SSC CHSL Previous Paper 22 (Held On: 10 July 2019 Shift 3) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2019 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Q1. Select the most appropriate option to fill in the blank.

The employees of our company are not _____ of their freedom.

(a) denied
(b) dissipated
(c) deprived
(d) deployed

Q2. Directions: Each of the following questions has underlined idioms/phrases. Each sentence is followed by four options. Choose the option that best describes the meaning of the underlined idiom/phrase.

Please come to the point, don't beat around the bush.

(a) avoid the topic
(b) hide behind a bush
(c) make excuses
(d) accept defeat

Q3. Select the most appropriate synonym of the given word.

WARY

(a) inattentive
(b) alert
(c) rash
(d) lax

Q4. Select the most appropriate antonym of the given word.

POROUS

(a) impermeable
(b) absorbent
(c) spongy
(d) permeable

Q5. Select the alternative that will improve the underlined part of the sentence in case there is no improvement select No improvement.

I experienced excruciating pain when the hammer fell on my foot.

(a) affable paining
(b) exciting pain
(c) strong pains
(d) No improvement

Q6. Select the correctly spelt word.

(a) controversy
(b) controdiction
(c) cunstruction
(d) contrapsion

Q7. Select the word which means the same as the group of words given.

The original inhabitants of a country

(a) immigrants
(b) residents
(c) aborigines
(d) slaves

Q8. Choose the option that is the indirect form of the sentence.

A new student said to me, "Where is the Principal's office?"

(a) A new student asked me where the Principal's office is.
(b) A new student asked me where is the Principal's office.
(c) A new student asked me where the Principal's office was.
(d) A new student said to me where the Principal's office was.

Q9. Select the most appropriate antonym of the given word.

Amass

(a) Heap
(b) Distribute
(c) Collect
(d) Horde

Q10. Select the alternative that will improve the underlined part of the sentence in case there is no improvement select No improvement.

The crowd wave feverishly when they saw their leader.

(a) No improvement
(b) wave well
(c) waving hard
(d) waved feverishly

Q11. Identify the segment in the sentence, which contains the grammatical error.

My grandmother has been lives in Shimla since her childhood days.

(a) My grandmother
(b) has been lives
(c) her childhood days
(d) in Shimla since

Q12. Directions: Each of the following questions has underlined idioms/phrases. Each sentence is followed by four options. Choose the option that best describes the meaning of the underlined idiom/phrase.

My aunt who orders everyone around is a pain in the neck.

(a) irritating
(b) short tempered
(c) curious
(d) argumentative

Q13. Choose the option that is the passive form of the sentence.

The chief guest gave prizes to the children.

(a) The children are given prizes by the chief guest.
(b) The children were given prizes by the chief guest.

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(c) The children were being given prizes by the chief guest.
(d) The children was given prizes by the chief guest.

Q14. Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order.

A. Then she does some gardening.
B. Finally before her mid morning nap, she eats a light breakfast.
C. My grandmother is an active eighty year old.
D. She begins her morning with meditation.

(a) CABD
(b) CDAB
(c) CDBA
(d) DCBA

Q15. Identify the segment in the sentence, which contains the grammatical error.

Very little metals are as precious as gold.

(a) as precious
(b) metals are
(c) as gold
(d) Very little

Q16. Select the most appropriate synonym of the given word.

RECEDE

(a) waver
(b) increase
(c) wane
(d) intensify

Q17. Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order.

A. Yes, first get us some fresh juice and some sandwiches.
B. May I take your order?
C. Not now, maybe a little later.
D. Sure. Would you like some coffee too?

(a) BADC
(b) BCDA
(c) CDBA
(d) ABCD

Directions

In the following sentence, a part of the sentence is underlined. Below are given alternatives to the underlined part, which may improve the sentence. Choose the correct alternative. In case no improvement is needed, choose the option 'No improvement'.

The two men bowed to each (1) ____ and parted. D'Artagnan found himself in a difficult (2) __. He was going to have to (3) __ three duels in a (4) __ of three hours. He thought, "If they kill me, (5) ____ I shall be killed by a Musketeer.

Q18. Select the most appropriate option to fill blank no. 1

(a) each
(b) other
(c) another
(d) self

Q19. Select the most appropriate option to fill blank no. 2

(a) relation
(b) station
(c) location

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(d) situation

Q20. Select the most appropriate option to fill blank no. 3

(a) figure out
(b) fix
(c) fight
(d) think out

Q21. Select the most appropriate option to fill blank no. 4

(a) place
(b) gap
(c) time
(d) matter

Q22. Select the most appropriate option to fill blank no. 5

(a) maximum
(b) even though
(c) at least
(d) least

Q23. Select the most appropriate option to fill in the blank.

The Prime Minister was _____ with a ceremonial welcome.

(a) expected
(b) extended
(c) initiated
(d) invited

Q24. Select the correctly spelt word.

(a) nesessary
(b) necessary
(c) necessery
(d) necassery

Q25. Select the word which means the same as the group of words given.

One who treats skin diseases

(a) dermatologist
(b) radiologist
(c) geologist
(d) cardiologist

GENERAL INTELLIGENCE

Q26. Three statements are given, followed by three conclusions numbered I, II and III. Assuming the zstatements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

All knifes are axes.

All axes are swords.

All saws are swords.

Conclusions:

I. All swords are knifes.

II. Some axes are saws.

III. No axe is saw.

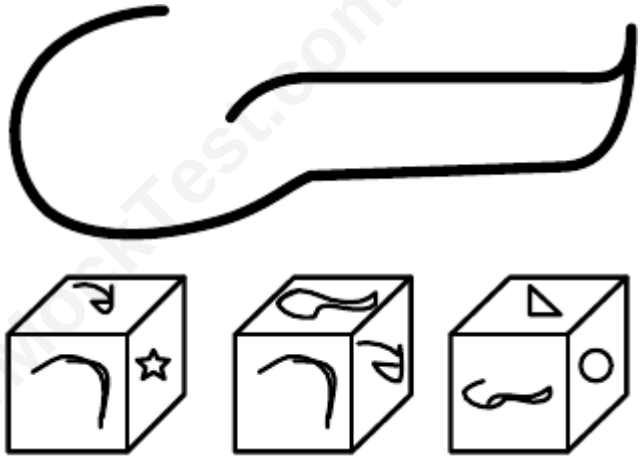
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(a) Only conclusion I follows.
(b) Only conclusions I and II follow.
(c) All the conclusions follow.
(d) Either conclusion II or III follows.

Q27. Three of the following four numbers are alike in a certain way and one is different. Pick the number that is different from the rest.

(a) 81
(b) 121
(c) 16
(d) 100

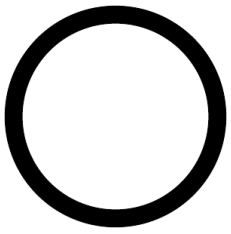
Q28. Three different positions of the same dice are shown. Select the pattern that will be on the face opposite to the one having



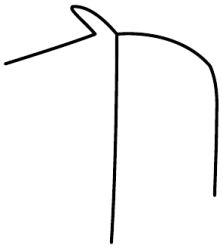
(a)



(b)

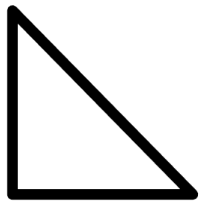


(c)



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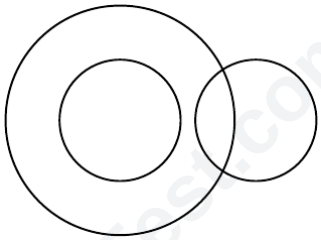
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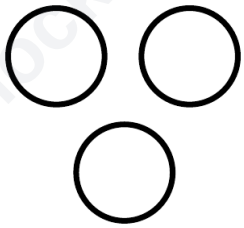
Q29. Select the Venn diagram that best illustrates the relationship between the following classes.

Wools, Wood, Leather

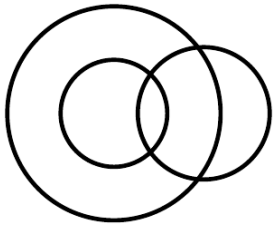
(a)



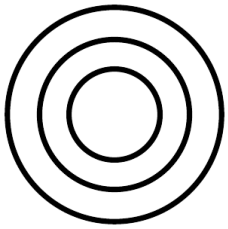
(b)



(c)



(d)



Q30. Arrange the following words in a logical and meaningful order.

1. Summer
2. Winter
3. Monsoon
4. Spring
5. Autumn

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

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(d) 4, 3, 1, 5, 2

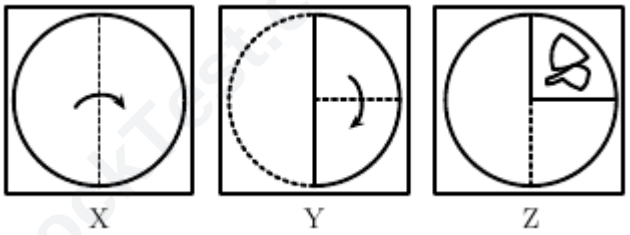
Q31. In a code language, HUSK is written as LZYR. How will SERIAL be written as in that language?

(a) WKYQJU
(b) WKYQJV
(c) WJXPIU
(d) WJXPUI

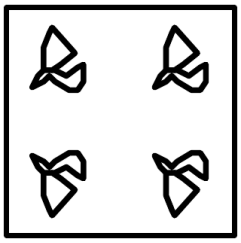
Q32. If it was a Friday on 1 January 2016, what was the day of the week on 31 December 2016?

(a) Monday
(b) Friday
(c) Sunday
(d) Saturday

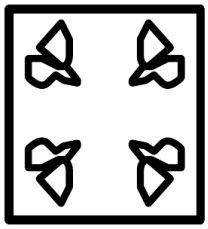
Q33. A paper is folded and cut as shown in the following figures (X, Y and Z). Select the option that depicts how this paper will appear when unfolded.



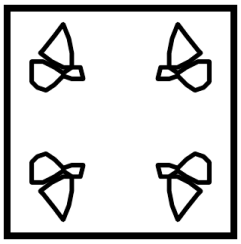
(a)



(b)

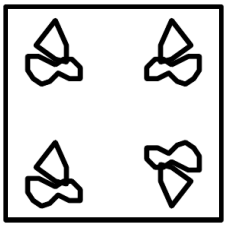


(c)



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(d)



Q34. If CAT is coded as 72 and TROT is coded as 292, then how will STAG be coded as?

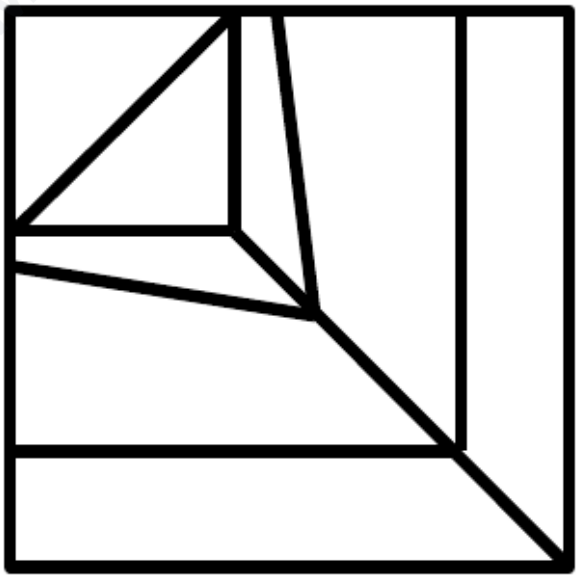
(a) 47
(b) 141
(c) 235
(d) 188

Q35. Which two signs should be interchanged in the following equation to make it correct?

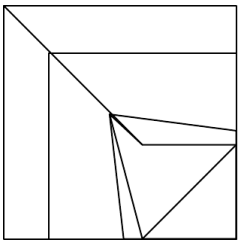
15 + 15 - 2 × 10 ÷ 35 = 16

(a) • and –
(b) × and –
(c) × and ÷
(d) • and ÷

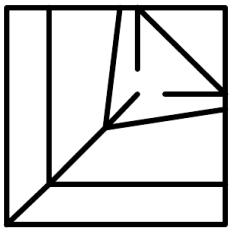
Q36. Select the correct mirror image of the given figure when the mirror is placed to the right of the figure.



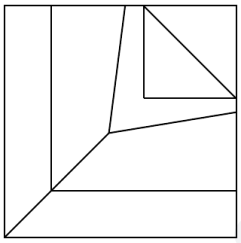
(a)



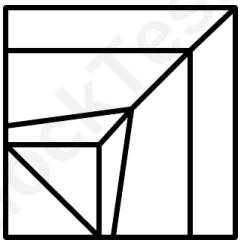
(b)



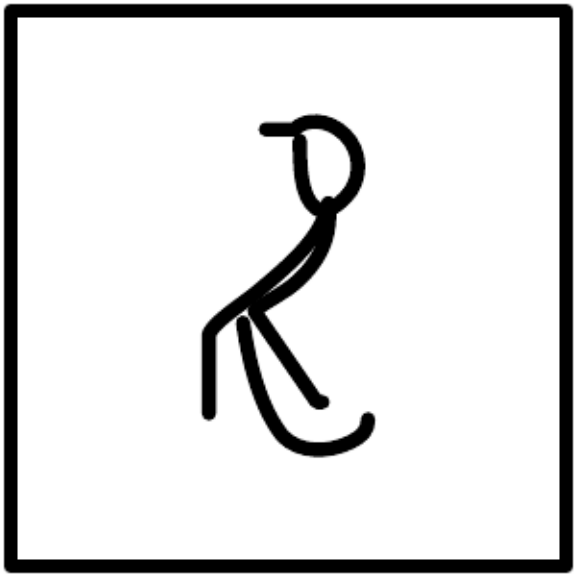
(c)



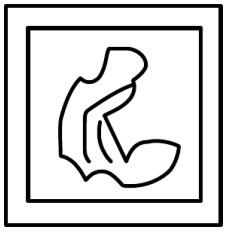
(d)



Q37. Select the option in which the given figure (X) is embedded (rotation not allowed).

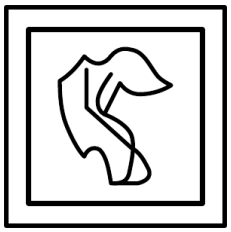


(a)



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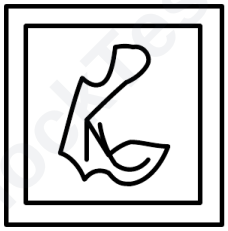
(b)



(c)



(d)



Q38. 'Machine' is related to 'Operator' in the same way as 'Car' is related to '_____'.

(a) Bus
(b) Driver
(c) Engine
(d) Mechanic

Q39. Select the option that is related to the third letter-pair in the same way as the second letter-pair is related to the first letter-pair.

PM : UT : : RU : ?

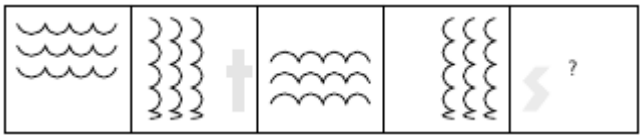
(a) XB
(b) XA
(c) WB
(d) WA

Q40. Select the word-pair in which the two words are related in the same way as are the two words in the following word-pair.

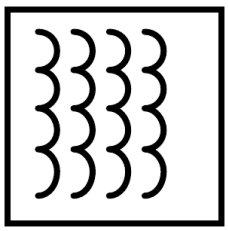
Trim : Hair

(a) Dog : Stag
(b) Prune : Shrub
(c) Nail : Face
(d) Eye : Red

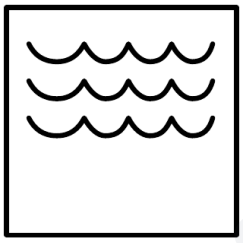
Q41. Select the Answer figure that will come next in the following Problem figure series.



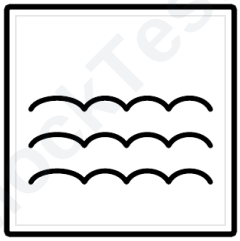
(a)



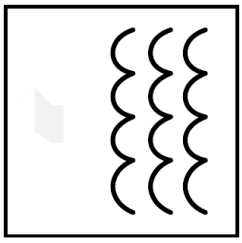
(b)



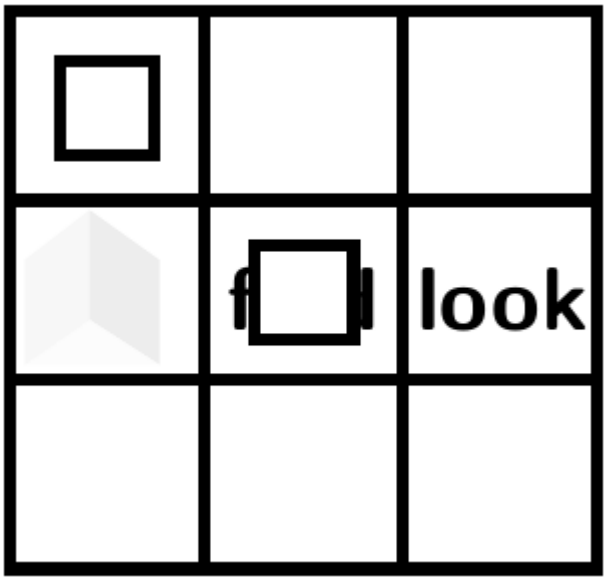
(c)



(d)



Q42. How many squares are present in the following figure?



(a) 18
(b) 14

(c) 12
(d) 16

Q43. Select the set in which the numbers are related in the same way as are the numbers of the following set.

(45, 49, 47)

(a) (5, 39, 44)
(b) (35, 59, 47)
(c) (15, 19, 37)
(d) (25, 54, 79)

Q44. Deepthi said to her friend, "That girl playing with the dog is the younger of the two sisters of the son of my mother's husband." How is the girl playing with the dog related to Deepthi?

(a) Wife
(b) Grand daughter
(c) Daughter – in – law
(d) Sister

Q45. Which number will replace the question mark (?) in the following series?

6, 12, 36,144, ?

(a) 720
(b) 420
(c) 520
(d) 620

Q46. Select the number-pair in which the two numbers are related in the same way as are the two numbers of the following number-pair.

42 : 56

(a) 23 : 44
(b) 35 : 51
(c) 12 : 20
(d) 17 : 50

Q47. Which letter-pair will replace the question mark (?) in the following series?

JG, LI, ?, VS, DA

(a) OR
(b) PQ
(c) QM
(d) PM

Q48. Three of the following four letter-clusters are alike in a certain way and one is different. Pick the odd one out.

(a) CGK
(b) NRV
(c) BFM
(d) LPT

Q49. Three of the following four words are alike in a certain way and one is different. Pick the odd word out.

(a) Disaster
(b) Cyclone
(c) Flood
(d) Storm

Q50. Select the set in which the numbers are related in the same way as are the numbers of the following set.

(64, 100, 328)

(a) (25, 49, 148)
(b) (49, 81, 137)

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(c) (16, 36, 54)
(d) (36, 64, 97)

QUANTITATIVE APTITUDE

Q51. A shopkeeper bought an article for Rs.100 and marked its price 25% above the cost price. How much discount percentage should be announcing in order to make a profit of 15%?

(a) 8
(b) 10
(c) 8.25
(d) 8.5

Q52. For α and β both being acute angles, it is given that
Sin(α + β) = 1, cos(α - β) = 1/2. The values of α and β are:

(a) 45°, 15°
(b) 60°, 30°
(c) 75°, 45°
(d) 75°, 15°

Q53. The area of a sector of a circle with central angle 60° is A. The circumference of the circle is C. Then A is equal to:

(a) $C^2/6\pi$
(b) $C^2/18\pi$
(c) $C^2/24\pi$
(d) $C^2/3\pi$

Q54. A borrowed a sum of Rs. 3000 from his friend B on 31 December 2007 on the condition that he would return the same after one year with simple interest at 15% per annum. However, A gets into a position of returning the sum on 31 august 2008. How much amount had A to return to B?

(a) Rs. 3,300
(b) Rs. 3,305
(c) Rs. 3,200
(d) Rs. 3,310

Q55. A milkman uses three containers for selling milk, their capacities being 40 L, 30 L and 20 L respectively. He fills respectively 87.5%, 80% and 90% of the containers with a mix of milk and water in the ratios, 3 : 2, 5 : 1 and 7 : 2 respectively. What is the ratio of the total quantity of milk to that of water carried by him?

(a) 35 : 9
(b) 3 : 12
(c) 5 : 2
(d) 7 : 2

Q56. OABC is a quadrilateral, where O is the centre of a circle and A, B, C are points on the circle, such that angle ABC = 120°. What is the ratio of angle AOC to the angle OAC?

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

Q57. Given that the length of the paths of ball thrown with different speeds by two boys are the same, and that the average speed for the first and second throws are respectively 90 km/h and 162 km/h. then what is the time taken by the first throw to cover the length of the same for the second thrown in one second?

(a) 2/3 sec
(b) 1 sec
(c) 9/5 sec
(d) 3/2 sec

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Q58. Which among the following numbers is exactly divisible by 11, 13 and 7?

(a) 259259
(b) 259237
(c) 259270
(d) 259248

Q59. The simplified value of => 1/2 of 8/5÷ {21/5-(5/16+ 3/5× 1 7/8÷ 2/3)} is:

(a) 15
(b) 4
(c) 14
(d) 5

Q60. If X = 1/(12 × 13) + 1/(13 × 14) + 1/(14 × 15) + …… + 1/(23 × 24) and Y = 1/(36 × 37) + 1/(37 × 38) + 1/(38 × 39) …… + 1/(71 × 72) then X/Y is equal to:

(a) 172
(b) 3
(c) 13
(d) 124

Q61. The simplified value of 0.01404/(24^2+ 6^2– 144) is:

(a) 3 × 10^(- 4)
(b) 6 × 10^(- 5)
(c) 3 × 10^(- 5)
(d) 2.4 × 10^(- 4)

Q62. If θ = 9°, then what is the value of

Cot θ cot 2 θ cot 3 θ cot 4 θ cot 5 θ cot 6 θ cot 7 θ cot 8 θ cot 9 θ ?

(a) 13
(b) 3 - 1
(c) 1
(d) 3

Q63. An article is subject to two successive discounts of 10% and 5% before being sold. If its marked price is Rs. 800, then its selling price is:

(a) Rs. 722
(b) Rs. 703
(c) Rs. 684
(d) Rs. 680

Q64. If $a^2 + b^2 = 169$, ab = 60, (a > b), then ($a^2 – b^2$) is equal to:

(a) 149
(b) 139
(c) 119
(d) 129

Q65. The difference between the average of first ten prime numbers and the first ten prime numbers of two digits is:

(a) 13.5
(b) 14.5
(c) 12.5
(d) 16.5

Q66. It is given that men are twice as efficient than women in respect of doing a work. If three men and two women can complete the work in 2 days, then in how many days can a woman working alone complete the work?

(a) 8
(b) 16

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(c) 13
(d) 12

Q67. A rectangular portion of an airport runway was getting repaired for which an estimate was made on the basis of a rate Rs. Per square unit. But while doing the work, the length of the portion got increased by 10% and the breadth by 8%. Over and above this, there was an increase in the cost of the repair work to the extent of 15%. What was the overall percentage increase in the cost of repair over the estimate?

(a) 36.62
(b) 34.58
(c) 33
(d) 35.24

Q68. It is given that, $\sqrt{((1 - \sin x))/((1 + \sin x))} = a - \tan x$ then α is equal to:

(a) cosecx
(b) cosx
(c) secx
(d) sinx

Q69. It is given that ΔABC ~ ΔPRQ and that Area ABC : Area PRQ = 16 : 169. If AB = x, AC = y, BC = z (all in cm), then PQ is equal to:

(a) 13x/4
(b) 13z/4
(c) 13x/8
(d) 13y/4

Q70. A and S are two points on a circle with centre O. AT is a tangent, such that angle SAT = 45°. N is a point on OA, such that SN = 10 cm. The length of the median OM of ΔSON is:

(a) 53 cm
(b) 5 cm
(c) 102 cm
(d) 52 cm

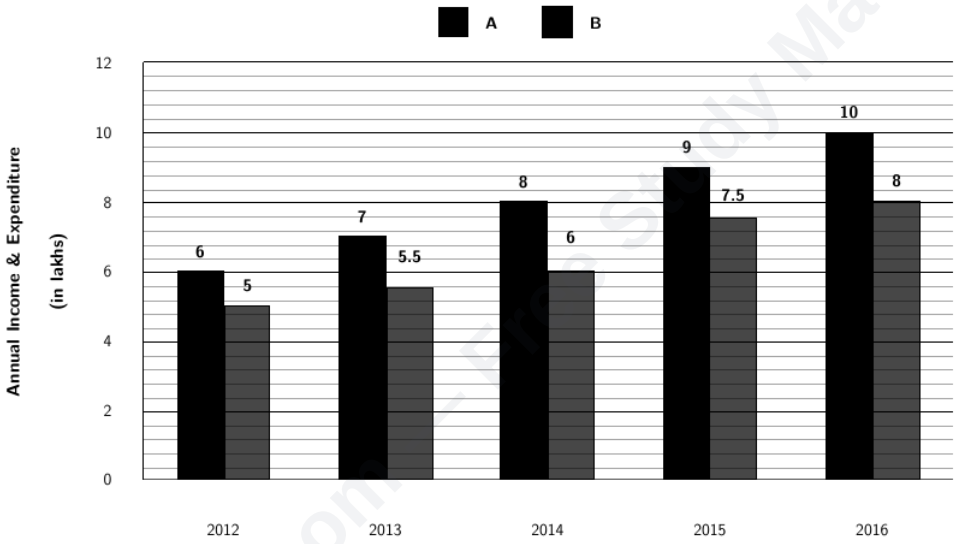
Q71. The side BC of a right - angled triangle ABC (angle ABC = 90°) is divided into four equal parts at P, Q and R respectively. AB = c, BC = a and AC = b. If $AP^2 + AQ^2 + AR^2 = 3b^2 + 17 na^2$, then n equal to:

(a) • 3/4
(b) • 1/8
(c) 3/4
(d) 1/8

Directions

The given Bar Graph presents the data of annual income (A) and annual expenditure (B) of an IT officer in a multinational company during the years 2012 to 2016.

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Q72. For which pair of years, the ratio of savings to expenditure is equal?

(a) 2013, 2014
(b) 2012, 2015
(c) 2014, 2015
(d) 2012, 2013

Q73. What is the percentage of his total savings with reference to his total income for the period 2012 - 15?

(a) 20
(b) 25
(c) 27.5
(d) 30

Q74. What is the ratio between the ration of Savings to Expenditure, respectively for the periods 2012 - 13 and 2015 - 16?

(a) 146 : 135
(b) 21 : 34
(c) 25 : 36
(d) 155 : 147

Q75. What was his average monthly savings (in Rs.) in 2015 and 2016, taken together (correct to two decimal places)?

(a) 13,687.67
(b) 14,967.67
(c) 14,583.33
(d) 14,506.33

GENERAL AWARENESS

Q76. Mughal emperor _____ adopted the title of Alamgir.

(a) Akbar
(b) Jahangir
(c) Aurangzeb
(d) Shah Jahan

Q77. Who among the following leaders was NOT a founding member of the Hindustan Socialist Republican Army?

(a) Jatin Das
(b) Badruddin Tyabji
(c) Bhagat Singh
(d) Ajoy Ghosh

Q78. Which of the following fuels has calorific value equal to petrol?

(a) CNG
(b) Kerosene
(c) LPG
(d) Methane

Q79. The Channel Tunnel is the name of an undersea tunnel connecting _____.

(a) France and England
(b) France and Spain
(c) Spain and Morocco
(d) France and Germany

Q80. Which of the following rivers is NOT a part of the Ganga River System?

(a) Son
(b) Dhansari
(c) Mandakini
(d) Hindon

Q81. The community called Thatheras figures in the Representative List of the Intangible Cultural Heritage of Humanity, UNESCO for _____.

(a) Their traditional dance form called Bhangra
(b) Their martial art
(c) Manufacturing brass and copper utensils
(d) Manufacturing terracotta decorative objects

Q82. Which of the following schedules of the Constitution of India contains the format of oaths to be taken by different constitutional functionaries?

(a) 2nd Schedule
(b) 5th Schedule
(c) 3rd Schedule
(d) 4th Schedule

Q83. Which of the following organisations publishes an annual report titled Global Competitiveness Index?

(a) World Bank
(b) International Monetary Fund
(c) Asian Development Bank
(d) World Economic Forum

Q84. Who among the following co-authored the book 'Indian Fiscal Federalism' along with YV Reddy?

(a) Bimal Jalan
(b) Raghuram Rajan
(c) GR Reddy
(d) Urjit Patel

Q85. As per the Table of Precedence, who among the following enjoys the highest ceremonial protocol?

(a) Deputy Chairman of Rajya Sabha
(b) Holders of Bharat Ratna
(c) Judges of the Supreme Court of India
(d) Cabinet ministers of the Union

Q86. Which of the following is NOT a valve of the Heart?

(a) Mitral
(b) Aortic
(c) Septum
(d) Tricuspid

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Q87. Who among the following Indian female wrestlers won a gold medal in the 59-kg weight category at the 2019 Dan Kovlov - Nikola Petrov tournament?

(a) Pooja Dhanda
(b) Navjot Kaur
(c) Sakshi Malik
(d) Vinesh Phogat

Q88. Sudirman Cup, a bienniel event, is associated with _____.

(a) Badminton
(b) Shooting
(c) Table tennis
(d) Hockey

Q89. In the context of the Internet, which of the followings is NOT a protocol?

(a) Telnet
(b) TCP
(c) UDP
(d) PPT

Q90. In which of the following organs of human body are carbohydrates stored as glycogen?

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

Q91. In the context of computers and communication technology, 1 Megabyte is equal to _____.

(a) 1024 bytes
(b) 1024 kilobytes
(c) 512 kilobytes
(d) 512 bytes

Q92. With which of the following sports is Anjum Moudgil associated?

(a) Shooting
(b) Chess
(c) Archery
(d) Table tennis

Q93. The Strait of _____ connects the Mediterranean Sea with the Atlantic Ocean.

(a) Gibraltar
(b) Messina
(c) Kerch
(d) Bonifacio

Q94. The High Yielding Varieties (HYVs) of wheat were first developed in _____.

(a) USA
(b) Japan
(c) Australia
(d) Mexico

Q95. Who among the following is also known as the founder of macroeconomics as a separate discipline?

(a) Robert Merton
(b) Fischer Black
(c) John Maynard Keynes
(d) Adam Smith

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Q96. The Pradhan Mantri Kisan Samman Nidhi scheme, announced in the Interim Budget 2019, aims at _____.

(a) Providing medical insurance for small farmer families
(b) Ensuring minimum income for farmer families who owns cultivable land.
(c) Ensuring effective implementation of minimum support prices for all edible crops
(d) Providing life insurance for small and marginal farmers

Q97. The famous Khajurao Group of Monuments was constructed by the _____.

(a) Chaulukyas
(b) Chandelas
(c) Gahadavalas
(d) Solankis

Q98. The Election Commission of India recently launched a mobile app for enabling citizens to report the Model Code of Conduct and Expenditure violations during the elections. The app has been named as _____.

(a) iMonitor
(b) Samadhan
(c) cVigil
(d) iElect

Q99. The 2019 Abel Prize has been awarded to _____.

(a) Sir Andrew J Wiles
(b) Karen Uhlenbeck
(c) Yves Meyer
(d) Robert P Langlands

Q100. Under the Sustainable Alternative Towards Affordable Transportation (SATAT) scheme, _____ is being promoted as an alternative transport fuel.

(a) LPG
(b) CNG
(c) Hydrogen
(d) Compressed Biogas

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) deprived

The correct answer is option 3) i.e. deprived.

• deprive: prevent (a person or place) from having or using something.

• The given sentence talks about the employees not being prevented from their freedom, hence, deprive fits in the context of the

given sentence, so, it will be used in the given blank.

• deny: state that one refuses to admit the truth or existence of.

• dissipate: disperse or scatter.

• deploy: move (troops or equipment) into position for military action.

Q2. Answer: (a) avoid the topic

• The correct answer is Option 1 'avoid the topic'.

• The meaning of the given underlined idiom 'beat around the bush' means 'To delay or avoid talking about something difficult or unpleasant.'

• Therefore, only option 1 gives the meaning of the given idiom.

Q3. Answer: (b) alert

The correct answer is Option 2.

Explanation:

Wary: Cautious, guarded, careful.

• Inattentive: of or pertaining to lack of attention; careless.

• Alert: Attentive, awake; on guard.

• Rash: Acting too quickly without considering the consequences, careless.

• Lax: lenient and allowing for deviation, not strict.

Therefore, out of given alternatives, the word 'alert' gives the similar meaning as the given word.

Q4. Answer: (a) impermeable

The correct answer is Option 1.

Explanation:

Porous: Something that is porous has many small holes, so liquid or air can pass through, especially slowly

1. Impermeable: Impossible to pass through, not allowing passage.

2. Absorbent: Having the ability or tendency to absorb.

3. Spongy: Having the characteristics of a sponge.

4. Permeable: that which allows the passage of fluids.

Therefore, out of given alternatives the word 'impermeable' is the opposite word to the given word.

Q5. Answer: (d) No improvement

• The correct answer is Option 4.

• The word 'excruciating' means 'causing great pain' is absolutely correct in the given sentence because the sentence is talking about the extreme pain caused when the hammer fell on his foot.

• Option 1 is wrong because the word 'affable' means 'friendly, courteous, sociable'. This word cannot be used to describe the pain.

• Option 2 is wrong because the word 'exciting' means stirring the emotions or causing excitement cannot be used to describe pain.

• Option 3 is wrong is because 'strong pains' is grammatically wrong as the word 'strong' means 'capable of producing great physical force'.

• Therefore, the correct answer is Option 4 'No Improvement'.

Q6. Answer: (a) controversy

• The correct answer is Option 1 'controversy' which means 'A debate or discussion of opposing opinions'.

• The correct spelling and meaning of other words:

• Contradiction: To be contrary to something, to deny the truth of.

• Construction: The process of building.

• Contraption: A machine that is complicated and precarious.

Q7. Answer: (c) aborigines

The correct answer is option 3 i.e. aborigines.

Explanation:

• Let's look at the meanings of the given options.

• Aborigines: a person, animal, or plant that has been in a country or region from the earliest times.

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• Immigrants: a person who comes to live permanently in a foreign country
• Residents: a person who lives somewhere permanently or on a long-term basis.
• Slaves: a person who is the legal property of another and is forced to obey them.
• Hence from the above-given meanings, we find that the correct answer is Option 3 i.e aborigines.

Q8. Answer: (c) A new student asked me where the Principal's office was.

The correct answer is option 3) i.e. a new student asked me where the Principal's office was.
• when direct speech is in interrogation form 'said to' is changed into 'asked'.
• And the present tense of the sentence is also changed into the past tense.
• And the interrogative sentence is changed into the assertive sentence.
• All these rules are followed in option 3), hence, it is the correct answer.

Q9. Answer: (b) Distribute

The correct answer is option 2) i.e. distribute.
Explanation:
amass: gather together or accumulate something over a period of time.
• distribute: give a share or a unit of something to each of a number of recipients. Hence, this is the most appropriate antonym of the given word.
• heap: a large amount or number of.
• collect: bring or gather together a number of things.
• horde: a large group of people.

Q10. Answer: (d) waved feverishly

The correct answer is option 4) i.e. waved feverishly.
• The given sentence is in the past tense, hence, 'waved' will be used in place of 'wave'.
• Hence, the correct answer is 'waved feverishly'.
• ADDITIONAL INFORMATION
• feverishly = in a frenetically excited or energetic manner.
"a feverishly anticipated major sports tournament"

Q11. Answer: (b) has been lives

The correct answer is option 2) i.e. had been lives.
• The given sentence is in the present perfect continuous tense.
• And, in the present perfect continuous tense, has/have+ been + V1+ing is used.
• Hence, has been living will be used in the given sentence.
• So, the correct sentence will be: My grandmother has been living in Shimla since her childhood days.

Q12. Answer: (a) irritating

The correct answer is option 1) i.e. irritating.
Explanation:
• A pain in the neck means someone or something that is very annoying or irritating.
Example: He was a pain in the neck. I was glad when he left my department.
• Synonyms: Annoyance, nuisance, irritant, etc.

Q13. Answer: (b) The children were given prizes by the chief guest.

• The correct answer is Option 2.
• When changing active sentence to its passive form, subject and object interchange their places.
• Option 1 is wrong because the sentence is in the present tense but the given active sentence is in past tense. Tense remains the same in both sentences.
• Option 4 is wrong because the subject 'children' is in plural form so it is followed by the plural verb i.e. 'were'.
• Option 3 is wrong because 'being' is used while making the passive voice of continuous tenses but the given sentence is in past indefinite.
• Therefore Option 2 'The children were given prizes by the chief guest' is the correct answer.

Q14. Answer: (b) CDAB

- The correct answer is Option 2.
- The answer begins with sentence C as it is the introductory sentence. In all other remaining questions, there is a pronoun 'she/her' in which we do not know about the subject.
- The second sentence will be D because after introducing the grandmother, the sequence should be continued with her daily activities right from the morning.
- Sentence B will be the last sentence as we have the adverb 'finally'.
- Therefore, the correct sequence is followed by Option 2 i.e. 'CDAB'.

Q15. Answer: (d) Very little

- The correct answer is Option 4.
- 'little' is used before uncountable nouns. Metals are countable therefore we use 'few/a few' in the given sentence.
- Therefore, the correct sentence is 'few/a few metals are as precious as gold.'

Q16. Answer: (c) wane

The meanings of the given words are as follows:

Recede: (of a quality, feeling, or possibility) gradually diminish/decrease, to move back, to retreat.

1. Waver: to sway back and forth;
2. Increase: to become larger or greater.
3. Wane: a gradual decrease in power, value, intensity.
4. Intensify: To act with increasing power or energy.

Clearly, 'wane' and 'recede' are words with similar meanings.

Thus, the correct answer is Option 3.

Q17. Answer: (a) BADC

- The correct answer is Option 1.
- Given sentences are part of a conversation. The correct sequence will be first asking for an order, taking the order, then asking if they something more.
- Therefore, the correct sequence is followed by Option 1 'BADC'.

Q18. Answer: (b) other

- The correct answer is Option 2.
- The correct word that fits here is other. 'each other' indicates a mutual relation between two entity..

Q19. Answer: (d) situation

- The correct answer is Option 4.
- The word 'situation' fits in the given blank because further in the passage it is explained about the difficult situation that he faces.
- Therefore, the correct answer is 'situation'. All other words are not relevant according to the passage.

Q20. Answer: (c) fight

- The correct answer is Option 3.
- The word 'fight' fits correctly in the given blank because the sentence is talking about a difficult situation that he faces. In passage the word 'duel' means 'struggle between two people or parties'.
- Therefore the word 'fight' is a suitable word and all other options are irrelevant to the passage.

Q21. Answer: (d) matter

- The correct answer is Option 4.
- The suitable word that fits the blank is 'matter' which means 'an approximate amount or extent' according to the passage.
- In passage we are mentioning time so the use of other options 'in place/gap/time of three hours' do not make a proper sense.

Q22. Answer: (c) at least

- The correct answer is Option 3.
- In the given passage the person is in a situation in which he says If they kill him any way he shall be killed by his fellow soldier.
- Therefore, the word 'at least' fits the blank correctly as it means 'any way/at a minimum'.
- All other options do not give the proper meaning in the blank

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Q23. Answer: (b) extended

The correct answer is Option 2.

The sentence 'The Prime Minister was extended with a ceremonial welcome' means he was bestowed long and warmly with honour at the time of 'welcome'.

All other options are irrelevant as they mean :

• Invite: To make a polite request to welcome.

• Initiated: To begin, to start.

• Expected: regarded as likely; anticipated.

Q24. Answer: (b) necessary

• The correct answer is Option 2.

• The meaning of the word 'necessary' is 'Required, essential'.

Q25. Answer: (a) dermatologist

• The correct answer is Option 1 'dermatologist' which means 'a person who is skilled in, professes or practices dermatology(Study of skin & its diseases)'.

• The meaning of other words:

• Radiologist: The person who practices radiology(the use of radiation in diagnosis)

• Geologist: A person who is skilled at geology(study if structure of earth)

• Cardiologist: A physician who specializes in medical problems related to the heart.

Q26. Answer: (d) Either conclusion II or III follows.

The least possible Veen diagram is given below,

Conclusions:

I. All swords are knife → False (some swords are knives is true)

II. Some axes are saws → False (It is possible but not definite).

III. No axe is saw → False (It is possible but not definite).

So, conclusion II and III are complementary to each other.

Hence, the correct answer is Either conclusion II or III follows.

Q27. Answer: (b) 121

$81 \rightarrow 9^2$

$121 \rightarrow 11^2$

$16 \rightarrow 4^2$

$100 \rightarrow 10^2$

Therefore, all numbers are a square form of the compound number except 121,

Whereas, 121 is the square of a prime number.

Hence, 121 is the odd one out.

Q28. Answer: (a) [figure]

Considering 1^(st) two dice. We get

as a constant term, so if we rotate these dice from this then we get

is the opposite side of

”

Hence, the correct answer is

Q29. Answer: (b) [figure]

Wools, wood, and leather are three different things,

Therefore, figure 2 is the correct answer.

Q30. Answer: (a) 4, 1, 3, 5, 2

The correct meaningful order will be

Spring → Summer → Monsoon → Autumn → Winter

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

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Q31. Answer: (c) WJXPIU

The pattern followed here is,

Similarly,

Hence, the correct answer is WJXPIU.

Q32. Answer: (d) Saturday

2016 is a leap year so we get an extra odd day with respect to the ordinary year. So we get one extra day.

Therefore, the day will be Friday + 1 = Saturday.

Hence, the correct answer is Saturday.

Q33. Answer: (c) [figure]

When the paper is unfolded it will appear as in the following figure:

Hence, the correct answer is figure 3.

Q34. Answer: (d) 188

The sum of the positional value of CAT = 3 + 1 + 20 = 24 and 24 × 3 (Number of letters) = 72

Also,

TROT = 20 + 18 + 15 + 20 = 73 and 73 × 4 (Number of letters) = 292

So, the code for

The sum of the positional value of STAG = 19 + 20 + 1 + 7 = 47 and 47 × 4 (Number of letter) = 188

Hence, the correct answer is 188.

Q35. Answer: (d) • and ÷

Given equation is

15 + 15 - 2 × 10 ÷ 35

Option 1:

• and –

15 - 15 + 2 × 10 ÷ 35

= 15 - 15 + 2 × 5/7

=15 - 15 + 10/7

= 10/7 ≠16

Option 2:

× and –

15 + 15 × 2 - 10 ÷ 35

=15 + 15 × 2 – 5/7

=15 + 30 -5/7

=45 – 5/7

=310/7 ≠16

Option 3:

× and ÷

15 + 15 × 2 - 10 ÷ 35

= 15 + 15 ÷ 2 – 10 × 35

= 15 + 15/2 - 10 × 35

= 15 + 15/2 – 350

= 45/2 – 350

= -655/2 ≠16

Option 4:

• and ÷

15 + 15 - 2 × 10 ÷ 35

= 15 ÷ 15 - 2 × 10 + 35

= 1 – 20 + 35

= 1 - 20 + 35

= 36 – 20

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= 16

Hence, the correct answer is + and ÷.

Q36. Answer: (c) [figure]

The mirror image will be,

Hence, option 3 is the correct answer.

Q37. Answer: (d) [figure]

Hence, option 4 is the correct answer.

Q38. Answer: (b) Driver

“Machine” is operated by “operator” similarly, “car” is operated by “driver”.

Hence, the correct answer is Driver.

Q39. Answer: (c) WB

The pattern followed here is,

Similarly,

Hence, the correct answer is WB

Q40. Answer: (b) Prune : Shrub

Hairs are trim according to their growth,

Similarly,

Shrubs are pruned if they grow more.

Hence, the correct answer is 'Prune : Shrub'.

Q41. Answer: (b) [figure]

The 'waves' shown in the figures are moving in the anticlockwise direction in each figure.

Hence the next figure will be,

Hence, the correct answer is option 2.

Q42. Answer: (d) 16

The squares are:

ABCD, EFGH, IJXT, JKWX, KLMW, TXUS, XWVU, WMNV, SUQR, UVPQ, VNOP, IKVS, JLNU, TWPR, XMOQ, ILOR.

Hence, the correct answer is 16.

Q43. Answer: (b) (35, 59, 47)

The pattern followed here is,

(45, 49, 47) → 45 + 49 = 94 ÷ 2 = 47

Similarly,

(35, 59, 47) → 35 + 59 = 94 ÷ 2 = 47

Hence, (35, 59, 47) is the correct answer.

Q44. Answer: (d) Sister

The family tree is as shown below:

Therefore, the girl is the sister of Deepthi.

Hence, the correct answer is sister.

Q45. Answer: (a) 720

The pattern followed here is,

Hence, the correct answer is 720.

Q46. Answer: (c) 12 : 20

Given series:

Similarly,

Hence, the correct answer is 12 : 20.

Alternate Method

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The logic followed here is:
For,
42 : 56
→ 62 + 6 = 42.
→ 72 + 7 = 56.
Similarly, for 12 : 20
→ 32 + 3 = 12.
→ 42 + 4 = 20.
Hence, the correct answer is '12 : 20'.

Q47. Answer: (d) PM

The pattern followed here is,
Hence, the correct answer is PM.

Q48. Answer: (c) BFM

The pattern followed here is,
Therefore, the correct term will be BFJ,
Hence, 'BFM' is an odd one out.

Q49. Answer: (a) Disaster

All options except disaster are the effect of all of them.
Hence, 'Disaster' is the odd one out.

Q50. Answer: (a) (25, 49, 148)

Given series
(64, 100, 328) = 64 → 8^2 = 64, 100 → $10^2$and 10 + 8 = 18^2 = 324 + 4 = 328
Option 1:
(25, 49, 148)= 25 → 5^2 = 25, 49 → $7^2$and 5 + 7 = 12^2 = 144 + 4 = 148;
Option 2:
(49, 81, 137) = 49 → 7^2 = 49, 81 → $9^2$and 7 + 9 = 16^2 = 256 + 4 = 260 (not follow)
Option 3:
(16, 36, 54) = 16 → 4^2 = 16, 36 → $6^2$and 4 + 6 = 10^2 = 100 + 4 = 104 (not follow)
Option 4:
(36, 64, 97) = 36 → 6^2 = 36, 64 → $8^2$and 8 + 6 = 14^2 = 196 + 4 = 200 (not follow)
Hence, the correct answer is (25, 49, 148)

Q51. Answer: (a) 8

Calculation:
CP = Rs.100
MP = 100 + 100 × 25/100 = 125
Profit % = 15% = 15/100 = 3/20
CP/SP = 20/23
20 units = 100
1 unit = 5
SP (23 units) = 5 × 23 = Rs.115
Discount% calculation,
115 = 125 × (100 - x)/100
=> X = 8%
Therefore The answer is 8%.

Q52. Answer: (d) 75°, 15°

By options,
Sin(75° + 15°) = sin90° = 1
Cos(75° - 15°) = cos60° = ½

The only option satisfying is option 4.

Q53. Answer: (c) $C^2/24\pi$

Shortcut Trick

The total area of a circle in terms of circumference C is given directly by $A_{(total)} = C^2 / 4\pi$.

A sector with a central angle of 60° covers exactly 60° ÷ 360° = 1/6 of the total area of the circle.

Area of sector (A) = (1/6) × (C^2 / 4π) = C^2 / 24π.

Therefore The correct answer is C^2 / 24π.

Alternate Method

Given:

=> Central angle of the sector (θ) = 60°

=> Circumference of the circle = C

Formula Used:

=> Circumference of a circle, C = 2πr (where r is the radius)

=> Area of a sector, A = (θ ÷ 360°) × πr^2

Calculations:

=> From the circumference formula, we find the radius in terms of C:

=> r = C / 2π

=> Substitute the values of r and θ into the area formula:

=> A = (60° ÷ 360°) × π × $(C / 2\pi)^2$

=> A = (1 / 6) × π × (C^2 / $4\pi^2$)

=> The π in the numerator cancels out with one π in the denominator:

=> A = (1 / 6) × (C^2 / 4π)

=> A = C^2 / 24π

Therefore The correct answer is C^2 / 24π.

Additional Information

Area of a Complete Circle

The total area enclosed by a circle corresponds to a central angle of 360° and is given by A = πr^2.

Length of an Arc

The length of an arc (l) forming a central angle θ is given by l = (θ ÷ 360°) × 2πr.

Area of a Circular Segment

The area of a minor segment is obtained by subtracting the area of the corresponding triangle from the total area of the sector.

Q54. Answer: (a) Rs. 3,300

Time = from 1^(st) January 2008 to 31^(st) august 2008

T = 8 months or 2/3 year

Simple interest = P × R × T/100

SI = [3000 × 15 × (2/3)]/100 = Rs.300

The amount that is to be returned by A = P + SI

=> 3000 + 300 = Rs.3300

Q55. Answer: (c) 5 : 2

Given:

Capacities of three containers = 40 L, 30 L and 20 L respectively.

Ratio of Milk and Water are, 3 : 2, 5 : 1 and 7 : 2 respectively.

Concept used:

We will be using the concept of ratio.

Calculation:

The quantity filled in container 1 = 40 × 87.5/100 = 35 L

The quantity filled in container 2 = 30 × 80/100 = 24 L

The quantity filled in container 3 = 20 × 90/100 = 18 L

The quantity of milk in container 1 = 35 × 3/5 = 21 L

The quantity of milk in container 2 = 24 × 5/6 = 20 L

The quantity of milk in container 3 = 18 × 7/9 = 14 L
The quantity of water in container 1 = 35 × 2/5 = 14 L
The quantity of water in container 2 = 24 × 1/6 = 4 L
The quantity of water in container 3 = 18 × 2/9 = 4 L
Required ratio = (21 + 20 + 14) : (14 + 4 + 4) = 55 : 22 = 5 : 2

Q56. Answer: (d) 4 : 1

Given:
OABC is a quadrilateral
O is the centre of a circle and A, B and C are points in the circle
angle ABC = 120°
Concept used:
1.) In a cyclic quadrilateral, the sum of the opposite angles is 180°
2.) The angle subtended by an arc of a circle at the centre is double the angle subtended by it any other point on the remaining part o the circle.
Calculations:
Let us assume a point E on a circle and join with A and C to form a Cyclic quadrilateral
Because EABC is a cyclic quadrilateral
Therefore angle AEC = 180° – angle ABC
=> angle AEC = 180° – 120° = 60°
Let angle subtended by arc AC of a circle at centre be x
So, The angle subtended by arc AC at the remaining part of circle
=> angle AEC = x/2
=> 60° = x/2
=> x = 120°
angle AOC = 120°
Because OC = OA (Radius of circle)
Therefore angle OAC = angle OCA
In ΔOAC
angle OAC + angle OCA + angle AOC = 180°
=> 2angle OAA = 180 – 120°
=> angle OAC = 30°
Ratio of angle AOC and angle OAC = 120° : 30° = 4 : 1
Therefore Ratio of angle AOC and angle OAC is 4 : 1
Alternate Method
Consider, a circle with centre O.
Given that angle ABC = 120°
angle ABC = 180° - angle AOC/2
Therefore angle AOC = 360° - 2angle ABC => 120°
now,
angle A + angle B + angle C + angle O = 360°
angle A + 120° + angle C + 120° = 360°
angle A + angle C = 360° - 240° = 120°
angle A = angle C => 60°
Therefore angle OAC = 30°
Ratio of angle AOC/angle OAC = 120° : 30° = 4 : 1

Q57. Answer: (c) 9/5 sec

We know that the length = speed × time
For same length,
S1 × t1 = S2 × t2
90 × t1 = 162 × t2

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t1 = 162/90=9/5 seconds

Q58. Answer: (a) 259259

Considering the given numbers 7, 11 and 13

LCM of (11,13 and 7) = 1001

Now,

Any number of the form abcabc will always be divisible by 1001

Therefore From the given options 259259 will always divisible by 1001

Q59. Answer: (b) 4

Follow BODMAS rule to solve this question, as per the order given below,

Step - 1 - Parts of an equation enclosed in 'Brackets' must be solved first,

Step - 2 - Any mathematical 'Of' or 'Exponent' must be solved next,

Step - 3 - Next, the parts of the equation that contain 'Division' and 'Multiplication' are calculated,

Step - 4 - Last but not least, the parts of the equation that contain 'Addition' and 'Subtraction' should be calculated.

Now, given expression:

=> 1/2 of 8/5÷ {21/5-(5/16+ 3/5× 1 7/8÷ 2/3)}

=> 1/2× 8/5÷ {11/5-(5/16 + 3/5× 15/8 ÷ 2/3)}

=> 4/5÷ {11/5-(5/16+ 3/5 × 15/8× 3/2)}

=> 4/5÷ {11/5-(5/16+27/16)}

=> 4/5÷ {11/5-32/16}

=> 4/5÷ 1/5

=> 4/5× 5/1=4

Q60. Answer: (b) 3

X=1/12-1/13+1/13- 1/14+...-1/24

X=1/12-1/24

X=1/24

Y=1/36-1/37+1/37-1/38+...-1/72

Y=1/36-1/72=1/72

Y=1/36-1/72=1/72

X/Y = (1/24) / (1/72) = 3

Q61. Answer: (c) 3 × 10^(- 5)

=> 0.01404/(24²+ 6²– 144)

=> 0.01404/(576 + 36 - 144)

=> 0.01404/468

=> 3 × 10^(- 5)

Q62. Answer: (c) 1

Given that,

θ = 9°

10θ = 90°

Given expression,

Cotθ.Cot2θ.Cot3θ.Cot4θ.Cot5θ.Cot6θ.Cot7θ.Cot8θ.Cot9θ

=> Cotθ.Cot2θ.Cot3θ.Cot4θ. Cot(90° - 4θ).Cot(90° - 3θ).Cot(90° - 2θ).Cot(90° - θ).Cot90°

=> Cotθ.Cot2θ.Cot3θ.Cot4θ. tan 4θ. tan 3θ. tan 2θ. tan θ.1 = 1 (Because tanθ = 1/cotθ)

Q63. Answer: (c) Rs. 684

Shortcut Trick

Fractional values of discounts: 10% = 1/10 and 5% = 1/20.

Multiplying factor for 10% discount = 1 − 1/10 = 9/10.

Multiplying factor for 5% discount = 1 − 1/20 = 19/20.

SP = MP × (9/10) × (19/20)

SP = 800 × (171 / 200) = 684
Therefore The correct answer is Rs. 684.
Alternate Method
Given:
Marked Price (MP) = Rs. 800
First discount (D1) = 10%
Second discount (D2) = 5%
800
720
684
Marked Price
After 1st D
Selling Price
− 10%
(−80)
− 5%
(−36)
Successive Discounts Method
Formula Used:
Selling Price (SP) = MP × (100 − D1)/100 × (100 − D2)/100
Calculation:
=> SP = 800 × (100 − 10)/100 × (100 − 5)/100
=> SP = 800 × (90/100) × (95/100)
=> SP = 800 × (9/10) × (19/20)
=> SP = 800 × (171/200)
=> SP = 4 × 171
=> SP = 684
Therefore The correct answer is Rs. 684.
Additional Information
Successive Discounts Formula
When two successive discounts of x% and y% are given, the equivalent single discount is (x + y − xy/100)%.
Marked Price and Cost Price Relationship
MP / CP = (100 + Profit %) / (100 − Discount %)
Multiple Successive Discounts
For three successive discounts of a%, b%, and c%, SP = MP × (100 − a)/100 × (100 − b)/100 × (100 − c)/100.

Q64. Answer: (c) 119

$(a + b)^2 = (a^2 + b^2 + 2ab)$
$(a + b)^2 = 169 + 2 \times 60 = 289$
$(a + b) = 17$
$(a - b)^2 = (a^2 + b^2 - 2ab)$
$(a - b)^2 = 169 – 2 \times 60 = 49$
$(a - b) = 7$
Therefore the value of $(a^2 – b^2) = (a + b)(a - b) = 17 \times 7 = 119$
Alternate Method
a2 + b2 = 169, ab = 60
So A.T.Q,
a = 12, b = 5
Therefore (a2 – b2) = (a + b) (a - b) = (12 + 5) (12 - 5) = 17 × 7 = 119

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Q65. Answer: (a) 13.5

X = average of first 10 prime numbers = (2 + 3 + 5 + 7 + 11 + 13 + 17 + 19 + 23 + 29)/10 = 12.9

Y = average of first 10 prime numbers with two digits

Y = (11 + 13 + 17 + 19 + 23 + 29 + 31 + 37 + 41 + 43)/10 = 26.4

Difference between the averages = 26.4 – 12.9 = 13.5

Q66. Answer: (b) 16

1 man = 2 women

Work done by 3 men + 2 women = 2 days

Or (6 + 2) women do the work in 2 days.

Work done by 8 women in a day = ½

Work done by 1 woman in 1 day = 1/16

Hence, a woman working alone complete the work = 16 days

Q67. Answer: (a) 36.62

Let the length and breadth of the rectangular airport runway be l and b.

Area = l × b

New length = l × 110/100 = 1.1l

New breadth = b × 108/100 = 1.08b

New area (A) = 1.1l × 1.08b = 1.188lb

Change in cost,

R' = R × 115/100 = 1.15R

Total cost of repairing = 1.15R × 1.188lb = 1.3662RA

Percentage change in cost = (1.3662RA - RA)/RA × 100 = 36.62%

Q68. Answer: (c) secx

The given expression,

√((1 - sinx))/((1 + sinx)) = a - tan x

=> √((1 - sinx) × (1 - sinx))/((1 + sinx)(1 - sinx)) = a - tan x

=> (1 - sinx)/cosx = a – tanx

=> 1/cosx – tanx = a – tanx

=> 1/cosx = a

=> a = sec x

Q69. Answer: (d) 13y/4

Theorem : the ratio of the area of two similar triangles = square of the ratio of their respective sides

Given that,

Area ABC : Area PRQ = 16 : 169 = (AC/PQ)2

=> AC/PQ = 4 : 13

=> y/PQ = 4 : 13

PQ = 13y/4

Q70. Answer: (b) 5 cm

Given:

angle SAT = 45°

SN = 10 cm

Concept used:

1. The length of the median drawn from the vertex of the right angle is half the length of the triangle's hypotenuse.

2. The angle between the tangent and the line joining the center of a circle and the point of contact of the tangent to the circle is equal to 90°.

Calculation:

As AT is the tangent,

angle OAT = 90°

Again angle SAT = 45°

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Therefore angle OAS = 90° - 45° = 45°
In ΔOAS,
OA = OS = Radius
angle OAS = angle OSA = 45°
Then angle NOS = 180° - 45° - 45° = 90°
=> ΔSON is a right-angles triangle
Thus, OM = SN/2
=> OM = 10/2 = 5 cm
Therefore The length of the median OM of ΔSON is 5 cm.

Q71. Answer: (b) • 1/8

In ΔABC,
Let AB = c, BC = a and AC = b
And BP = PQ = QR = RC = a/4
Now, $AP^2 = AB^2 + BP^2 = c^2 + (a/4)^2$
$AQ^2 = AB^2 + BQ^2 = c^2 + (2a/4)^2$
$AR^2 = AB^2 + BR^2 = c^2 + (3a/4)^2$
Add the above three equations,
$AP^2 + AQ^2 + AR^2 = 3c^2 + 14a^2/16 = 3c^2 + 7a^2/8$
Again from ΔABC,
$b^2 = a^2 + c^2$
$c^2 = b^2 - a^2$
$AP^2 + AQ^2 + AR^2 = 3(b^2 - a^2) + 7a^2/8 = 3b^2 - 3a^2 + 7a^2/8$
$= 3b^2 (- 24a^2 + 7a^2)/8 = 3b^2 + 17.n.a^2$
$(3b^2 - 17na^2/8) = 3b^2 + 17na^2$
Hence, n = - (1/8)

Q72. Answer: (b) 2012, 2015

Savings for 2012 = (6 - 5) = 1 lakh, required ratio = 1 : 5
Savings for 2013 = (7 – 5.5) = 1.5 lakh, required ratio = 1.5 : 5.5 = 3 : 11
Savings for 2014 = (8 - 6) = 2 lakh, required ratio = 2 : 6 = 1 : 3
Savings for 2015 = (9 – 7.5) = 1.5 lakh, required ratio = 1.5 : 7.5 = 1 : 5
Savings for 2016 = (10 – 8) = 2 lakh, required ratio = 2 : 8 = 1 : 4
Therefore the ratio is similar for year 2012 and 2015.

Q73. Answer: (a) 20

His total income for the period 2012 - 15 = (6 + 7 + 8 + 9) = 30 lakh
His total expenditure = (5 + 5.5 + 6 + 7.5) = 24 lakh
Total savings = (30 - 24) = 6 lakh
Required percentage = (6/30) × 100 = 20%

Q74. Answer: (d) 155 : 147

Expenditure from year 2012 - 13 = (5 + 5.5) = 10.5
Income from year 2012 - 13 = (6 + 7) = 13
Savings = (13 – 10.5) = 2.5
ratio = 2.5 : 10.5 = 5 : 21
Income from year 2015 - 16 = (9 + 10) = 19
Expenditure from year 2015 - 2016 = (7.5 + 8) = 15.5
Savings in years 2015 - 16 = (19 – 15.5) = 3.5
Ratio = 3.5 : 15.5 = 7 : 31
Required ratio = (5 : 21) : (7 : 31) = 155 : 147.

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Q75. Answer: (c) 14,583.33

Income from year 2015 - 16 = (9 + 10) = 19

Expenditure from year 2015 - 2016 = (7.5 + 8) = 15.5

Savings in years 2015 - 16 = (19 – 15.5) = 3.5

average monthly savings (in Rs.) in 2015 and 2016 = (3.5 × 100000)/24 = 14,583.33

Q76. Answer: (c) Aurangzeb

The correct answer is Aurangzeb.

Key Points

• The alternative title "Alamgir" was adopted by Mughal emperor Aurangzeb which means 'world conqueror'.

• His original name was "Muhi-al-Din Muhammad".

• He was the last of the great Mughal emperors of India, from 1658 to 1707.

• Aurangzeb was the third son of the emperor Shah Jahan and Mumtaz Mahal.

• He conquered Bijapur and Golconda.

• He discontinued the practice of jarokhadarshan, started by Akbar.

• He began a policy of destroying Hindu temples.

• He destroyed Mathura temple and Benares temple.

• In 1679, he reimposed Jizya and pilgrim tax, which was discontinued by Akbar.

• He was also against the Sikhs and he executed the ninth Sikh Guru Teg Bahadur.

• Aurangazeb is held responsible for the decline of the Mughal emperor due to his policies.

Q77. Answer: (b) Badruddin Tyabji

The correct answer is option 2, i.e. Badruddin Tyabji.

• Hindustan Socialist Republican Army(HSRA) established in 1928 at Feroz Shah Kotla ground in Delhi by Chandrasekhar Azad, Bhagat Singh, Sukhdev Thapar, Jatin Das, and Ajay Ghosh.

• Earlier it was known as the Hindustan Republican Association (HRA) whose written constitution and published a manifesto titled 'The Revolutionary' were produced as evidence in the Kakori conspiracy case of 1925.

About Badruddin Tyabji

• He was the first Muslim president of Indian National Congress in 1887 Madras session.

Q78. Answer: (b) Kerosene

The correct answer is option 2, i.e. Kerosene.

• The amount of heat energy produced on complete combustion of 1 kg of a fuel is called its calorific value.

• The calorific value of a fuel is expressed in a unit called kilojoule per kg (kJ/kg).

• The calorific values of some fuels are given in Table.

Fuel	Calorific Value (kJ/kg)
Cow dung cake	6000-8000
Wood	17000-22000
Coal	25000-33000
Petrol	45000
Kerosene	45000
Diesel	45000
Methane	50000
CNG	50000
LPG	55000
Biogas	35000-40000
Hydrogen	150000

• As we can see in the table Calorific value of Petrol, Kerosene, and Diesel are the same.

Q79. Answer: (a) France and England

The correct answer is option 1, i.e. France and England.

• The Channel Tunnel is an undersea tunnel linking southern England and northern France.

• It is operated by the company Eurotunnel, who also runs a railway shuttle between Folkestone and Calais, carrying passengers in cars, vans and other vehicles.

• The Channel is actually comprised of three tunnels: two rail tunnels, used for freight and passenger trains, and a service tunnel.

• The idea of a tunnel under the Channel was first proposed in 1802 but construction wasn't started until 1988. It was completed in 1993.

Q80. Answer: (b) Dhansari

The correct answer is option 2, i.e Dhansari.

• The important tributaries of Ganga are the Ramganga, the Gomati, the Ghaghara, the Gandak, the Kosi and the Mahanada.

• At Devprayag, the Bhagirathi meets the Alaknanda, then it is known as the Ganga.

• The Yamuna, the westernmost and the longest tributary of the Ganga, has its source in the Yamunotri glacier, it joins the Ganga at Prayag (Allahabad).

• The Hindon River, being a tributary of the Yamuna traces its origin from the lower Himalayan ranges housing the Upper Shivalik.

• The Kali River, originating in the Doon Valley, is a tributary of the Hindon river.

• The Son is the major right-bank tributary of the Ganga River. It is a large south bank tributary of the Ganga, originating in the Amarkantak plateau.

• While the River Dhansiri is one of the major south bank tributaries of the river Brahmaputra

Q81. Answer: (c) Manufacturing brass and copper utensils

The correct answer is option 3, i.e. Manufacturing brass and copper utensils.

• The craft of the Thatheras of Jandiala Guru constitutes the traditional technique of manufacturing brass and copper utensils in Punjab.

• The metals used are copper, brass and certain alloys, are believed to be beneficial for health.

• Heating the plates while hammering and curving them into different shapes requires temperature control.

• Utensils are manually finished by polishing with traditional materials like sand and tamarind juice.

Q82. Answer: (c) 3rd Schedule

The correct answer is option 3, i.e. 3rd Schedule.

• In the Indian Constitution, presently there are 12 Schedules.

• The third Schedule consists of Forms of Oaths or Affirmations for:

1. The Union ministers
2. The candidates for election to the Parliament
3. The members of Parliament
4. The judges of the Supreme Court
5. The Comptroller and Auditor-General of India
6. The state ministers
7. The candidates for election to the state legislature
8. The members of the state legislature
9. The judges of the High Courts

• Articles which covered the third Schedule are 75, 84, 99, 124, 146, 173, 188 and 219.

Q83. Answer: (d) World Economic Forum

The correct answer is option 4, i.e. World Economic Forum.

• The annual Global Competitiveness Index is compiled by the Geneva-based World Economic Forum (WEF).

• About Global Competitiveness Index 2019:

• The Global Competitiveness Index ranks 140 nations on the basis of 98 indicators organized into 12 pillars including infrastructure, institution, ICT adoption, macroeconomic stability, health, skills, product market, labour market, financial system, market size, business dynamism, and innovation capability.

• This year’s Global Competitiveness Report is the latest edition of the series launched in 1979 that provides an annual assessment of the drivers of productivity and long-term economic growth.

• Singapore is the world’s most competitive economy in 2019, overtaking the United States, Hong Kong SAR, Netherlands and Switzerland are the top 5 countries.

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• India ranked 68th in the annual Global Competitiveness Index 2019.

About WEF:

• The World Economic Forum is the International Organization for Public-Private Cooperation.

• It was established in 1971 as a not-for-profit foundation and is headquartered in Geneva, Switzerland.

• The Forum is chaired by Founder and Executive Chairman Professor Klaus Schwab.

Q84. Answer: (c) GR Reddy

The correct answer is option 3, i.e. GR Reddy.

• The book “Indian Fiscal Federalism” is written by Dr Y. V. Reddy, former Governor of RBI and Chairman of the 14th Finance Commission of India along with Dr G. R. Reddy, Advisor (Finance) to the Government of Telangana

• The book offers a historical perspective on fiscal federalism, in particular, the interplay and overlap of institutional mechanisms.

• It examines the pivotal role of Finance Commissions and assesses momentous events since 2014, such as the replacement of the Planning Commission by NITI Aayog, the emergence of the GST Council, and the controversies surrounding the Fifteenth Finance Commission.

Q85. Answer: (d) Cabinet ministers of the Union

The correct answer is option 4, i.e. Cabinet Ministers of Union.

• The Indian Order of Precedence is the hierarchy of important positions.

• The order of the Precedence in India is only to indicate the ceremonial protocol. It is not applicable in the day-to-day functioning of the Government of India.

Rank	People
1	President
2	Vice President
3	Prime Minister
4	Governors of States within their respective states
5	Former Presidents
5A	Deputy Prime Minister (vacant)
6	Chief Justice of India Speaker of the Lok Sabha
7	Cabinet Ministers of the Union Chief Ministers of States (within their respective states) Deputy Chairman of the Planning Commission (position no longer exists) Former Prime Ministers of India Leaders of the Opposition in the Rajya Sabha and the Lok Sabha
7A	Holders of the Bharat Ratna
8	Ambassadors Extraordinary and Plenipotentiary and the High Commissioners of Commonwealth countries accredited to India Chief Ministers of States (outside their respective states) Governors of States (when outside their respective states)
9	Judges of the Supreme Court of India
9A	Chairman of the Union Public Service Commission Chief Election Commissioner Comptroller and Auditor General
10	Deputy Chairman of the Rajya Sabha Deputy Chief Ministers of States Deputy Speaker of the Lok Sabha Members of the Planning Commission Ministers of States of the Union

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11	Lieutenants Governor of Union Territories Attorney General Cabinet Secretary
12	Chiefs of Staff holding the rank of full general or equivalent rank – Chief of the Army Staff Chief of the Air Staff Chief of the Naval Staff

Q86. Answer: (c) Septum

The correct answer is option 3, i.e. Septum.

• The heart has four valves - one for each chamber of the heart.

• The valves keep blood moving through the heart in the right direction.

• The mitral valve and tricuspid valve are located between the atria (upper heart chambers) and the ventricles (lower heart chambers).

• The aortic valve and pulmonic valve are located between the ventricles and the major blood vessels leaving the heart.

• The septum of the heart is the dividing wall between the right and left sides of the heart.

Q87. Answer: (a) Pooja Dhanda

The correct answer is option 1, i.e. Pooja Dhanda.

• Pooja Dhanda claimed gold in the 59kg category at the Dan Kolov-Nikola Petrov wrestling tournament in Ruse, Bulgaria.

• Bajrang Punia also won the 65kg category gold at the Dan Kolov-Nikola Petrov wrestling tournament.

• Dhanda finished undefeated in the round-robin format of the competition which included a win over her compatriot Sarita Mor.

Q88. Answer: (a) Badminton

The correct answer is option 1, i.e. Badminton.

• The Sudirman Cup is the World Team Badminton Championships, held every two years.

• The event was first held in the Bung Karno Stadium, Jakarta, Indonesia with 28 nations taking part.

• Nanning, China was the host of the 2019 edition of the mixed team event from 22-29 May.

• The Cup is named after Dick Sudirman, a former Indonesian badminton player and the founder of the Badminton Association of Indonesia (PBSI).

• Until 2003 the Sudirman Cup took place alongside the World Badminton Championships (Individuals) before becoming a stand-alone Championships for the first time in Eindhoven, the Netherlands in 2003.

• Since 1989, only three countries – Indonesia, Korea, and China, have won the Sudirman Cup.

Q89. Answer: (d) PPT

The correct answer is PPT.

Key Points

• The functioning of the Internet is not controlled by any particular organization.

• It is managed by a group of voluntary organizations.

• These voluntary organizations have formed the Internet Society.

• They decide on the rules, known as protocols, for communication over the Internet.

Additional Information

Name	Used for
HTTP	HyperText Transfer Protocol is used to transfer the hypertext
FTP	File Transfer Protocol is used to transfer binary and text files over the Internet
File	Local file
Telnet	For remote login over a TCP/IP connection

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TCP/IP (Transmission Control Protocol /Internet Protocol.)	TCP/IP consists of a set of two protocols i.e. Transfer Control Protocol and Internet Protocol. Transfer Control Protocol controls the flow of data and is a reliable service protocol. Every computer in a network has a unique The IP address associated with it. IP identifies and reaches the target computer on the network.
News	Newsgroup /News article
UDP	User Datagram Packet is used to transfer data between two computers. It is an unreliable protocol, offering no guarantee for data delivery

Q90. Answer: (b) Liver

Concept:-

• Liver: The liver is the largest gland of the body.

• Location: in the abdominal cavity, just below the diaphragm.

• Weight: 1.4 to 1.5 kg

Important Points

• Glycogen is the storage form of carbohydrates in mammals. In humans, the majority of glycogen is stored in skeletal muscles (~500 g) and the liver (100 g).

• Glycogen is the liver released into the bloodstream when your blood sugar is low, such as between meals or during exercise.

• At least 25 grams of carbohydrates circulate in your bloodstream at a time.

• The sugar in your bloodstream that was released from your liver can then travel to the organ that needs it, such as the brain or exercising muscles.

Q91. Answer: (b) 1024 kilobytes

The correct answer is option 2, i.e. 1024 kilobytes

Additional Information

• 1 Kilobyte = 1024 Bytes.

• 1 Megabyte = 1024 Kilobytes.

• 1 Gigabyte = 1024 Megabytes.

• 1 Terabyte = 1024 Gigabytes.

• Bits are usually assembled into a group of eight to form a byte.

• A bit can hold only one of two values: 0 or 1.

Q92. Answer: (a) Shooting

The correct answer is option 1, i.e. Shooting.

• Anjum Moudgil is an Indian Shooter.

• At ISSF World Cup in Beijing in April 2019, Anjum Moudgil and Divyansh Singh Panwar opened the country's gold account in the 10 metres Air Rifle Mixed Team event.

• ISSF stands for International Shooting Sports Federation.

• The Headquarter of the International Shooting Sports Federation (ISSF) is located in Munich, Germany.

• It was founded in 1907.

• Vladimir Lisin is the current president of ISSF.

Q93. Answer: (a) Gibraltar

The correct answer is option 1, i.e. Gibraltar.

• The strait of Gibraltar separates Morocco and Spain.

• It joins the Mediterranean Sea and the Atlantic Ocean.

• A strait is a narrow channel of water that lies between two land masses and connects two larger water bodies.

Straits	Water Bodies joined	Area (two land masses)
Gibraltar	The Mediterranean Sea from the Atlantic Ocean	Europe (Spain) and Africa (Morocco)

Messina	The Tyrrhenian Sea and the Ionian Sea	The island of Sicily and mainland Italy
Kerch	Black sea and the sea of Azov	The Kerch Peninsula of Crimea in the west from the Taman Peninsula of Russia's Krasnodar Krai in the east.
Bonifacio	the Sea of Sardinia and the Tyrrhenian Sea	Corsica and Sardinia

Q94. Answer: (d) Mexico

The correct answer is option 4, i.e. Mexico.

• In Mexico, Prof. Norman Borlaug and his associates developed new varieties of wheat which were early-maturing, highly productive and disease resistant and these varieties were imported and planted in selected regions of India having adequate irrigation facilities.

• It was conclusively demonstrated that the yields from the new varieties exceeded 25 to 100 per cent compared to the yields from traditional varieties.

• High Yielding Variety Seeds (HYV seeds) are seeds that are of better quality than normal quality seeds.

• The produce from these seeds is a bit more compared to the normal ones.

• These seeds are a better option of seeds in order to obtain a healthy and surplus crop.

• These seeds have a good immune system to fight with insects and other diseases.

Q95. Answer: (c) John Maynard Keynes

The correct answer is option 3, i.e. John Maynard Keynes.

• Macroeconomics is a branch of economics that studies how an overall economy—the market systems that operate on a large scale—behaves.

• Macroeconomics studies economy-wide phenomena such as inflation, price levels, rate of economic growth, national income, gross domestic product (GDP), and changes in unemployment.

• Macroeconomics, as it is in its modern form, is often defined as starting with John Maynard Keynes and the publication of his book The General Theory of Employment, Interest, and Money in 1936.

Q96. Answer: (b) Ensuring minimum income for farmer families who owns cultivable land.

The correct answer is option 2, i.e. ensuring a minimum income for farmer families who own up to two hectares of cultivable land.

• Pradhan Mantri Kisan Samman Nidhi (PM-KISAN):

• Scheme Type: Central Sector Scheme.

• Ministry: Ministry of Agriculture and Farmer's Welfare.

• Launched Year: 2019

• Place of Launch: Gorakhpur, Uttar Pradesh

• Beneficiaries: All farmers irrespective of landholding (earlier land up to 2 hectares) are eligible for financial support.

• Financial Support: 6000 Rs. in three equal instalments of Rs.2000/- each every four months.

• Funds will be directly transferred to the bank account of the beneficiaries under the direct benefit scheme.

• Budget allocation: 20,000 crore for 2018-19, 75,000 crores for 2019-20.

Q97. Answer: (b) Chandelas

The correct answer is option 2, i.e. Chandelas.

• Chandela rulers established their religious capital in Khajuraho.

• The Chandelas of Jejakabhukti was a royal dynasty in Central India.

• Nannuka was the founder of Chandela dynasty of India.

• They ruled much of the Bundelkhand region (then called Jejakabhukti) between the 9th and the 13th centuries.

• The Chandelas are well known for their art and architecture, most notably for the temples at their original capital Khajuraho.

Q98. Answer: (c) cVigil

The correct answer is option 3, i.e. cVigil.

• Election Commission has launched a mobile application named ‘cVigil’ for citizens to share proof of malpractices by political parties, their candidates and activists at the time of 17th Loksabha Elections

• The application facilitates the sharing of geo-tagged photographic and video evidence without disclosing the sender’s identity.

• The app will be operational only in election-bound states where dates of polling have been announced.

• It has inbuilt foolproof location tracking and camera, video recording which will act as evidence collected on the spot.

• They can submit this information within seconds without any hassle and physical presence.

Q99. Answer: (b) Karen Uhlenbeck

The correct answer is option 2, i.e. Karen Uhlenbeck.

• Mathematician Karen Uhlenbeck received the 2019 Able Prize in Mathematics.

• Karen Uhlenbeck was the first woman to be awarded the Abel Prize in history.

• The Abel Prize is an annual prize awarded by the King of Norway to excellent mathematicians.

• It is named after the famous Norwegian mathematician Niels Henrik Abel.

• Karen Uhlenbeck, a professor at the University of Texas won the prize for her pioneering achievements in geometric partial differential equations, gauge theory and integrable systems, and for the fundamental impact of her work on analysis, geometry and mathematical physics.

Q100. Answer: (d) Compressed Biogas

The correct answer is option 4, i.e. compressed biogas

• Union Petroleum Minister launched 'SATAT' initiative to promote Compressed Bio-Gas (CBG) as an alternative fuel.

• The initiative is aimed at providing a Sustainable Alternative Towards Affordable Transportation (SATAT) as a developmental effort that would benefit both vehicle-users as well as farmers and entrepreneurs.

• The use of CBG will also help bring down dependency on crude oil imports.

• Shri Dharmendra Pradhan is the Union Minister of Petroleum and Natural Gas & Skill Development and Entrepreneurship.

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