…

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

YourMockTest.com — Free Study Material

ENGLISH LANGUAGE

Q1. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statement I: Some fish are frogs.

Statement II: Some frogs are whales.

Conclusion I: Some fish are whales.

Conclusion II: No fish is a whale.

(a) Only I follows
(b) Only II follows
(c) Either I or II follows
(d) Neither I nor II follows

Q2. Marks obtained by the seven students of a tuition class, Panchi, Qazi, Ricky, Sweta, Tiya, Urusha and Vinay, are mentioned. Panchi scored second highest marks in the class. Marks scored by Vinay was higher than only one of the person. Sweta's score was more than Tiya but less than Panchi. Three person got higher than Tiya and three got lesser than Tiya. Neither Ricky nor Qazi received the lowest marks. Given that no two students have the same marks, whose marks was the lowest?

(a) Ricky
(b) Urusha
(c) Vinay
(d) Tiya

Q3. Select the option that is related to the fifth letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster and the fourth letter-cluster is related to the third letter-cluster.

PAG : NYE :: TUB : RSZ :: RICE : ?

(a) PGAC
(b) SJDF
(c) RJDE
(d) QHBD

Q4. After interchanging the given two signs what will be the values of expression (I) and (II) respectively?

× and +

I. 5 × 12 - 15 + 20 ÷ 25

II. 36 + 3 × 2 - 15 ÷ 5

(a) 17 and 35
(b) 50 and 55
(c) 5 and 107
(d) 10 and 100

Q5. 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)

(11, 121, 1331)

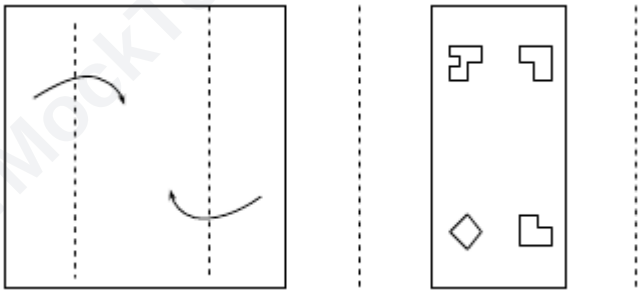
(13, 169, 2197)

(a) (9, 729, 81)
(b) (6, 36, 324)
(c) (5, 25, 625)
(d) (7, 49, 343)

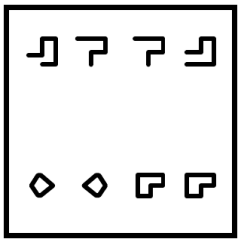
Q6. If in a coding system 28373 is coded as 4166146, then how will 19351 be coded in the same coding system?

(a) 2186210
(b) 2186102
(c) 2813620
(d) 2180619

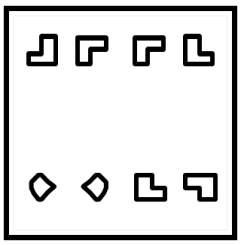
Q7. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened?



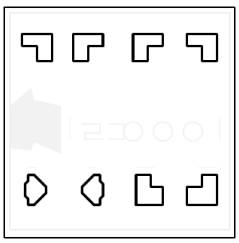
(a)



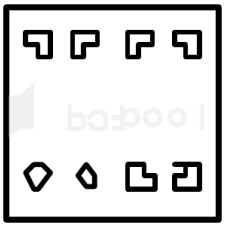
(b)



(c)



(d)



Q8. 'Nymph' is related to 'Cockroach' in the same way as 'Tadpole' is related to '_____'.

(a) Insect
(b) Cow
(c) Bird
(d) Frog

Q9. 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)

(169, 1681, 529)

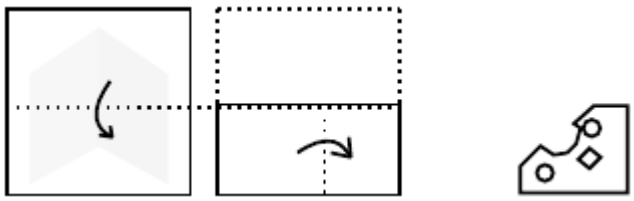
(144, 576, 1024)

(a) (196, 289, 224)
(b) (144, 121, 999)
(c) (624, 785, 256)
(d) (625, 784, 256)

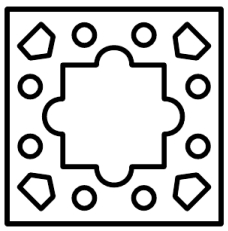
Q10. Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the odd letter-cluster.

(a) QSU
(b) UWY
(c) CEG
(d) HJI

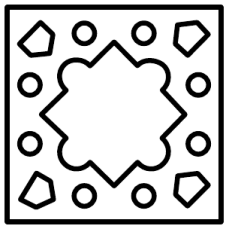
Q11. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened?



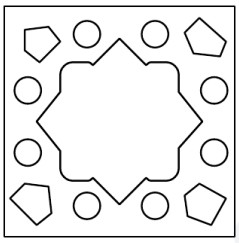
(a)



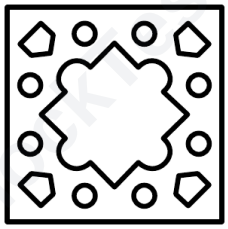
(b)



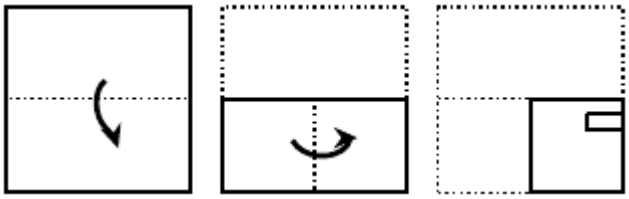
(c)



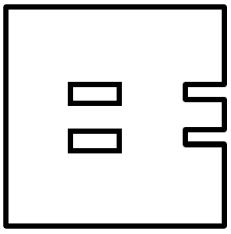
(d)



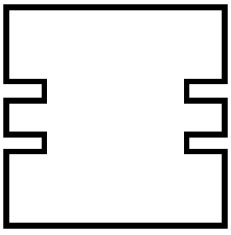
Q12. The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded?



(a)

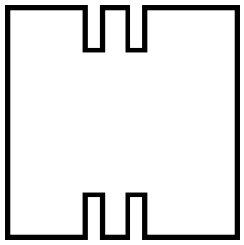


(b)

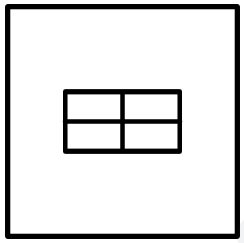


YourMockTest.com — Free Study Material

(c)



(d)

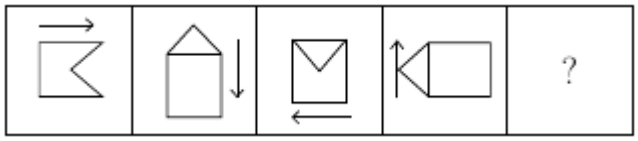


Q13. Words given on the left side of (::) are related with each other by some Logic/Rule /Relation. Select the missing word/word pair on the right side of (::) from the given alternatives based on the same Logic/Rule/Relation.

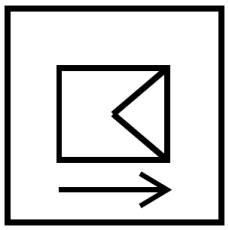
Ostrich : Bird :: Chair : ?

(a) Stool
(b) Table
(c) Wood
(d) Furniture

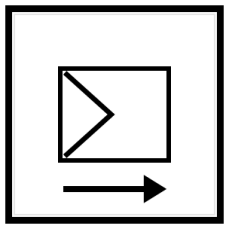
Q14. Select the figure that will come next in the following figure series.



(a)

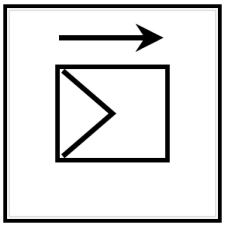


(b)

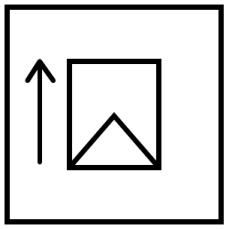


YourMockTest.com — Free Study Material

(c)



(d)



Q15. 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)

(25, 49, 81)

(169, 225, 289)

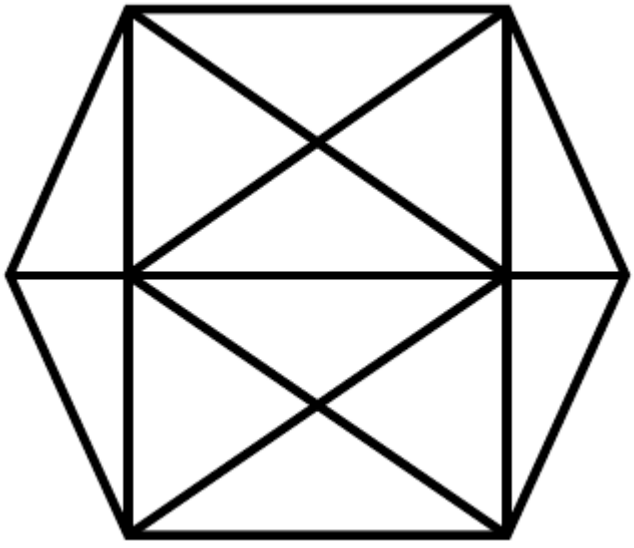
(a) (441, 529, 676)

(b) (100, 144, 256)

(c) (289, 361, 441)

(d) (121, 169, 289)

Q16. How many maximum triangles are there in the given figure?



(a) 32

(b) 20

(c) 28

(d) 24

YourMockTest.com — Free Study Material

Q17. Select the option that is related to the fifth number in the same way as the second number is related to the first number and the fourth number is related to the third number.

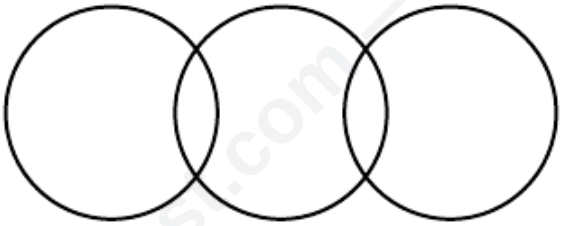
12 : 100 : : 10 : 64 : : 14 : ?

(a) 140
(b) 144
(c) 124
(d) 134

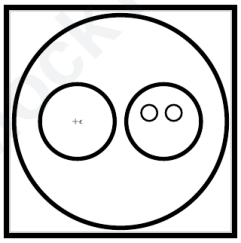
Q18. Select the Venn diagram that best represents the relationship between the following classes.

Fathers, Teacher, Males

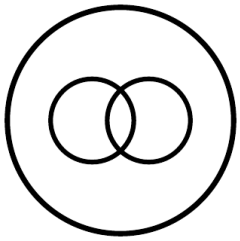
(a)



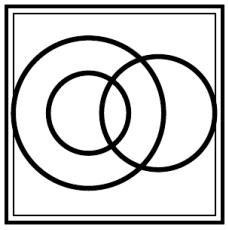
(b)



(c)



(d)



Q19. A cube is painted on all surfaces with orange color and is divided into 27 equal cubes. How many cubes will have only one face painted?

(a) 6
(b) 4
(c) 9
(d) 5

Q20. Select the correct option that indicates the arrangement of the given words in a logical and meaningful order.

1. Hectometer
2. Millimeter
3. Decimeter

YourMockTest.com — Free Study Material

4. Decameter

5. Kilometer

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

Q21. Three of the four group of words are alike in some manner. Select the odd group of words.

(a) (Igloo, Nun, Sty)
(b) (Web, Cottage, Palace)
(c) (Stable, Monastery, Hive)
(d) (Den, Byre, Barn)

Q22. Which of the following numbers will replace the question mark (?) in the given series?

2, 4, 12, 48, ?

(a) 72
(b) 140
(c) 240
(d) 120

Q23. Select the combination of letters that when sequentially placed in the blanks of the given letter series will complete the series.

ccd_cc_d_ppccccddd_ _p

(a) ppdcp
(b) pcdpp
(c) pcdpc
(d) pccdp

Q24. Pointing to a photograph of a man Riya said, "He is the father of the only son of my mother." How is Riya related to that man?

(a) Niece
(b) Mother
(c) Father
(d) Daughter

Q25. In a certain code language if HAMLET is written as MAHTEL, how will BURGER be written in the same code language?

(a) RUBERG
(b) RUBREG
(c) RUBGGR
(d) RUBGER

GENERAL INTELLIGENCE

Q26. Who won the Best Actress in Leading Role award in the 75th BAFTA Award ceremony?

(a) Jennifer Lawrence
(b) Kate Winslet
(c) Joanna Scanlan
(d) Gigi Hadid

Q27. Considering the five-year plans of India, which of the following is correct matched?

I. Rolling Plan – Introduced before Sixth Five-Year Plan

II. Mahalanobis Plan – Second Five-Year Plan

(a) Only I

YourMockTest.com — Free Study Material

(b) Both I and II
(c) Only II
(d) Neither I nor II

Q28. Which among the following teams won the SAFF (South Asian Football Federation) Championship Women 2022?
(a) Nepal
(b) Pakistan
(c) India
(d) Bangladesh

Q29. Hawa Mahal is situated in which city?
(a) Jaipur
(b) Jodhpur
(c) Udaipur
(d) Alwar

Q30. Who among the following is the Union Minister for Tribal Affairs as on October 2022?
(a) Arjun Munda
(b) Virendra Kumar
(c) Piyush Goyal
(d) Pralhad Joshi

Q31. Who wrote the "Harshacharita", a biography of Harshavardhana?
(a) Banabhatta
(b) Harisena
(c) Ravikirti
(d) Xuan Zang

Q32. What is an output device that transforms the signal from the computer's sound card into audio?
(a) Speaker
(b) Plotter
(c) Graphics card
(d) Monitor

Q33. Which of the following pairs of "term – sports" is correct?
I. Offside - Football
II. Par - Golf
(a) Only II
(b) Both I and II
(c) Neither I nor II
(d) Only I

Q34. Which article of the Indian constitution specifies equality before the law?
(a) Article 19
(b) Article 23
(c) Article 14
(d) Article 36

Q35. Which Union Ministry implements the “Saksham Anganwadi and Poshan 2.0” scheme?
(a) Ministry of Consumer Affairs, Food & Public Distribution
(b) Ministry of Health and Family welfare
(c) Ministry of Women and Child Development
(d) Ministry of Agriculture & Farmers Welfare

YourMockTest.com — Free Study Material

Q36. Plant cells differ from animal cells in having an additional layer around the cell membrane termed as _____.

(a) Cytoplasm
(b) Vacuole
(c) Cell wall
(d) Chloroplast

Q37. Which among the following is not an example of the 4th Generation of Computer?

(a) Apple II
(b) TRS-80
(c) ICL 2900
(d) STAR 1000

Q38. Tapi river basin extends over the state of _____.

(a) Chhattisgarh
(b) Tamil Nadu
(c) Karnataka
(d) Maharashtra

Q39. Which Union Ministry is related to Prime Minister's Employment Generation Programme (PMEGP)?

(a) Ministry of Micro, Small and Medium Enterprises
(b) Ministry of Commerce and Industry
(c) Ministry of Labour and Employment
(d) Ministry of Corporate Affairs

Q40. Which of the following pairs of "Himalayas - feature" is correct?

I. Kumaon Himalayas - lying between Satluj and Kali rivers
II. Nepal Himalayas - lying between Teesta and Dihang rivers

(a) Only II
(b) Both I and II
(c) Neither I nor II
(d) Only I

Q41. Which of the following is correct regarding the heating of the air?

I. It expands and occupies more space.
II. It becomes heavier on heating.

(a) Only I
(b) Neither I nor II
(c) Both I and II
(d) Only II

Q42. Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is an employment scheme that was launched in 2005 to provide social security by guaranteeing a minimum of _____ days of paid work per year to all families whose adult members opt for unskilled labour-intensive work.

(a) 100
(b) 150
(c) 120
(d) 200

Q43. India's First open Rock Museum is located in which city?

(a) Varanasi
(b) Chennai
(c) Mysuru
(d) Hyderabad

YourMockTest.com — Free Study Material

Q44. How many silver medals did India win in 2020 Tokyo Olympic Games?

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

Q45. Single use plastic which have low utility has been banned in India with effect from _____.

(a) 1^(st) August 2022
(b) 31st June 2022
(c) 31^(st) August 2022
(d) 1^(st) July 2022

Q46. The wet temperate type of forests are found between a height of _____ metres.

(a) 2000 and 3000
(b) 1500 and 3000
(c) 1000 and 2000
(d) 500 to 1000

Q47. When was the Lucknow Pact signed by All India Muslim League and Indian National Congress?

(a) 1916
(b) 1911
(c) 1919
(d) 1906

Q48. Mohiniyattam dance form gets its name from Hindu God _____.

(a) Kartikeya
(b) Shiva
(c) Vishnu
(d) Krishna

Q49. In which of the soil conservation methods in the coastal and dry regions, rows of trees are planted to check the wind movement to protect soil cover?

(a) Mulching
(b) Shelter belts
(c) Rock dam
(d) Contour barriers

Q50. _____ is the chemical process in which different types of chemical reactions are involved in controlling the living state of the cells in an organism.

(a) Transportation
(b) Respiration
(c) Excretion
(d) Metabolism

QUANTITATIVE APTITUDE

Q51. What is the sum of all two digit odd numbers?

(a) 2375
(b) 2475
(c) 2325
(d) 2425

YourMockTest.com — Free Study Material

Q52. If the numerator of a fraction is increased by 140% and the denominator of the fraction is decreased by 20%, the resultant fraction is 12/7. Find the original fraction.

(a) 4/9
(b) 4/7
(c) 7/6
(d) 8/9

Q53. A sum of Rs. 3000 becomes Rs. 6000 when invested in a scheme of simple interest. If the annual rate of interest and the number of years for which the sum was invested are same, then what is the annual rate of interest?

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

Q54. Paras sold his goods for Rs. 960 at 33.33% profit. Find the price at which he must sell his goods so that he earns 20% profit.

(a) Rs. 792
(b) Rs. 720
(c) Rs. 854
(d) Rs. 864

Q55. Vikram allows two successive discounts of 20% and 10% on the marked price of a book, which is equal to a single discount of Rs. 252. Then how much profit will Vikram get, on that book, if the cost price is Rs. 600?

(a) Rs. 72
(b) Rs. 56
(c) Rs. 48
(d) Rs. 54

Q56. If $(a + b + c) = 7$ and $ab + bc + ca = 12$, find the value of $a^2 + b^2 + c^2$.

(a) 29
(b) 31
(c) 27
(d) 25

Q57. If in triangle ABC, MN is parallel to BC, and M and N are points on AB and AC respectively. The area of quadrilateral MBCN = 130 cm^2. If AN : NC = 4 : 5, then the area of Triangle MAN is:

(a) 40 cm^2
(b) 65 cm^2
(c) 32 cm^2
(d) 45 cm^2

Q58. If $a + b + c = 0$ and $ab + bc + ca = -11$, then what is the value of $a^2 + b^2 + c^2$?

(a) -11
(b) 22
(c) 0
(d) 11

Q59. If the altitude of a triangle is 8 cm and its corresponding base it 12 cm, then the area of the triangle will be:

(a) 96 cm^2
(b) 48 cm^2
(c) 84 cm^2
(d) 24 cm^2

YourMockTest.com — Free Study Material

Q60. I is the incentre of the ΔXYZ. If angle YIZ = 115 degree, then what is the angle YXZ?

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

Q61. Tan of complementary of an angle is same as which of the angles?

(a) sin of that angle
(b) cot of that angle
(c) cos of that angle
(d) cosec of that angle

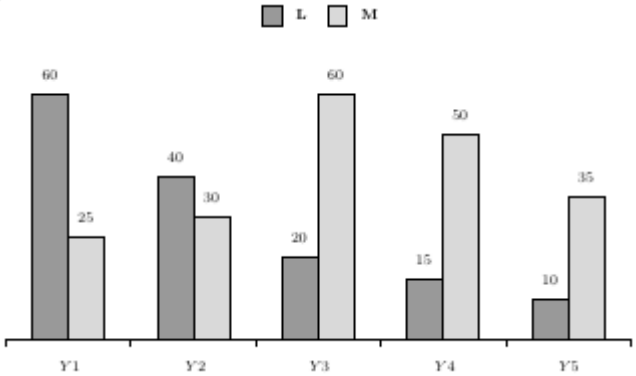
Q62. Find the value of 15 - 3 of 12 ÷ 2 + 3 of 2 ÷ 2

(a) 75
(b) 16
(c) 57
(d) 0

Q63. If 45% of a certain number is equal to 6/5th of another number, what is the ratio between the numbers?

(a) 9 : 11
(b) 8 : 3
(c) 1 : 7
(d) 7 : 4

Q64. The bar graph given below shows production of truck by two companies L and M in 5 years.



Which of the following statement is NOT correct?

I. The production of truck by company L in year Y1 is 24 percent of the production of company M in year Y1.

II. The ratio of production of truck by company L in year Y4 to the production of truck by company M in year Y4 are 10 : 3.

III. The average production of truck by company L in year Y2 and Y3 are 30.

(a) Only III
(b) Only I
(c) II and III
(d) I and II

Q65. The circumference of the two circles is 264 m and 308 m respectively. What is the difference between the area of the larger circle and the smaller circle?

(a) 2002 m^2
(b) 2010 m2
(c) 1890 m2
(d) 1990 m2

Q66. What is the value of 3/5 (sec² 20° - cot² 70°)?

(a) 4/3
(b) 5/3
(c) 2/5
(d) 3/5

Q67. The table given below shows the population of two states A and B in 5 years.

	States	
Years	A	B
P	250`	550
Q	450	350
R	300	200
S	150	100
T	50	250

What is the ratio of total population of B in year R, S and T to the total population of A in year P, Q and R?

(a) 13 : 19
(b) 21 : 14
(c) 11 : 20
(d) 20 : 11

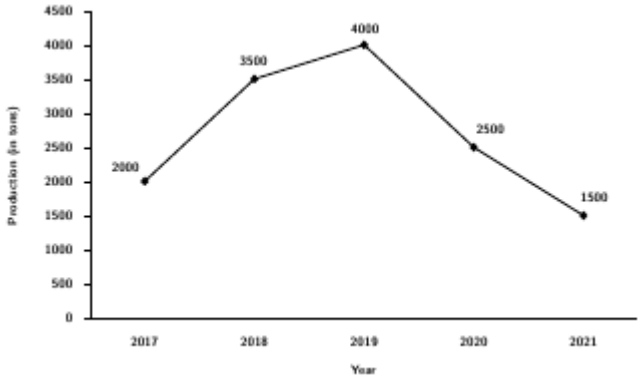
Q68. A man drove from home to a town at the speed of 60 km/hr and on his return journey, he drove at the speed of 30 km/hr and also took an hour longer to reach home. What distance did he cover each way?

(a) 75 km
(b) 55 km
(c) 60 km
(d) 80 km

Q69. Find the area of the circle whose circumference is 22 cm.

(a) 38.5 cm²
(b) 42 cm²
(c) 30 cm²
(d) 77 cm²

Q70. In the following graph the production of rice in 5 consecutive years are plotted. In which year the production of rice is maximum?



(a) 2017
(b) 2018
(c) 2020
(d) 2019

YourMockTest.com — Free Study Material

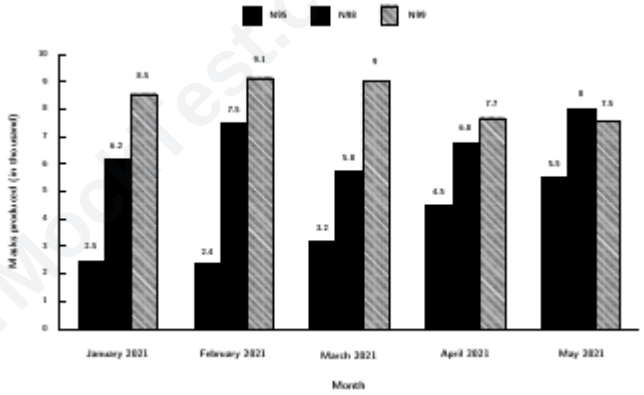
Q71. The average marks scored by three students on a test were 55. When two more students (A and B) were added, the new average marks were reduced by 5. If B scores 15 marks more than A, what were the marks scored by A?

(a) 33
(b) 35
(c) 40
(d) 30

Q72. A alone can complete a work in 40 days. 20 percent of the same work will be completed by A in how many days?

(a) 8 days
(b) 10 days
(c) 5 days
(d) 6 days

Q73. The bar graph below shows number of N95, N98 and N99 Masks produced (in thousand) by Wild Craft Pvt. Ltd. In five months. What is the ratio between the number of N98 masks produced in January 2021 and April 2021 together to the number of N95 masks produced in January 2021, March 2021 and May 2021 together?



(a) 56 : 65
(b) 65 : 56
(c) 65 : 74
(d) 55 : 64

Q74. If $(p^2 + 1/(p^2) = 14)$, then find the value of $(p^3 + 1/(p^3))$.

(a) 56
(b) 60
(c) 48
(d) 52

Q75. If sin^4x + sin²x = 1, then what is the value of cot^4x + cot²x?

(a) -2
(b) 2
(c) -1
(d) 1

GENERAL AWARENESS

Q76. Select the most appropriate meaning of the given idiom.

Good grief

(a) To dig a hole
(b) To be very systematic
(c) To try everything possible
(d) An expression of surprise or frustration

Q77. Choose the word that is opposite in meaning to the given word.

Temerity

(a) Diffidence
(b) Audacity
(c) Assurance
(d) Poison

Q78. Some parts of a few sentences have been jumbled up, and labelled A, B, C and D.

Select the option that gives the correct sequence in which these parts can be rearranged to form a meaningful and grammatically correct sentence.

The Ramayana is one of the largest ancient

A. 24,000 verses divided into seven Khanda (parts)

B. the first and the seventh being later additions.

C. epics in world literature. It consists of nearly

D. It belongs to the genre of Itihasa, narratives of past events, interspersed with teachings on the goals of human life.

(a) DCBA
(b) CABD
(c) BDCA
(d) ABDC

Q79. Some parts of a few sentences have been jumbled up, and labelled A, B, C and D.

Select the option that gives the correct sequence in which these parts can be rearranged to form a meaningful and grammatically correct sentence.

Mr. Summers spoke frequently

A. the one that had been constructed when the first people settled down to make a village here

B. liked to upset even as much tradition as was represented by the black box. There was a

C. to the villagers about making a new box, but no one

D. story that the present box had been made with some pieces of the box that had preceded it

(a) BDAC
(b) DACB
(c) ACDB
(d) CBDA

Q80. 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'.

Ashwatthama, Drona’s / only son, has had developed / a fondness for lavish living.

(a) No error
(b) a fondness for lavish living.
(c) only son, has had developed
(d) Ashwatthama, Drona’s

Q81. Select the most appropriate 'one word' for the expression given below.

Place where bees are kept.

(a) Hive
(b) Apiary
(c) Net
(d) Aviary

Q82. Select the word that is closest in meaning (SYNONYM) to the word given below.

Frequent

(a) Constant
(b) Broken
(c) Ceasing

YourMockTest.com — Free Study Material

(d) Inconsistent

Q83. Fill in the blank with an appropriate option.

I dump the tray on the side and start _____ up the dishwasher.

(a) tantalizing
(b) upbringing
(c) alienating
(d) loading

Q84. Improve the underlined part of the sentence. Choose 'No improvement' as an answer if the sentence is grammatically correct.

The actors is to shoot the scene three times.

(a) No improvement
(b) had to shooting
(c) has to shoot
(d) had to shoot

Q85. Select the most appropriate antonym of the given word.

TARDY

(a) BELATED
(b) OVERDUE
(c) DELINQUENT
(d) PROMPT

Q86. Choose the option that is the correct indirect form of the sentence.

"Who is it?" Vikram asked, his euphoria fading.

(a) With a faded euphoria Vikram asked who is it.
(b) As his euphoria faded, Vikram asks as to who was it.
(c) With his euphoria faded, Vikram asked who it is.
(d) With his euphoria fading, Vikram asked who it was.

Q87. Find the part of the given sentence that has an error in it. If there is no error, choose 'No error'.

Democrats are often more receptive and accommodating of foreign people and cultures.

(a) No error
(b) Democrats are often more receptive
(c) foreign people and cultures.
(d) and accommodating of

Q88. Choose the word that can substitute the given group of words.

One who goes on foot

(a) Hypochondriac
(b) Vigilant
(c) Pedestrian
(d) Cynic

Q89. Select the most appropriate antonym of the given word.

Sporadic

(a) Scattered
(b) Random
(c) Rare
(d) Systematic

YourMockTest.com — Free Study Material

Q90. Select the most appropriate one-word substitution for the given group of words.

An argument or statement seeming reasonable or probable

(a) Incorrigible
(b) Corrigible
(c) Congruent
(d) Plausible

Q91. Choose the correctly spelt word.

(a) MINARET
(b) PERTIMENT
(c) OCCURED
(d) RELEVENT

Q92. Choose the incorrectly spelt word.

(a) SPLENDID
(b) MEAGRE
(c) MARRIAGEABLE
(d) CONSCENT

Q93. Select the correct passive form of the given sentence.

Ravish likes chocolate.

(a) Chocolate was liked by Ravish.
(b) Chocolate is liked by Ravish.
(c) Chocolate were liked by Ravish.
(d) Chocolate is being liked by Ravish.

Q94. In the following question, out of the given four alternatives, select the alternative which best expresses the meaning of the Idiom/Phrase.

To jump out of one’s skin

(a) To argue with someone
(b) To feel immense pain
(c) To show one’s real side
(d) To be extremely surprised

Q95. Fill in the blank with an appropriate option.

Lecanemab was recently reported to have a small but _____ effect in reducing cognitive decline.

(a) optional
(b) marginal
(c) microscopic
(d) significant

Directions

In the following passage some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each number.

With his slight build and his simple white clothes, Narad (1) _____ harmless, but he had quite a (2) ____. He had powerful family connections and was a (3) ____ devotee of Lord Vishnu. His favourite (4) ____ was to travel from court to court and world to world, collecting gossip and (5) _____ mayhem.

Q96. Select the most appropriate option to fill in the blank No. 1.

(a) watched
(b) saw
(c) looked
(d) observed

YourMockTest.com — Free Study Material

Q97. Select the most appropriate option to fill in the blank No. 2.

(a) reputation
(b) disapproval
(c) dismay
(d) censure

Q98. Select the most appropriate option to fill in the blank No. 3.

(a) brooding
(b) pleasant
(c) peasant
(d) formidable

Q99. Select the most appropriate option to fill in the blank No. 4.

(a) activity
(b) action
(c) bustle
(d) movement

Q100. Select the most appropriate option to fill in the blank No. 5.

(a) spreading
(b) scattering
(c) diffusing
(d) advancing

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) Either I or II follows

Statements:
Statement I: Some fish are frogs.
Statement II: Some frogs are whales.
The least possible Venn diagram for the given statement is:
Conclusion:
I. Some fish are whales - False (No definite relation given between fish and frogs, so it can be possible only).
II. No fish is a whale - False (No definite relation given between fish and frogs, so it can be possible only).
Here, Conclusion I and II forms complementary pair for either-or.
So, Either conclusion I or II follow.
Hence, the correct answer is "Option 3".

YourMockTest.com — Free Study Material

Additional Information

Conditions of Either-or case:

1. The elements should be the same in both the statements.

2. Both the conclusions should be false individually.

3. One conclusion should be positive and one conclusion should be negative (Complementary pair) -

The two complementary pairs are:

1) All + Some not

2) No + Some

Note: Some + Some not is not considered under Either -or case.

Q2. Answer: (b) Urusha

Given: Seven students Panchi, Qazi, Ricky, Sweta, Tiya, Urusha, and Vinay.

1) Panchi scored the second-highest marks in the class.

Panchi > > > > >

2) Marks scored by Vinay were higher than only one person.

Panchi > > > > Vinay > __

3) Three persons got higher than Tiya and three got lesser than Tiya.

4) Sweta's score was more than Tiya but less than Panchi.

Panchi > Sweta > Tiya > > Vinay > __

5) Neither Ricky nor Qazi received the lowest marks.

Panchi > Sweta > Tiya > > Vinay > Urusha (since Ricky and Qazi neither has got lowest marks. So, Urusha must be the one with the lowest marks)

6) This gives us the order as:

Panchi > Sweta > Tiya > > Vinay > Urusha

7) There are two positions left to fill, for Ricky and Qazi, who should be placed higher than Vinay and lower than Tiya. Without additional information, their positions relative to each other can't be determined. Therefore, the final order could be one of the following:

Ricky/Qazi > Panchi > Sweta > Tiya > Qazi/Ricky > Vinay > Urusha

So, Urusha scored the lowest marks.

Hence, the correct answer is "Urusha".

Q3. Answer: (a) PGAC

The logic followed here is:

For, PAG : NYE,

For, TUB : RSZ,

Similarly, for RICE : ?

Hence, the correct answer is "Option 1".

Q4. Answer: (c) 5 and 107

BODMAS Table:

Given equation I. 5 × 12 - 15 + 20 ÷ 25

Now, if '× and +' are interchanged, then:

=> 5 + 12 - 15 × 20 ÷ 25

=> 5 + 12 - 15 × 0.8

=> 5 + 12 - 12

=> 17 - 12 = 5.

Given equation II: 36 + 3 × 2 - 15 ÷ 5

Now, if '× and +' are interchanged, then:

=> 36 × 3 + 2 - 15 ÷ 5

=> 36 × 3 + 2 - 3

=> 108 + 2 - 3

=> 110 - 3 = 107.

Here, the correct values are '5 and 107'.

Hence, the correct answer is "Option 3".

Q5. Answer: (d) (7, 49, 343)

The logic followed here is:

Logic:- Second Number = Square of First Number,

=> Third Number = Cube of First Number.

(11, 121, 1331)

→ $121 = 11^2$

→ $1331 = 11^3$

(13, 169, 2197)

→ $169 = 13^2$

→ $2197 = 13^3$

Let's check each option as per the logic:

1. (9, 729, 81):

→ $729 \neq 9^2$

→ $81 \neq 9^3$ => Doesn't satisfy the logic.

1. (6, 36, 324):

→ $36 = 6^2$

→ $324 \neq 6^3$ => Doesn't satisfy the logic.

1. (5, 25, 625):

→ $25 = 5^2$

→ $625 \neq 5^3$ => Doesn't satisfy the logic..

1. (7, 49, 343):

→ $49 = 7^2$

→ $343 = 7^3$ => Satisfies the logic.

Here, we can see that Option 4 satisfies the logic.

Hence, the correct answers are "(7, 49, 343)".

Q6. Answer: (b) 2186102

The logic followed here is:

'28373' is coded as '4166146'.

Similarly, for '19351'

'19351' is coded as '2186102'.

Hence, the correct answer is "Option 2".

Q7. Answer: (c) [figure]

When the paper is unfolded, it appears as shown below:

Hence, the correct answer is "Option 3".

Q8. Answer: (d) Frog

The logic followed here is:

Logic: Nymph is a young form of a Cockroach.

Similarly, Tadpole is a young form of a Frog.

Hence, the correct answer is "Frog".

Q9. Answer: (d) (625, 784, 256)

The logic followed here is:

Logic: All three numbers in the set are perfect squares.

(169, 1681, 529):

→ $169 = (13)^2$, $1681 = (41)^2$, $529 = (23)^2$

(144, 576, 1024):

→ $144 = (12)^2$, $576 = (24)^2$, $1024 = (32)^2$

Let's check each option as per the logic,

1) (196, 289, 224):

YourMockTest.com — Free Study Material

→ Here, 224 is not a perfect square.

2) (144, 121, 999):

→ Here, 999 is not a perfect square.

3) (624, 785, 256):

→ Here, 624 and 785 is not a perfect square.

4) (625, 784, 256):

→ 625 = $(25)^2$, 784 = $(28)^2$, 256 = $(16)^2$

Here, we can see that all three numbers are perfect square and thus follow the logic.

Hence, the correct answer is "(625, 784, 256)".

Q10. Answer: (d) HJI

The logic followed here is:

Option 1) QSU

Option 2) UWY

Option 3) CEG

Option 4) HJI

Here, 'HJI' is odd among the given options.

Hence, the correct answer is "Option 4".

Q11. Answer: (d) [figure]

When the paper is unfolded, it appears as shown below:

Hence, the correct answer is "Option 4".

Q12. Answer: (b) [figure]

When the paper is unfolded, it appears as shown below:

Hence, the correct answer is "Option 2".

Q13. Answer: (d) Furniture

The logic followed here is:

Logic: The first word is a type of the second word.

Ostrich: Bird

→ Ostrich is a type of Bird.

Similarly,

Chair:?

→ Chair is a type of Furniture.

Hence, the correct answer is "Furniture".

Q14. Answer: (c) [figure]

The logic followed here is:

Step I: The arrow are getting rotated at 90 degree and shifted one place in clockwise direction.

Step II: The Letter Box are getting closed and opened in alternatively.

Hence, the correct answer is "Option 3".

Q15. Answer: (c) (289, 361, 441)

The logic followed here is:

Logic:- All Numbers in each set are perfect squares of odd numbers.

(25, 49, 81):

→ 25 = 5^2

→ 49 = 7^2

→ 81 = 9^2

(169, 225, 289):

→ 169 = 13^2

→ 225 = 15^2

→ 289 = 17^2

YourMockTest.com — Free Study Material

Let's check each option as per the logic:
1. (441, 529, 676):
→ 441 = 21^2
→ 529 = 23^2
→ 676 = 26^2
26 is not an odd number => Doesn't satisfy the logic.
1. (100, 144, 256):
→ 100 = 10^2
→ 144 = 12^2
→ 256 = 16^2
These are not consecutive odd numbers => Doesn't satisfy the logic.
1. (289, 361, 441):
→ 289 = 17^2
→ 361 = 19^2
→ 441 = 21^2
These are squares of consecutive odd numbers => Satisfies the logic.
1. (121, 169, 289):
→ 121 = 11^2
→ 169 = 13^2
→ 289 = 17^2
These are not consecutive odd numbers => Doesn't satisfy the logic.
Here, we can see that only Option 3 satisfies the logic.
Hence, the correct answer is "Option 3".

Q16. Answer: (c) 28

The triangles are:
So, there are '28' triangles in the given figure.
Hence, the correct answer is "28".

Q17. Answer: (b) 144

The logic followed here is:
Logic: (1st number - 2)^2.
Now,
For, 12 : 100
=> $(12 - 2)^2$
=> $10^2 = 100$.
For, 10 : 64
=> (10 - 2)2
=> 82 = 64.
Similarly, for 14 : ?
=> (14 - 2)2
=> 122 = 144.
Hence, the correct answer is "Option 2".

Q18. Answer: (d) [figure]

The logic followed here is:
All Fathers are Males,
And, some Fathers can be Teachers also.
Hence, the correct answer is "Option 4".

Q19. Answer: (a) 6

Given,
A cube is painted Orange on all surfaces and then the cube cuts into 27 small cubes of equal part.

YourMockTest.com — Free Study Material

So, it has been cut into: 3 × 3 × 3.
Here, n = 3.
Now, using formula: $(n - 2)^2 \times 6$
=> (n - 2)2 × 6
=> (3 - 2)2 × 6
=> 12 × 6
=> 1 × 6 = 6.
So, total '6' cubes will have only one face painted.
Hence, the correct answer is "6".

Q20. Answer: (a) 2, 3, 4, 1, 5

The logic followed here is:
→ The units of length are arranged in increasing order of their magnitude in the metric system.
The correct order as per the logic is,
2) Millimeter
3) Decimeter
4) Decameter
1) Hectometer
5) Kilometer
Hence, the correct answer is "2, 3, 4, 1, 5".

Q21. Answer: (a) (Igloo, Nun, Sty)

The logic followed here is:
Logic: Each group contain words related to dwellings or places of habitation.
Let's check each option as per the logic,
1) (Igloo, Nun, Sty):
→ Nun is not a type of dwelling. => Doesn't follow the logic.
2) (Web, Cottage, Palace):
→ All are types of dwelling.
3) (Stable, Monastery, Hive):
→ All are types of dwelling.
4) (Den, Byre, Barn):
→ All are types of dwelling.
Here, we can see that only Option 1 doesn't follow the logic.
Hence, the correct answer is "(Igloo, Nun, Sty)".

Q22. Answer: (c) 240

The logic followed here is:
So, '240' will complete the series.
Hence, the correct answer is "Option 3".

Q23. Answer: (b) pcdpp

The logic followed here is:
Given Sequence: ccd_cc_d_ppccccddd_ _p
Now, putting the letters in the blank spaces given in the option one by one:
Option 1) ppdcp → c c d p c c p d d p p c c c c d d d c p p
Option 2) pcdpp → c c d p c / c c d d p p c c / c c d d d p p p
Here, 'Option 2' followed a pattern.
Option 3) pcdpc → c c d p c c c d d p p c c c c d d d p c p
Option 4) pccdp → c c d p c c c d c p p c c c c d d d d p p
Hence, the correct answer is "Option 2".

Q24. Answer: (d) Daughter

Family Chart:

Given: Pointing to a photograph of a man Riya said, "He is the father of the only son of my mother."

So, Riya is the 'Daughter' of that man.

Hence, the correct answer is "Option 4".

Q25. Answer: (b) RUBREG

The logic followed here is:

'HAMLET' is coded as 'MAHTEL'.

Similarly, for 'BURGER'

'BURGER' is coded as 'RUBREG'.

Hence, the correct answer is "Option 2".

Q26. Answer: (c) Joanna Scanlan

The correct answer is Option 3.

Key Points

• Joanna Scanlan won the Best Actress in Leading Role award in the 75th BAFTA Award ceremony.

• The 75th British Academy Film Awards, also known as the BAFTAs, were held on 13 March 2022 at the Royal Albert Hall in London, honouring the best national and foreign films of 2021.

• The ceremony was hosted by actress and comedian Rebel Wilson.

• The film that received maximum nominations was Dune, with 11 nominations.

• The film that received the maximum number of awards was Dune as well with 5 awards.

Q27. Answer: (b) Both I and II

The correct answer is Both I and II.

Key Points

• Rolling Plan – Introduced before Sixth Five-Year Plan: This statement is correct.

• It was initiated in 1978 by the Janata government. Instead of having a fixed five-year plan, the idea was to have a continuous (rolling) plan, updated every year based on the needs and priorities of the economy at that time.

• Mahalanobis Plan – Second Five-Year Plan: This statement is correct.

• The Second Five-Year Plan, also known as the Mahalanobis Plan, was launched in 1956.

• It was named after the well-known statistician Prasanta Chandra Mahalanobis who played a key role in its formulation.

• The plan followed the strategy of rapid industrialization, with particular emphasis on heavy industries.

Q28. Answer: (d) Bangladesh

The correct answer is Option 4.

Key Points

• In a momentous triumph at the Dashrath Rangshala Stadium in Kathmandu, Nepal, Bangladesh achieved an unprecedented victory at the SAFF Women's Championship, clinching their inaugural title.

• The Bangladesh team exhibited exceptional football skills, captivating a packed stadium, as they secured a remarkable 3-1 win over the host nation, Nepal, in the final match.

• Sabina Khatun, the captain of Bangladesh, emerged as the tournament's leading goal scorer with an impressive tally of eight goals in five matches. In a heartfelt gesture, she dedicated the well-deserved trophy to the people of Bangladesh, symbolizing their collective achievement.

Additional Information

• The SAFF Women's Championship of 2022 marked the tournament's sixth edition, a prestigious international women's football championship that brings together national teams from the South Asian Football Federation.

• Held in Kathmandu, Nepal, the thrilling competition unfolded from September 6 to September 19, 2022.

Q29. Answer: (a) Jaipur

The correct answer is Option 1.

Key Points

• Location and Design: Hawa Mahal, also known as the "Palace of Winds," is located in Jaipur, the capital city of Rajasthan, India.

• It was designed in the form of the crown of Lord Krishna, with its unique five-story exterior resembling a honeycomb.

• Historical Significance: Built in 1799 by Maharaja Sawai Pratap Singh, Hawa Mahal is an architectural marvel that is an integral

YourMockTest.com — Free Study Material

part of Jaipur's history and royal heritage.

• It was constructed to enable ladies of the royal household to watch the life and processions of the city without being seen from the outside, given the strict "purdah" system followed at that time.

• Architecture: Hawa Mahal is a prime example of Rajput architecture and Indian artistry with its pink sandstone construction.

• The building does not have a foundation, and it is the tallest building in the world that does not have a solid base. It has over 950 windows, known as 'Jharokhas,' decorated with intricate latticework.

• Ventilation: The name "Hawa Mahal" translates to "Palace of Winds," which refers to the natural ventilation system in the building.

• The unique design of the windows allows cool air to circulate naturally through the building, making it an early example of sustainable architecture.

• Tourism: Today, Hawa Mahal is one of the most popular tourist attractions in Jaipur. Visitors can climb to the top floor for a panoramic view of the city, including the Jantar Mantar and the City Palace on one side and the Siredeori Bazaar on the other.

• It's a great place to learn about the culture and history of Rajasthan.

• Preservation Efforts: The Hawa Mahal is maintained by the Archaeological Department of the Government of Rajasthan.

• The monument is well-preserved, reflecting the rich cultural heritage of the region, despite being over two centuries old.

Q30. Answer: (a) Arjun Munda

The correct answer is Option 1.

Key Points

• Shri Arjun Munda is the Union Minister for Tribal Affairs as on October 2022.

• The Ministry of Tribal Affairs in India is a federal authority that is responsible for the overall welfare of tribal communities. The Union Minister for Tribal Affairs holds a significant role in shaping and implementing policies for these communities. Here are four key responsibilities:

• Policy Development and Implementation: The Union Minister is responsible for formulating and executing policies, plans, and programs for the socio-economic development of the Scheduled Tribes (STs) in India. This includes legislative and administrative measures that aim to bridge the development gap between STs and the rest of the population.

• Promotion of Education: One of the crucial responsibilities is the promotion and enhancement of educational opportunities for tribal communities. The minister oversees programs and initiatives that encourage and support education among STs, such as the Eklavya Model Residential Schools and Post-Matric Scholarship for ST students.

• Preservation of Cultural Heritage: The minister has the duty to preserve and promote the rich heritage, culture, and languages of the tribal communities. This involves backing initiatives that foster cultural exchange and understanding, support traditional arts and crafts, and safeguard tribal cultures and traditions.

• Liaison with Other Ministries and Departments: The Union Minister often works closely with other ministries and departments at both the central and state levels to ensure that the welfare measures reach the tribal communities effectively. This involves coordinating with departments like Health, Education, Rural Development, and others to synchronize their efforts towards tribal development.

Q31. Answer: (a) Banabhatta

The correct answer is Banabhatta.

Key Points

• The "Harshacharita", a biography of Harshavardhana, was written by Banabhatta, who was a Sanskrit scholar and a poet in the court of Harshavardhana. Banabhatta lived around the 7th century CE.

• "Harshacharita" is a historical narrative detailing the life and times of King Harsha, who ruled North India from 606 to 647 CE.

• He is also known for his work "Kadambari."

Additional Information

• Harisena:

• He was a court poet of Samudragupta, a Gupta emperor.

• His most notable work is the Allahabad Pillar Inscription, which details the conquests and accomplishments of his patron.

• Ravikirti:

• He was the court poet of the Chalukya king Pulakeshin II.

• His work, the Aihole Prashasti (Aihole Inscription), written in Sanskrit, extols the victory of Pulakeshin II over the northern king Harshavardhana.

• Xuan Zang:

• He was a Chinese Buddhist monk, scholar, traveler, and translator who traveled to India in the 7th century.

• His works, "Great Tang Records on the Western Regions" and "Buddhist Records of the Western World," detail his journey and experiences in India and other parts of Central and South Asia.

Q32. Answer: (a) Speaker

The correct answer is Speaker.

Key Points

• A speaker is an output device that transforms digital signals processed by the computer's sound card into audible sound waves or audio.

• The sound card sends an electrical signal to the speaker, and then the speaker converts this electrical signal into physical vibrations (sound waves) that we can hear.

Additional Information

Device	Input/Output Device	Function / Signal Conversion
Plotter	Output	Plotters convert digital vector images sent from the computer into physical plots on various materials, usually paper or plastic, using pens or other drawing instruments. The computer sends data to the plotter specifying the colors and shapes in the image, and the plotter then creates the image on the output medium.
Graphics Card	Output	The graphics card takes digital visual data from the processor and converts it into a signal that the monitor can display. The resulting output is what you see on your monitor. The graphics card is vital for rendering high-quality images quickly, especially for video games and high-definition videos.
Monitor	Output	The monitor receives digital or analog signals from the graphics card and converts them into visible light displays. In a nutshell, the graphics card translates the data into signals the monitor can use, and the monitor displays these signals as the images you see on the screen.

Q33. Answer: (b) Both I and II

The correct answer is Both I and II.

Key Points

Sport	Important Terminologies
Football (Soccer)	Goal, Offside, Penalty, Corner Kick, Free Kick, Yellow/Red Card, Dribbling, Tackle, Hat-Trick
Basketball	Dribble, Slam Dunk, Free Throw, Three-Pointer, Rebound, Layup, Block, Double-Double, Triple-Double
Cricket	Wicket, Over, Run, Sixer, Boundary, Duck, Leg Before Wicket (LBW), Century, Hat-trick
Tennis	Ace, Deuce, Double Fault, Serve, Volley, Backhand, Forehand, Grand Slam, Match Point
Baseball	Home Run, Strike, Ball, Out, Inning, Double Play, Grand Slam, Bunt, Pitcher, Catcher
Golf	Birdie, Bogey, Par, Eagle, Hole-in-One, Green, Fairway, Bunker, Putt, Driver
American Football	Touchdown, Field Goal, Interception, Sack, Fumble, Punt, Quarterback, Linebacker, Safety

YourMockTest.com — Free Study Material

Q34. Answer: (c) Article 14

The correct answer is Article 14.

Key Points

• Article 14

• Article 14 of the Indian Constitution is about 'Equality Before Law' and it states:

• "The State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India."

• This article is a fundamental right under Part III of the Constitution of India, which talks about Rights to Equality.

• The principle of 'Equality before law' is of British origin, while 'Equal protection of the laws' is borrowed from the Constitution of the United States.

Additional Information

Article	Description
Article 19	This article guarantees six fundamental freedoms to all citizens of India: - Freedom of Speech and Expression, - Freedom to Assemble Peaceably and Without Arms, - Freedom to form Associations or Unions, - Freedom to Move Freely Throughout the Territory of India, - Freedom to Reside and Settle in Any Part of the Territory of India, and - Freedom to Practice Any Profession, or to Carry on Any Occupation, Trade or Business.
Article 23	• Article 23 prohibits human trafficking, forced labour, and any form of exploitation. It states: "Traffic in human beings and begar and other similar forms of forced labour are prohibited and any contravention of this provision shall be an offence punishable in accordance with law."
Article 36	• This article is part of the Directive Principles of State Policy, which are guidelines or directions given to the state for creating a social order characterized by justice – social, economic, and political. Article 36 defines the 'State' to include the government and Parliament of India and the government and legislatures of each of the states and all local or other authorities within the territory of India or under the control of the Government of India.

Q35. Answer: (c) Ministry of Women and Child Development

The correct answer is Ministry of Women and Child Development.

Key Points

• Saksham Anganwadi and Poshan 2.0 are part of the umbrella scheme "Mission Shakti" launched by the Government of India.

• These initiatives were introduced in the Union Budget 2021-22 with an aim to strengthen nutritional content, delivery, outreach, and outcomes with a focus on developing practices that nurture health and wellness.

• Saksham Anganwadi:

• This initiative is designed to upgrade the Anganwadis of India and turn them into more effective institutions for delivering public services to women and children.

• Anganwadi centers are rural mother and child care centers in India, established under the Integrated Child Development Services (ICDS) program to combat child hunger and malnutrition. "Saksham Anganwadi" aims to provide a digital solution to improve delivery outcomes with the use of technology.

• The plan is to develop e-Anganwadi, a digital platform to monitor and track the performance and growth of each Anganwadi.

• Poshan 2.0:

• Poshan Abhiyaan, also known as the National Nutrition Mission, was launched in 2018 to improve the nutritional status of children up to 6 years, adolescent girls, pregnant women, and lactating mothers.

• The mission aimed to reduce the level of stunting, undernutrition, anemia, and low birth weight babies. "Poshan 2.0" is a reboot or continuation of this mission with stronger strategies and improved implementation mechanisms.

Q36. Answer: (c) Cell wall

The correct answer is Cell wall.

Key Points

• The cell wall is present in plant cells but not in animal cells and it is made up of cellulose and chitin.

• The plant is covered by an outer cell wall.

• Cellulose is one of the major components of the cell wall.

YourMockTest.com — Free Study Material

• It is a polymer of glucose joined by glycosidic linkage.

• It helps in maintaining its shape and provides rigidity to the plant.

Additional Information

Mitochondria:

• Mitochondria is a double-layered cell organelle, in which the outer layer is porous and the inner layer is folded upon itself is known to be cristae.

• The number of mitochondria in a single cell may be up to 50 to 5000.

• The inner lumen of mitochondria contains ribosome phosphate particles and DNA molecules.

• It has the potential to synthesize its own protein and the oxidation of carbohydrates and fats are taken place with the help of enzymes in mitochondria.

• This energy is stored in the form of ATP (Adenosine Triphosphate) so, these are known as the "Powerhouse of the cell".

Golgi apparatus:

• This cell organelle is primarily responsible for the storage, processing, and packaging of proteins.

• Golgi Apparatus is found within the cytoplasm of a cell and are present in both plant and animal cells.

Ribosomes:

• The eukaryotic cell comprises of true nucleus and organelles in its cytoplasm.

• Mitochondria, ribosomes, Endoplasmic reticulum, and Golgi complex are organelles present in the cytoplasm.

• The sites for protein synthesis in the cells are ribosomes.

• Ribosomes are present as free ribosomes in the cytoplasm or, as membrane-bound on the rough endoplasmic reticulum.

• Ribosomes consist of small and large subunits and are 80s-type.

• It is the site where mRNA translation occurs, and protein formation takes place.

Q37. Answer: (c) ICL 2900

The correct answer is ICL 2900.

Key Points

• The ICL 2900 is not an example of the 4th Generation of Computers.

• The ICL 2900 was released in 1966, making it a 3rd Generation Computer.

• Here are some of the characteristics of 4th Generation Computers:

• They use Very Large Scale Integration (VLSI) technology.

• They are more powerful and reliable than previous generations of computers.

• They are smaller and more affordable than previous generations of computers.

• They use high-level languages such as C and C++.

Additional Information

• Apple II - This is indeed an example of a fourth-generation computer. It was released by Apple Computer (now Apple Inc.) in 1977 and was one of the first highly successful mass-produced microcomputer products.

• TRS-80 - This is another example of a fourth-generation computer. It was a desktop microcomputer launched in 1977 and produced by Tandy Corporation through their Radio Shack stores.

Q38. Answer: (d) Maharashtra

The correct answer is Maharashtra.

Key Points Tapi River

• Apart from the Narmada river, Tapi is the only river that flows in the westward direction and flows through a rift valley.

• Total length: around 724 km.

• Originates in Betul district, Madhya Pradesh in the Satpura range.

• It merges into the Arabian Sea.

• It basin extends through states of Maharashtra, Gujrat and Madhya Pradesh.

• The main tributaries of the Tapi river are Purna, The Girna, The Panjhra, The Vaghur, the Bori and the Aner.

Additional Information

River	Origin
Godavari	Trimbakeshwar, Nashik
Krishna	Mahabaleshwar, Satara
Tapi	Multai, Betul district, Madhya Pradesh

Godavari	Nasik Hills, Maharashtra
Krishna	Mahabaleshwar, Maharashtra
Penna	Nandi Hills, Chikballapur district, Karnataka
Narmada	Amarkantak, Anuppur district
Betwa	Vindhya Range, near Bhopal
Chambal	Janapav, Mhow district
Kaveri	Talakaveri, Kodagu district
Krishna	Mahabaleshwar, Maharashtra
Tungabhadra	Koodli, Shimoga district

Q39. Answer: (a) Ministry of Micro, Small and Medium Enterprises

The correct answer is Ministry of Micro, Small and Medium Enterprises.

Key Points

• Prime Minister's Employment Generation Programme (PMEGP) is a credit-linked subsidy program.

• It was launched in 2008 for the generation of employment opportunities through the establishment of microenterprises in rural and urban areas.

• It is a central sector scheme being administered by the Ministry of Micro, Small and Medium Enterprises (MSME).

• Implementing Agency at the National Level is Khadi and Village Industries Commission(KVIC).

• It is a statutory organization under the administrative control of the Ministry of MSME.

• Features of the scheme are as follow-

• It allows entrepreneurs to set up factories or units.

• Any individual above 18 years of age is eligible for this scheme.

• Only new projects/units are considered for sanction of loans.

• Maximum Cost of Project/Unit Admissible for Manufacturing Sector is Rs. 50 lakh.

• Maximum Cost of Project/Unit Admissible for Service Sector is Rs. 20 lakh.

• The government has decided to provide Subsidy in Rural Areas - 25% for the general category and 35% for the special category, which includes SC/ST/ OBC/Minorities, Northeast Region, Hill, and Border Areas. and, In Urban Areas- 15% for general category and 25% for special categories.

• Under the scheme, loans are provided by Public Sector Banks, Regional Rural Banks, Co-operative Banks, and Private Scheduled Commercial Banks approved by respective State Task Force Committee.

Additional Information

• The Ministry of Micro, Small and Medium Enterprises, a branch of the Government of India.

• It is the apex executive body for the formulation and administration of rules, regulations, and laws relating to micro, small and medium enterprises in India.

Q40. Answer: (d) Only I

The correct answer is Only I.

Key Points

The Himalayas have also been divided on the basis of regions from west to east.

These are Punjab Himalayas, Kumaon Himalaya, Nepal Himalayas, and Assam Himalaya.

The divisions of the Himalayas that have been demarcated by the river valleys are:

• Nepal Himalayas -The part of the Himalayas lying between the rivers Kali and Teesta is known as the Nepal Himalayas.

• Kumaon Himalayas -The part of the Himalayas lying between the rivers Satluj and Kali is known as the Kumaon Himalayas.Therefore 1st statement is correct.

• Assam Himalayas -The part of the Himalayas lying between the rivers Teesta and Dihang is known as the Assam Himalayas. Therefore 2nd statement is incorrect.

• Punjab Himalayas -The part of the Himalayas lying between the rivers Indus and Satluj is known as the Punjab Himalayas.

Additional Information

• The main Himalayan river systems are those of the Indus and the Ganga-Brahmaputra-Meghna system.

• The Indus, which is one of the great rivers of the world, rises near Mansarovar in Tibet and flows through India, and thereafter

YourMockTest.com — Free Study Material

through Pakistan, and finally falls in the Arabian Sea near Karachi.

• The Brahmaputra marks the easternmost boundary of the Himalayas. Beyond the Dihang gorge, the Himalayas bend sharply to the south and spread along the eastern boundary of India.

• To the south of the main Himalayas lies the Pir Panjal Range at an average height of 5,000 meters (16,000 ft).

• From Gulmarg, in the northwest, it follows the southern rim of the Kashmir valley to the Banihal Pass.

• Here the Pir Panjal meets the ridgeline that separates the Kashmir valley from the Warvan Valley.

Q41. Answer: (a) Only I

Correct Answer Only I

Key PointsStatement I: When air is heated, it expands and occupies more space.

• This phenomenon is a result of the increase in the kinetic energy of the air molecules.

• As the air molecules gain energy, they move more vigorously and spread out, leading to an increase in volume and expansion of the air.

• This expansion is commonly observed in various situations, such as hot air rising or the expansion of air in a balloon when it is exposed to heat.

Statement II, which suggests that air becomes heavier on heating, is incorrect.

• Heating air does not cause it to become heavier.

• In fact, as the air expands and occupies more space when heated, its density decreases, making it lighter compared to an equal volume of cooler air.

• This is why hot air tends to rise above cooler air in the atmosphere.

Q42. Answer: (a) 100

The correct answer is 100.

Key Points:

• Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) provide 100 days of guaranteed wage employment.

• This was initiated with the objective of “enhancing livelihood security in rural areas by providing at least 100 days of guaranteed wage employment in a financial year, especially to households whose adult members volunteer to do unskilled manual work".

• This Act also aims to create durable assets (such as roads, canals, ponds, and wells).

• Within 5 km of an applicant’s residence, employment is provided.

Additional Information:Objectives of MGNREGA:

• The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

• Provide 100 days of guaranteed wage employment to rural unskilled labour

• Increase economic security.

• Decrease migration of labour from rural to urban areas.

• It was known to be the National Rural Employment Guarantee Act.

• MGNREGA Job Card is a document that renders a worker entitled to work under the MGNREGA scheme.

Q43. Answer: (d) Hyderabad

The correct answer is Hyderabad.

Key Points:

• Union Minister of State Science and Technology Dr. Jitendra Singh inaugurated India’s first unique Rock Museum in Hyderabad.

• The Open Rock Museum has been set up with the aim to educate people about several lesser-known facts.

• It displays around 35 different types of rocks from different parts of India with ages ranging from 3.3 billion yrs to around 55 million years of the Earth’s history.

Additional Information:

• The Open Rock Museum is an educational institution dedicated to sharing knowledge and raising awareness about various lesser-known facts related to rocks.

• It showcases approximately 35 different types of rocks sourced from various regions in India.

• These rocks not only represent a wide range of geological diversity but also include specimens that originate from the deepest parts of the Earth, reaching depths of up to 175 kilometers below the Earth's surface.

• The museum exhibits rocks collected from different states in India, such as Odisha, Tamil Nadu, Uttarakhand, Jharkhand, Jammu & Kashmir, among others.

• Each rock specimen is carefully selected to highlight its unique characteristics, geological significance, and the processes that contributed to its formation over millions of years.

YourMockTest.com — Free Study Material

Q44. Answer: (b) 2

The correct answer is 2

Key PointsIndia won 2 silver medals at the (2020) Olympic Games held in Tokyo in 2021.

Game	Athlete
Javelin throw	Neeraj Chopra- Gold
Wrestling (57 KG)	Ravi Kumar Dahiya- Silver
Weight Lifting (49 Kg Women)	Mirabai Chanu- Silver

Tokyo Olympics 2021 India Bronze Medal List -

Women's Singles Badminton	PV Sindhu
Women's Welterweight Boxing	Lovlina Borgohain
Hockey	Indian Hockey Team
Wrestling (65 Kg)	Bajarang Punia

Other Medals:

Additional Information:Olympic Games 2021:

• The Olympics took place in Tokyo.

• The cauldron was held by Naomi Osaka.

• Its mascots were Miraitowa (the official mascot of the 2020 Summer Olympics) and Someity (the official mascot of the 2020 Summer Paralympics).

• The United States topped the medal tally of the Summer Olympics 2021 with 39 golds.

• The People's Republic of China stood in second place with a total of 38 gold medals.

• And Japan was third with a total of 27.

• India's rank in the summer Olympic 2021 was 48th.

Q45. Answer: (d) 1^(st) July 2022

Correct Answer 1st July 2022

Key PointsImplementation Timeline:

• The ban on single-use plastic items with low utility was implemented in a phased manner.

• The prohibition on identified single-use plastic items came into effect from 1st July 2022, as per the Plastic Waste Management Amendment Rules, 2021.

Thickness Restrictions for Plastic Carry Bags:

• The Plastic Waste Management Rules also include restrictions on the thickness of plastic carry bags.

• Plastic carry bags with a thickness of less than seventy-five microns were prohibited from 30th September 2021, and bags with a thickness less than one hundred and twenty microns were banned from 31st December 2022.

Q46. Answer: (c) 1000 and 2000

The correct answer is 1000 and 2000.

Key Points

• The wet temperate type of forests are typically found at higher elevations.

• The correct range for the height of wet temperate forests is between 1000 and 2000 meters.

• Wet temperate forests are characterized by high levels of precipitation and moderate temperatures.

• These forests are typically located in regions with cool, humid climates.

• They are known for their diverse plant and animal species and dense vegetation.

Additional Information

• Wet temperate forests:

• These are a type of forest ecosystem that exists in regions with temperate climates and high levels of rainfall.

• They are particularly common in mountainous areas, where the elevation provides the cool temperatures that these forests require.

• Wet temperate forests are known for their high biodiversity, including numerous species of trees, undergrowth plants, and animals.

• In addition to the general characteristics of wet and cool climate, these forests often have unique features depending on their

YourMockTest.com — Free Study Material

specific location and local conditions.

Q47. Answer: (a) 1916

The correct answer is 1916.

Key Points

• The Lucknow Pact was signed by the All India Muslim League and the Indian National Congress in 1916.

• The Lucknow Pact was a significant event in the Indian National Movement.

• It marked the reunion of the moderate and extremist factions of the Congress, which had split in 1907.

• This agreement brought the Muslim League and the Indian National Congress closer.

• They agreed to work together to put pressure on the British Government to grant more political power to Indians.

• The pact recognized separate electorates for Muslims in provinces where they were a minority, which was a significant demand of the Muslim League.

• The pact was also significant in that it proposed the idea of granting more autonomy to the provinces, which eventually laid the groundwork for India's federal structure post-independence.

Additional Information

Year	Event
1911	The 26th session of the Indian National Congress was held in Calcutta. It was presided by Bishan Narayan Dar. This session opposed the partition of Bengal.
1906	The 21st session of the Indian National Congress was held in Calcutta. Dadabhai Naoroji, one of the founders of the Indian National Congress, presided over it. This session was significant because it adopted 'Swaraj' (Self-rule) as the goal of the Indian National Congress.
1919	The Indian National Congress, under the presidency of Motilal Nehru, committed itself to fight for dominion status and the Montagu-Chelmsford reforms were adopted. In response to the Jallianwala Bagh massacre, the Congress initiated widespread protests.

Q48. Answer: (c) Vishnu

The correct answer is Vishnu.

Key Points

• Mohiniyattam is a classical dance form from Kerala, India.

• The term "Mohiniyattam" translates to "dance of the enchantress."

• The dance form gets its name from the Hindu God Vishnu.

• In Hindu mythology, Mohini is a female avatar of Lord Vishnu.

• Mohiniyattam reflects the theme of love and devotion, where the dancer often plays the role of Mohini, who is the amorous and devoted heroine.

• Mohini, the divine enchantress, is often depicted as seductive, beautiful, and capable of mesmerizing those who she wishes to influence.

• The dance form is characterized by graceful and gentle movements, and it is traditionally performed solo by women.

Additional Information

God	Relation to Dance
Kartikeya	Kartikeya, also known as Murugan, is often associated with Tamil folk dance forms like "Kavadi Attam," performed in honour of him.
Shiva	Shiva, as Nataraja, is known as the Lord of Dance. The dance form Tandava symbolizes the cosmic cycles of creation and destruction, as well as the daily rhythm of birth and death. One of the classical Indian dances, Bharatanatyam, draws heavily from the dance poses held by the cosmic dancer Shiva.

YourMockTest.com — Free Study Material

Krishna	Krishna, an avatar of Vishnu, is associated with the classical dance form of Kathak and the folk dance form of Raas Leela or Raas Lilas, which portray his early life, love-play with Radha, and his flirtatious interactions with the Gopis.

Q49. Answer: (b) Shelter belts

The correct answer is Shelter belts.

Key Points

• Shelter belts are rows of trees and shrubs planted to protect soil from wind erosion, particularly in coastal and arid regions.

• These tree lines reduce wind speed across the ground and thereby decrease the wind's ability to lift and carry soil particles away, combating wind erosion effectively.

• Apart from reducing wind erosion, shelter belts also offer additional benefits like providing habitat for wildlife, sequestering carbon, and enhancing the landscape's aesthetics.

• This method is quite common in flat, dry regions where wind erosion is a major issue, such as parts of North America, Africa, and Asia.

• Shelter belts can take the form of single or multiple rows of trees or shrubs, depending on the severity of the wind erosion problem.

Additional Information

• Mulching:

• Mulching involves covering the soil surface with a layer of organic or inorganic material (like straw, leaves, compost, or plastic sheets).

• This technique retains soil moisture, suppresses weed growth, and can also prevent soil erosion by reducing the impact of raindrops on the soil surface.

• Rock Dam:

• Rock dams are barriers built across channels, gullies, or small waterways using rocks.

• They slow down the flow of water, reduce its erosive power and trap sediments.

• This technique is commonly used in mountainous regions or areas prone to flash floods and gully erosion.

• Contour Barriers:

• Contour barriers are physical barriers like stones, vegetation, or soil bunds constructed along the contours of a slope.

• They slow down water runoff, promote water infiltration, and reduce soil erosion by water.

• This method is typically used on sloping land in both farming and forestry.

Q50. Answer: (d) Metabolism

The correct answer is Metabolism.

Key Points

• Metabolism is the set of life-sustaining chemical reactions in organisms.

• It involves various chemical reactions that occur in the cells to maintain the living state of the organism.

• These reactions are organized into metabolic pathways, in which one chemical is transformed through a series of steps into another chemical, by a sequence of enzymes.

• Metabolism is divided into two categories: catabolism, the breaking down of compounds to produce energy; and anabolism, the construction of compounds, which uses energy.

• Metabolism involves the transfer of energy from one form to another, and the conversion of substances into other substances in various metabolic pathways.

• The rate of metabolism affects the amount of food and the type of food that an organism will need; it also affects the physical characteristics of an organism, such as size and shape.

Additional Information

Option	Description
Transportation	In the context of biology, transportation refers to the movement of substances like nutrients, oxygen, and waste products to and from cells in the body. This can occur through processes such as diffusion, osmosis, or active transport.

YourMockTest.com - Free Study Material

Respiration	This is the process by which organisms exchange gases with their environment. In cellular respiration, oxygen is used to break down glucose, providing energy in the form of ATP and producing carbon dioxide as a byproduct.
Excretion	This is the process by which waste products of metabolism and other non-useful materials are eliminated from an organism. In humans, this primarily occurs via the kidneys, which filter blood and produce urine.

Q51. Answer: (b) 2475

Concept Used:

The sum (S) of an arithmetic sequence can be calculated using the formula:

$S = n/2 \times (a + l)$

where:

S is the sum of the sequence,

n is the number of terms,

a is the first term, and

l is the last term.

The number of terms (n) in an arithmetic sequence can be found using the formula:

n = (last term - first term)/difference + 1

Calculation:

Two-digit odd numbers range from 11 to 99. Since they are odd, they increase by a difference of 2 each time, forming an arithmetic sequence.

Number of terms (n):

$n = (99 - 11)/2 + 1 = 44 + 1 = 45$

Sum of an arithmetic sequence:

$S = 45/2 \times (11 + 99) = 22.5 \times 110 = 2475$

Therefore, the sum of all two-digit odd numbers is 2475.

Therefore Option 2 is the correct answer.

Q52. Answer: (b) 4/7

Given:

The numerator is increased by 140% and denominator is decreased by 20%

The resultant fraction is 12/7.

Calculation:

Let the original fraction be x/y%

According to the question,

(x + 140% of x)/(y - 20% of y) = 12/7

12x/4y = 12/7

x/y = 4/7

Therefore Option 2 is the correct answer.

Q53. Answer: (c) 10 percent

Given:

Principal = Rs. 3000

Amount = Rs. 6000

Concept Used:

Simple Interest = PRT/100

Simple Interest = Amount - Principal

Calculation:

Let the rate of interest be r% and as the time is equal to rate of interest.

So, time = r years

Simple Interest = Amount - Principal

Simple Interest = 6000 - 3000 = Rs. 3000
Simple Interest = PRT/100
3000 = 3000 × r × r/100
$r^2 = 100$
r = 10
Annual rate of interest = 10%
Therefore Option 3 is the correct answer.

Q54. Answer: (d) Rs. 864

Shortcut Trick
Profit 33.33% is equivalent to 1/3 in fraction, so SP is 4/3 of CP.
4 units → Rs. 960 => 1 unit → Rs. 240 => CP (3 units) → Rs. 720.
For 20% profit, multiplier is 1.2 or 6/5.
New SP → 720 × (6/5) → 144 × 6 → Rs. 864.
Therefore The correct answer is Rs. 864.
Alternate Method
Given: Initial Selling Price (SP1) = Rs. 960, Initial Profit% = 33.33%, Target Profit% = 20%.
Formula Used: CP = [SP × 100] / [100 + Profit%] | New SP = CP × [(100 + New Profit%) / 100]
=> First, calculate CP using the initial Profit (33.33% = 1/3):
=> CP = 960 ÷ (1 + 1/3) = 960 × (3/4)
=> CP = 240 × 3 = Rs. 720
=> Now, calculate New Selling Price for 20% Profit:
=> New SP = 720 × (100 + 20) / 100
=> New SP = 720 × 1.2 = Rs. 864
Therefore The correct answer is Rs. 864.
Additional Information
Fraction to Percentage Conversion
Common fractions simplify calculations: 33.33% = 1/3, 25% = 1/4, 20% = 1/5, and 16.66% = 1/6.
Profit and Loss Fundamentals
Profit % = (Profit/CP) × 100. If SP > CP, it is Profit; if SP < CP, it is Loss.
Direct Proportion Method
Since CP is constant, SP1 / (100 + P1) = SP2 / (100 + P2). This allows finding the second SP without calculating CP.

Q55. Answer: (c) Rs. 48

Shortcut Trick
Equivalent discount percentage = 20 + 10 − (20 × 10)/100 = 28%.
Given, 28% of Marked Price = Rs. 252.
1% of MP = 252 ÷ 28 = Rs. 9 => 100% (MP) = Rs. 900.
Selling Price (SP) = MP − Discount = 900 − 252 = Rs. 648.
Profit = SP − CP = 648 − 600 = Rs. 48.
Therefore The correct answer is Rs. 48.
Alternate Method
Given: Successive discounts = 20% and 10%; Total discount value = Rs. 252; Cost Price (CP) = Rs. 600.
Formula Used: Single equivalent discount = a + b − (a × b / 100); Profit = SP − CP.
=> Net discount percentage = 20 + 10 − (20 × 10 ÷ 100) = 28%
=> Let Marked Price be MP. 28% of MP = 252
=> MP = (252 × 100) ÷ 28 = Rs. 900
=> Selling Price (SP) = MP − Discount = 900 − 252 = Rs. 648
=> Profit = Selling Price − Cost Price
=> Profit = 648 − 600 = Rs. 48
Therefore The correct answer is Rs. 48.
Additional Information

Successive Discounts

When multiple discounts are applied one after another, the net discount is less than the sum of individual discounts. Formula: Net D% = a + b − ab/100.

Marked Price (MP)

It is the price printed on the item. Discount is always calculated on the Marked Price unless stated otherwise.

Profit Percentage

Profit% = (Profit ÷ CP) × 100. It represents the gain earned over the initial investment (Cost Price).

Q56. Answer: (d) 25

Shortcut Trick

To find the sum of squares ($a^2 + b^2 + c^2$), subtract twice the pair-wise product sum from the square of the total sum.

Total Sum squared → $7^2 = 49$

Twice Product Pairs → $2 \times 12 = 24$

Required Value → $49 - 24 = 25$

Therefore The correct answer is 25.

Alternate Method

Given:

Sum of variables $(a + b + c) = 7$

Sum of product pairs $(ab + bc + ca) = 12$

Formula Used:

The standard algebraic Trinomial Identity: $(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca)$

Calculations:

$\Rightarrow (7)^2 = (a^2 + b^2 + c^2) + 2 \times 12$

$\Rightarrow 49 = (a^2 + b^2 + c^2) + 24$

$\Rightarrow a^2 + b^2 + c^2 = 49 - 24$

$\Rightarrow a^2 + b^2 + c^2 = 25$

Therefore The correct answer is 25.

Additional Information

Trinomial Square Expansion

The expansion of $(a + b + c)^2$ always results in the sum of individual squares plus twice the sum of all possible product pairs.

Sum of Cubes Identity

$a^3 + b^3 + c^3 - 3abc = (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$. This formula often utilizes the result of the trinomial square.

Alternative Square Relation

$a^2 + b^2 + c^2 - ab - bc - ca = 1/2 [(a - b)^2 + (b - c)^2 + (c - a)^2]$, which is useful for proving non-negativity.

Q57. Answer: (c) 32 cm²

Given:

The area of quadrilateral MBCN = 130 cm².

AN : NC = 4 : 5

Calculation:

Hence, AC = 4 + 5 = 9

In ΔABC, If MN||BC, then

Area of ΔAMN/area of ΔABC = $(AN/AC)^2$

Area of ΔAMN/area of ΔABC = $(4/9)^2 = 16/81$

Area of ΔAMN = 16 unit and area of ΔABC = 81 unit

Now, the Area of quadrilateral MBCN = area of ΔABC - area of ΔAMN

=> 81 - 16 unit = 130 cm2

=> 65 unit = 130 cm2

=> 1 unit = 130/65 = 2 cm2

Therefore Area of ΔAMN = 16 × 2 = 32 cm²

YourMockTest.com — Free Study Material

Q58. Answer: (b) 22

Given:

a + b + c = 0 and ab + bc + ca = -11

Formula Used:

(a + b + c)2 = a2 + b2 + c2 + 2 (ab + bc + ca)

Calculation:

According to the formula used

=> (0)2 = a2 + b2 + c2 + 2 × (-11)

=> 0 = a2 + b2 + c2 - 22

=> a2 + b2 + c2 = 22

Therefore Option 2 is the correct answer.

Q59. Answer: (b) 48 cm²

Given:

Altitude of a triangle is 8 cm.

Corresponding base is 12 cm.

Concept Used:

Area of triangle = 1/2 × base × corresponding height

Calculation:

Area of triangle = 1/2 × base × corresponding height

=> 1/2 × 12 × 8

=> 48 cm²

Therefore Option 2 is the correct answer.

Q60. Answer: (c) 50 degree

Given:

In ΔXYZ, I is the incentre.

angle YIZ = 115°

Concepts used:

Angle formed at incentre opposite to given side = 90° +(½ × angle opposite to given side)

Calculation:

In ΔXYZ, I is the incentre

angle YIZ = 90° + (½ × angle YXZ)

=> 115 = 90° + (½ × angle YXZ)

=> (½ × angle YXZ) = 115 - 90

=> (½ × angle YXZ) = 25

=> angle YXZ = 25 × 2 = 50°

Therefore Measure of angle YXZ is equal to 50°.

Q61. Answer: (b) cot of that angle

Calculation:

If we have an angle θ, then the tangent of its complementary angle (90° - θ) is equal to the cotangent of θ.

Mathematically, we can express this as:

tan(90° - θ) = cot(θ)

So, the tangent of the complementary angle is equal to the cotangent of the original angle.

Therefore Option 2 is the correct answer.

Q62. Answer: (d) 0

Given:

15 - 3 of 12 ÷ 2 + 3 of 2 ÷ 2

Concept used:

Follow the BODMAS rule according to the table given below:

Calculation:

YourMockTest.com — Free Study Material

15 - 3 of 12 ÷ 2 + 3 of 2 ÷ 2
=> 15 - 36 ÷ 2 + 6 ÷ 2
=> 15 - 18 + 3
=> 0
Therefore Option 4 is the correct answer.

Q63. Answer: (b) 8 : 3

Given:-
45% of Number1 = 6/5 of Number2
Calculation:-
Let Number1 be A, and Number2 be B
=> (45/100) × A = (6/5) × B
=> A : B = (6 × 100) : (5 × 45)
=> A : B = 8 : 3
Therefore Option 2 is the correct answer.

Q64. Answer: (d) I and II

Calculation:
The production of truck by company L in year Y1 = 60
The production of company M in year Y1 = 25
Percentage of the production of truck by company L in year Y1 to the production of company M in year Y1 = 60/25 × 100 = 240%
Statement I is not correct.
The production of truck by company L in year Y4 = 15
The production of truck by company M in year Y4 = 50
Ratio = 15 : 50 = 3 : 10
Statement II is not correct
The average production of truck by company L in year Y2 and Y3 = (40 + 20)/2 = 30
Statement III is correct.
Therefore Option 4 is the correct answer.

Q65. Answer: (a) 2002 m²

Shortcut Trick
Difference in Area = $(C2^2 - C1^2) / 4\pi$
Area Difference = (C2 + C1) × (C2 − C1) × 7 / 88
Area Difference = (308 + 264) × (308 − 264) × 7 / 88
Area Difference = 572 × 44 × 7 / 88 = 572 × 7 / 2 = 286 × 7 = 2002 m².
Therefore The correct answer is 2002 m².
Alternate Method
Given:
Circumference of small circle (C1) = 264 m
Circumference of large circle (C2) = 308 m
Formula Used:
Circumference = 2 × π × r
Area = $\pi \times r^2$
Calculations:
=> 2 × (22/7) × r1 = 264
=> r1 = (264 × 7) / 44 = 6 × 7 = 42 m
=> 2 × (22/7) × r2 = 308
=> r2 = (308 × 7) / 44 = 7 × 7 = 49 m
=> Difference in Area = $\pi \times (r2^2 - r1^2)$
=> Difference = $(22/7) \times (49^2 - 42^2)$
=> Difference = (22/7) × (49 + 42) × (49 − 42)
=> Difference = (22/7) × 91 × 7

=> Difference = 22 × 91 = 2002 m²

Therefore The correct answer is 2002 m².

Additional Information

Area of Circle

The space occupied by a circle in a 2D plane is given by the formula Area = πr² or Area = πd²/4.

Circumference to Radius

The distance around the circle is Circumference = 2πr. Thus, the radius can always be found as r = C / 2π.

Area of a Ring (Annulus)

The area between two concentric circles with radii R and r is Area = π(R² − r²) = π(R + r)(R − r).

Q66. Answer: (d) 3/5

Shortcut Trick

Convert cot 70° to its complementary ratio: cot 70° = tan 20°.

The expression becomes (3/5) × (sec² 20° − tan² 20°).

Apply the standard identity: sec² θ − tan² θ = 1.

Calculation: (3/5) × 1 = 3/5.

Therefore The correct answer is 3/5.

Alternate Method

Given:

Expression = (3/5) (sec² 20° − cot² 70°)

Formulas Used:

1. Complementary Angle Rule: cot(90° − θ) = tan θ

2. Trigonometric Identity: sec² θ − tan² θ = 1

Calculations:

=> cot 70° = cot(90° − 20°)

=> cot 70° = tan 20°

=> cot² 70° = tan² 20°

=> Substitute in expression: (3/5) × (sec² 20° − tan² 20°)

=> From identity, sec² 20° − tan² 20° = 1

=> Value = (3/5) × 1 = 3/5

Therefore, the calculation leads to Option 4.

Therefore The correct answer is 3/5.

Additional Information

Trigonometric Pythagorean Identities

Standard relations include sin² θ + cos² θ = 1 and cosec² θ − cot² θ = 1.

Complementary Angle Relations

For any angle θ, sin θ = cos(90°−θ), tan θ = cot(90°−θ), and sec θ = cosec(90°−θ).

Reciprocal Identities

sec θ = 1/cos θ, cosec θ = 1/sin θ, and cot θ = 1/tan θ.

Q67. Answer: (c) 11 : 20

Calculation:

Total population of B in year R, S and T = 200 + 250 + 100 = 550

Total population of A in year P, Q and R = 250 + 450 + 300 = 1000

Ratio = 550 : 1000

=> 11 : 20

Therefore Option 3 is the correct answer.

Q68. Answer: (c) 60 km

Shortcut Trick

Ratio of speeds = 60 : 30 = 2 : 1

Since distance is constant, Time ratio = 1 : 2 (Inverse of speed ratio)

Difference in time ratio units = 2 − 1 = 1 unit

According to the question, 1 unit = 1 hour
Time taken for the first journey = 1 unit = 1 hour
Distance = Speed × Time = 60 km/hr × 1 hr = 60 km
Therefore The correct answer is 60 km.
Alternate Method
Given:
Outward Speed (S1) = 60 km/hr
Return Speed (S2) = 30 km/hr
Difference in time (Δt) = 1 hour
Formula Used:
Distance = [(S1 × S2) ÷ (S1 − S2)] × Δt
Calculations:
=> Distance = [(60 × 30) ÷ (60 − 30)] × 1
=> Distance = [1800 ÷ 30] × 1
=> Distance = 60 × 1
=> Distance = 60 km
Therefore The correct answer is 60 km.
Additional Information
Average Speed
When equal distances are covered at speeds x and y, Average Speed = (2 × x × y) ÷ (x + y).
Speed-Distance-Time Relationship
Speed is directly proportional to Distance when Time is constant, and inversely proportional to Time when Distance is constant (S prop. to 1/T).
Unit Conversion
To convert km/hr to m/s, multiply the speed by 5/18. To convert m/s to km/hr, multiply by 18/5.

Q69. Answer: (a) 38.5 cm²

Let radius be r,
Given circumference = 2πr = 22
=> r = 22/2π = 7/2 cm
Area can be given as πr²
=> Area = π(3.5)²
=> Area = 22/7 × 12.25
=> Area = 38.5 cm2
Therefore The area of circle is 38.5 cm²
Therefore Option 1 is the correct answer.

Q70. Answer: (d) 2019

Calculation:
Production of rice in 2017 = 2000
Production of rice in 2018 = 3500
Production of rice in 2019 = 4000
Production of rice in 2020 = 2500
Production of rice in 2021 = 1500
Production of rice is maximum in 2019.
Therefore Option 4 is the correct answer.

Q71. Answer: (b) 35

Given:
The average marks scored by three students were 55.
When two more students (A and B) were added, the average marks decreased by 5 (i.e., the new average is 50).
Student B scored 15 marks more than student A.
Formulas Used:

Average = Sum of observations / Number of observations
Calculation:
A = marks scored by student A
B = marks scored by student B
Sum of the marks scored by the first three students is 55 × 3 = 165 marks.
The total marks scored by the five students = 50 × 5 = 250 marks.
We also know that B scored 15 marks more than A, so B = A + 15.
Now,
165 + A + B = 250
Substituting B = A + 15 into this equation, we get:
165 + A + A + 15 = 250
Solving for A:
2A = 250 - 165 - 15
2A = 70
A = 70 / 2
A = 35
So, student A scored 35 marks.
Therefore Option 2 is the correct answer.

Q72. Answer: (a) 8 days

Given:
A completes work in 40 days.
Concept Used:
Work = Rate × Time
Calculation:
A's rate is 1/40 of the work per day.
Time for 20% of work is: Time = 0.20 / (1/40) = 8 days.
So, A takes 8 days to complete 20% of the work.
Therefore Option 1 is the correct answer.

Q73. Answer: (b) 65 : 56

Calculation:
The number of N98 masks produced in January 2021 and April 2021 together = 6.2 + 6.8 = 13
The number of N95 masks produced in January 2021, March 2021 and May 2021 together = 2.5 + 3.2 + 5.5 = 11.2
Ratio = 13 : 11.2
=> 65 : 56
Therefore Option 2 is the correct answer.

Q74. Answer: (d) 52

Given:
$p2 + 1/(p^2) = 14$
Concept used:
If $(a + 1/a) = k$
Then,
$a3 + 1/(a^3) = k3 - 3k$
Calculation:
$p2 + 1/(p^2) = 14$
By adding 2 in both sides
$p2 + 1/(p^2) + 2 = 14 + 2$
$=> (p2 + 1/(p^2))^2 = 16$
$=> p + 1/p = 4$
Now,
$p3 + 1/(p^3) = 4^3 - 3 \times 4$

=> 64 - 12

=> 52

Therefore The required answer is 52.

Q75. Answer: (d) 1

Formula used:

1 - $\sin^2\theta = \cos^2\theta$

$\cos\theta/\sin\theta = \cot\theta$

$\text{cosec}\,\theta = 1/\sin\theta$

$1 + \cot^2\theta = \text{cosec}^2\theta$

Calculation:

Given that

sin4x + sin2x = 1

=> sin^4x = 1 - $\sin^2 x$

=> sin4x = cos2x

=> $\sin^2 x = \cos^2 x/\sin^2 x$

=> $\sin 2x = \cot^2 x$

=> sin^4x = cot^4x

Now the required value

=> cot4x + cot2x = 1

Therefore Option 1 is the correct answer.

Q76. Answer: (d) An expression of surprise or frustration

The solution is in Hindi. Read it online.

Q77. Answer: (a) Diffidence

The solution is in Hindi. Read it online.

Q78. Answer: (b) CABD

The correct answer is 'Option 2'.

Key Points

• The correct sequence to form a meaningful and grammatically correct sentence is CABD.

• C. "The Ramayana is one of the largest ancient epics in world literature." This part sets up the topic of the sentence, which is the Ramayana.

• A. "It consists of nearly 24,000 verses divided into seven Khanda (parts)" This provides specific details about the structure of the Ramayana, following logically from the introduction of the Ramayana as the topic.

• B. "the first and the seventh being later additions." This provides additional detail about the structure of the Ramayana, specifically the first and seventh parts.

• D. "It belongs to the genre of Itihasa, narratives of past events, interspersed with teachings on the goals of human life." This is a general statement about the Ramayana's genre and thematic content, which serves as a suitable conclusion to the sentence.

Therefore, the correct and meaningful sentence is: "The Ramayana is one of the largest ancient epics in world literature. It consists of nearly 24,000 verses divided into seven Khanda (parts), the first and the seventh being later additions. It belongs to the genre of Itihasa, narratives of past events, interspersed with teachings on the goals of human life."

Q79. Answer: (d) CBDA

The correct answer is 'Option 4'.

Key Points

• The correct sequence to form a meaningful and grammatically correct sentence is CBDA.

• C. "Mr. Summers spoke frequently to the villagers about making a new box, but no one" - This part introduces the subject, Mr. Summers, and what he often talks about to the villagers, hinting at an ongoing issue about a box.

• B. "liked to upset even as much tradition as was represented by the black box." - This part provides the reason why the villagers don't want to make a new box, as the existing black box represents a certain tradition.

• D. "There was a story that the present box had been made with some pieces of the box that had preceded it" - This part introduces additional information about the tradition of the box.

• A. "the one that had been constructed when the first people settled down to make a village here" - This part further describes the origin of the box, giving a full-circle explanation of the tradition and why it's respected.

YourMockTest.com — Free Study Material

Therefore, the correct answer is: 'CBDA'.

Q80. Answer: (c) only son, has had developed

The correct answer is 'Option 3'.

Key Points

• The part of the sentence that contains a grammatical error is: "only son, has had developed"

• The error lies in the verb tense.

• The correct verb form should be "had developed" or "has developed", but not "has had developed".

• The phrase "has had developed" is incorrect because it improperly combines the present perfect "has developed" and the past perfect "had developed".

Therefore, the correct sentence is: 'Ashwatthama, Drona's only son, has/had developed a fondness for lavish living'.

Q81. Answer: (b) Apiary

The solution is in Hindi. Read it online.

Q82. Answer: (a) Constant

The solution is in Hindi. Read it online.

Q83. Answer: (d) loading

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

Key Points

• The term "loading" refers to the action of placing items into a device or machine, such as a dishwasher.

• This makes it the appropriate word to use in this context.

Therefore, the correct sentence is: I dump the tray on the side and start loading up the dishwasher.

Additional Information

• Here's the explanation for the other options:

• Tantalizing - This word means to tease or make someone feel excited about something desirable, which isn't applicable in the context of the sentence.

• Upbringing - This refers to the way in which a person has been treated and educated while growing up. It's not related to any actions involving a dishwasher.

• Alienating - This means to cause someone to feel isolated or estranged, which again isn't relevant in this context.

Q84. Answer: (d) had to shoot

The correct answer is 'Option 4' i.e. 'Had to shoot'.

Key Points

• The sentence "The actors is to shoot the scene three times." is incorrect due to the verb agreement error.

• The verb "is" should be replaced by "had" to agree with the plural subject and given options.

• "had to shoot" - The sentence would then read: "The actors had to shoot the scene three times."

• This suggests that the actors were required to shoot the scene three times in the past.

Therefore, the correct sentence is: 'The actors had to shoot the scene three times.'

Additional Information

• Here's the explanation for the other options:

• "had to shooting" - This option is grammatically incorrect. The correct form after "had to" is the base form of the verb, so it should be "shoot," not "shooting".

• "has to shoot" - This form would be correct if the subject was singular (like "The actor"), but since the subject is plural ("The actors"), the correct verb form would be "have to shoot," not "has to shoot".

Q85. Answer: (d) PROMPT

The solution is in Hindi. Read it online.

Q86. Answer: (d) With his euphoria fading, Vikram asked who it was.

The correct answer is 'Option 4'.

Key Points

• In indirect speech, we often change the tense of the verb back one step in 'time'.

• This is known as 'backshifting'. Hence, the present tense "is" changes to the past tense "was".

• The noun "Vikram" remains the same as it is a proper noun, and the pronoun "it" remains the same because it's an object

YourMockTest.com — Free Study Material

pronoun that doesn't need to change when the speech becomes indirect.

• Also, in this sentence, "With his euphoria fading" is a perfect translation of "his euphoria fading" that allows for smoother sentence flow and better readability.

Therefore, the correct sentence is: 'With his euphoria fading, Vikram asked who it was.'

Q87. Answer: (d) and accommodating of

The correct answer is 'Option 4'.

Key Points

• Being "receptive" means being open and willing to consider new ideas, opinions, suggestions, or changes.

• To "accommodate to" something means to adapt or adjust oneself to a new or different situation, environment, or set of conditions.

• These terms are often used in tandem when discussing change, growth, and adaptability, both in personal development and in the workplace.

• Accommodate of" is not a correct phrase in English.

• However, we can use "accommodate" in sentences with "of," but it requires additional context or words.

Therefore, the correct sentence is: 'Democrats are often more receptive and accommodate to foreign people and cultures.'

Q88. Answer: (c) Pedestrian

The solution is in Hindi. Read it online.

Q89. Answer: (d) Systematic

The solution is in Hindi. Read it online.

Q90. Answer: (d) Plausible

The solution is in Hindi. Read it online.

Q91. Answer: (a) MINARET

The solution is in Hindi. Read it online.

Q92. Answer: (d) CONSCENT

The solution is in Hindi. Read it online.

Q93. Answer: (b) Chocolate is liked by Ravish.

The correct answer is 'Option 2'.

Key Points

• In the original sentence, "likes" is in the simple present tense, so we need to maintain the same tense in the passive voice.

• When changing a sentence from active to passive voice, the object of the active sentence (here "chocolate") becomes the subject of the passive sentence.

• The verb 'like' changes to 'is liked' to match the tense and the passive structure.

Therefore, the correct answer is: 'Chocolate is liked by Ravish.'

Additional Information

• Here's why the other options are incorrect:

• "Chocolate was liked by Ravish." - This uses the past tense ("was liked"), which changes the original tense of the sentence.

• "Chocolate were liked by Ravish." - This is grammatically incorrect because "were liked" should be used with plural subjects, and "chocolate" is singular.

• "Chocolate is being liked by Ravish." - The phrase "is being liked" suggests an ongoing action, which changes the tense and the meaning of the original sentence. "Like" is also a stative verb, which doesn't usually use continuous (progressive) tenses.

Q94. Answer: (d) To be extremely surprised

The solution is in Hindi. Read it online.

Q95. Answer: (d) significant

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

Key Points

• Significant - This option implies that the effect of Lecanemab was important or meaningful in reducing cognitive decline, even though it was small.

• "Significant" is often used in scientific or medical context to indicate a meaningful result.

YourMockTest.com — Free Study Material

Therefore, the correct sentence is: 'Lecanemab was recently reported to have a small but significant effect in reducing cognitive decline.'

Additional Information

• Here's the explanation for the other options:

• Optional - This word usually means "available as a choice but not obligatory". Using "optional" in this context doesn't make sense because it implies that the effect of Lecanemab could be chosen or not, which is not how medication works.

• Marginal - Although "marginal" can be used to describe a small effect, it often implies that the effect is so small that it's barely noticeable or important. This doesn't fit well in the sentence if the goal is to emphasize a positive impact of Lecanemab.

• Microscopic - This word literally refers to something extremely small, often so small that it can only be seen under a microscope. In this context, "microscopic" could be understood to mean a very small effect, but it does not carry the implication of importance or meaningfulness that "significant" does.

Q96. Answer: (c) looked

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

Key Points

• Looked - This option is the most appropriate choice because "looked" is typically used to describe someone's appearance or the impression they give.

• In the context of the sentence, "Narad looked harmless" means that Narad appeared harmless based on his physical appearance.

Therefore, the correct sentence is: With his slight build and his simple white clothes, Narad looked harmless, but he had quite a (2) _____. He had powerful family connections and was a (3) ____ devotee of Lord Vishnu. His favourite (4) ____ was to travel from court to court and world to world, collecting gossip and (5) _____ mayhem.

Additional Information

• Here's the explanation for the other options:

• Watched - This verb usually refers to the act of paying attention to something or someone, often for a period of time, and observing carefully. It's not typically used to describe someone's appearance, so it's not a good fit in this sentence.

• Saw - This is the past tense of "see", which is used when talking about perceiving by the eyes. It's not usually used to describe someone's appearance or how they come across to others, so it doesn't work well in this sentence.

• Observed - This verb is similar to "watched" and typically means to notice or perceive something and register it as being significant. However, like "watched", it's not typically used to describe someone's appearance, so it doesn't work well in this sentence.

Q97. Answer: (a) reputation

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

Key Points

• Reputation - In this context, "reputation" is the most suitable word because it can refer to the general belief or opinion that people have about someone.

• The phrase "he had quite a reputation" implies that Narad was well-known or notorious for something, which fits well in the narrative of the sentence.

Therefore, the correct sentence is: With his slight build and his simple white clothes, Narad looked harmless, but he had quite a reputation. He had powerful family connections and was a (3) _____ devotee of Lord Vishnu. His favourite (4) ____ was to travel from court to court and world to world, collecting gossip and (5) _____ mayhem.

Additional Information

• Here's the explanation for the other options:

• Disapproval - This word is used to show a lack of approval or agreement. However, it's not a suitable choice for this sentence because it doesn't make sense to say "he had quite a disapproval."

• Dismay - This term refers to a feeling of concern, distress, or disappointment. Saying "he had quite a dismay" is grammatically incorrect and doesn't fit the context of the sentence.

• Censure - This word means strong or vehement expression of disapproval, often in a formal context. Similar to "disapproval", it doesn't make sense in this context to say "he had quite a censure."

Q98. Answer: (d) formidable

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

Key Points

• Formidable - In this context, "formidable" is the most suitable word.

• It implies that Narad was greatly respected or feared for his devoutness because he was very intense or capable.

• So, "he was a formidable devotee of Lord Vishnu" makes sense and fits the context perfectly.

Therefore, the correct sentence is: With his slight build and his simple white clothes, Narad looked harmless, but he had quite a reputation. He had powerful family connections and was a formidable devotee of Lord Vishnu. His favourite (4) _____ was to travel from court to court and world to world, collecting gossip and (5) _____ mayhem.

Additional Information

• Here's the explanation for the other options:

• Brooding - This term typically refers to someone who is in deep thought about something that makes them unhappy or angry. In this context, it doesn't fit because Narad is described as a devotee, and brooding doesn't accurately describe his devotion.

• Pleasant - This adjective is used to describe something that is enjoyable or attractive. While a person can be a pleasant devotee, in the context of the sentence, it doesn't quite convey the intensity of Narad's devotion to Lord Vishnu.

• Peasant - This term refers to a poor farmer who owns or rents a small piece of land for cultivation. It is not related to the context of devotion or religious dedication, so it doesn't fit in this sentence.

Q99. Answer: (a) activity

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

Key Points

• Activity - In this context, "activity" is the most suitable choice as it refers to something that a person does regularly as a part of their life.

• "His favourite activity was to travel..." perfectly fits the narrative and context of the sentence.

Therefore, the correct sentence is: With his slight build and his simple white clothes, Narad looked harmless, but he had quite a reputation. He had powerful family connections and was a formidable devotee of Lord Vishnu. His favourite activity was to travel from court to court and world to world, collecting gossip and (5) _____ mayhem.

Additional Information

• Here's the explanation for the other options:

• Action - While this term can refer to something that a person does, it's more commonly used to refer to the process of doing something, especially when that process is connected to a larger task or goal. Here, "action" seems slightly less fitting than "activity" because it doesn't convey the sense of a regular, enjoyable pastime that "activity" does.

• Bustle - This word is typically used to refer to a state of great activity, often in a noisy or busy environment. It's not typically used to describe a single, specific action or hobby, which makes it less suitable for this sentence.

• Movement - This term has several meanings, but it's often used to refer to a group of people with a shared aim or a change in position or location of something. It doesn't quite fit the context of describing a favourite pastime.

Q100. Answer: (a) spreading

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

Key Points

• Spreading- The term "spreading" is the most suitable here as it refers to the act of extending or pushing out something over a larger area.

• In this context, "spreading mayhem" means Narad is causing confusion or disorder wherever he goes, fitting the narrative of the sentence perfectly.

Therefore, the correct sentence is: With his slight build and his simple white clothes, Narad looked harmless, but he had quite a reputation. He had powerful family connections and was a formidable devotee of Lord Vishnu. His favourite activity was to travel from court to court and world to world, collecting gossip and spreading mayhem.

Additional Information

• Here's the explanation for the other options:

• Scattering - This term typically refers to the action of throwing or dropping things loosely over an area. While "scattering mayhem" could make sense, it doesn't quite capture the deliberate nature of Narad's actions like "spreading" does.

• Diffusing - While diffusion can be used metaphorically to describe the spread of something (like a rumor or an idea), it doesn't quite convey the intentional, active aspect that "spreading" does. Diffusion is often a more passive or natural process, which doesn't suit the context as well here.

• Advancing - This term typically refers to moving forward in a purposeful way, often related to making progress or improvement. "Advancing mayhem" isn't a common or particularly clear phrase, making it a less suitable choice for this sentence.

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