Indian Air Force AFCAT Mock 01

Q1. The passage describes
(a) how smallpox may be treated
(b) how vaccines were manufactured in England
(c) the dangers of vaccination especially for children
(d) the gradual acceptance of vaccination as a preventive against smallpox

Q2. Vaccination sometimes proved harmful because
(a) vaccination was a dangerous practice
(b) some of the vaccines used were of a poor hygienic standard
(c) there are physiological difference between cows and human beings
(d) vaccination is given at a very early age

Q3. People hastened to get themselves vaccinoid because
(a) many doctors supported Jenner's claims
(b) fear of the terrible disease drove them to take the risk of vaccination
(c) supplies of pure vaccine had now become available
(d) the practice of vaccinating had spread all over the world

Q4. Vaccination was intended by Jenner to
(a) deceive people suffering from smallpox
(b) delay the death of smallpox victims
(c) build up a defence against smallpox germs
(d) prevent cows from spreading the disease

Q5. With reference to the passage, consider the following statements:
1. Many doctors did not believe that Jenner was a doctor.
2. There are no outbreaks of smallpox nowadays.
Which of the statements given above is/are correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Directions (6-10): Each of the following sentences has a black space and four words are given below it. Select the word you consider most appropriate for the blank space.

Q6. The sales of Jules Verne's books continue to _____ like a runaway balloon.
(a) revive
(b) soar
(c) flit
(d) advance

Q7. My CEO, however, feels that having time off is a _____ crime.
(a) clamor
(b) ubiquitous
(c) heinous
(d) repertoire

Q8. Her ability to inspire others is her best _____ .
(a) attribute
(b) feasible
(c) coherence
(d) acumen

Q9. Anaya _____ in her remote colony since January 1998.
(a) was living
(b) has lived
(c) has been living
(d) lived

Q10. Yesterday the weather was not good; it was _____ pleasant.
(a) fairly
(b) a little
(c) rather
(d) to some extent

Q11. A professional soldier hired to serve in a foreign army
(a) Mercenary
(b) Liquidator
(c) Venal
(d) Hireling

Q12. An army of worshippers
(a) Congregation
(b) Conflagration
(c) Configuration
(d) Confrontation

Q13. To surround with armed forces
(a) Seize
(b) Attack
(c) Cease
(d) Besiege

Q14. A person who wishes to throw over all establishments
(a) Rebel
(b) Anarchist
(c) Terrorist
(d) Hooligan

Q15. A dramatic performance
(a) Mask
(b) Mosque
(c) Masque
(d) Mascot

Directions (16-20): Each questions in this section has a sentence with three parts labelled (A), (B) and (C). Read each sentence to find out whether there is any error in any part and indicate your answer in the Answer Sheet against the corresponding letter i.e. (A) or (B) or (C). If you find no error, your answer should be indicated as (D).

Q16. The economic policy of the government (A) / is not quite in variance with the idea of (B) / the socialist pattern of society. (C) / No Error (D)
(a) A
(b) B
(c) C
(d) D

Q17. Concurrent with this programme (A) / educational institutions may be urged (B) / to inculcate patriotism in each and every one of its pupils. (C) No Error (D)
(a) A
(b) B
(c) C
(d) D

Q18. If a man diligently seeks to come into the contact (A) / with the best that has been thought and said in this world (B) / he will become simple and selfish. (C) / No Error (D)
(a) A
(b) B
(c) C
(d) D

Q19. The disclosure of the synopsis of Thakkar Commission report (A) / on the assassination of Mrs. Indira Gandhi (B) / has raised several vital questions. (C) / No Error (D)
(a) A
(b) B
(c) C
(d) D

Q20. The interviewer asked the candidate (A) / to what district (B) / he came from. (C) / No Error (D)
(a) A
(b) B
(c) C
(d) D

Q21. Synonym of **"ABANDON"**
(a) Try
(b) Join
(c) Keep with
(d) Forsake

Q22. Antonym of **"Accomplish"**
(a) Disagreeable
(b) Fail
(c) Scatter
(d) Improper

Directions (23-25): Each of the following questions consists of a word in capital letters, followed by four words or group of words. Select the word or group of words that is most similar in meaning to the word in capital letters.

Q23. CONSIGNEE
(a) Delegate
(b) Representative
(c) Nominee
(d) Messenger

Q24. TRAMP
(a) Wanderer
(b) Cheater
(c) Seller
(d) Pilgrim

Q25. CONTEMPLATION
(a) Consideration
(b) Mutilation
(c) Deliberation
(d) Sophistication

Q26. The two forms of democracy are:
(a) Parliamentary and Presidential
(b) Direct and Indirect
(c) Monarchical and Republican
(d) Parliamentary and King

Q27. Match the following

	List-I (Schedule in the Constitution of India)	List-II (Subject)
A.	Tenth Schedule	1. Language
B.	Eighth Schedule	2.Provisions as to disqualification on the grounds of defection
C.	First Schedule	3. Validation of certain Acts and Regulations
D.	Ninth Schedule	4. The States

Codes
　　A　B C D
(a) 4 3 2 1
(b) 2 1 4 3
(c) 4 1 2 3
(d) 2 3 4 1

Q28. Consider the following events:
1. Indigo Revolt
2. Santhal Rebellion
3. Deccan Riot
4. Mutiny of the Sepoys
The correct chronological sequence of these events is:
(a) 4, 2, 1, 3
(b) 4, 2, 3, 1
(c) 2, 4, 3, 1
(d) 2, 4, 1, 3

Q29. The Gupta gold coins were known as
(a) Dinaras
(b) Karsapana
(c) Rupaka
(d) Nisaka

Q30. A level of atmosphere which is composed partly of electrons and positive ions is called-
(a) Troposphere
(b) Ionosphere
(c) Stratosphere
(d) Mesosphere

Q31. Given below are two statements one labeled as Assertion (A) and the other labeled as Reason (R).
Assertion (A) : Areas near the equator receive rainfall throughout the year.
Reason (R) : High temperatures and high humidity cause convectional rain in most afternoons near the equator.
In the context of the above two statements, which one of the following is correct?
(a) Both A and R are true and R is the correct explanation of A
(b) Both A and R true but R is not a correct explanation of A
(c) A is true but R is false
(d) A is false but R is true

Q32. How does La-Nina affect the Pacific Ocean?
(a) Decreases salinity of ocean
(b) Cools downs the temperature of water
(c) Maintains stable temperature of water
(d) Increases salinity of ocean

Q33. Match List-I (Valley) with List-II (State) and select the correct answer using the codes given below the lists:

List-I (Valley)		List-II (State)
A.	Markha Valley	1. Sikkim
B.	Dzukou Valley	2. Himachal Pradesh
C.	Sangla Valley	3. Ladakh
D.	Yumthang Valley	4. Nagaland

Codes :
(a) A-2; B-4; C-3; D-1
(b) A-3; B-1; C-2; D-4
(c) A-2; B-1; C-3; D-4
(d) A-3; B-4; C-2; D-1

Q34. Which among the following is the Biggest Borrower in India?
(a) Indian Government
(b) Reserve Bank of India
(c) Indian Railways
(d) State Governments

Q35. The existence of a parallel economy (black money) _____.
(a) Makes economy more competitive
(b) Makes the monetary policies less effective
(c) Ensures a better distribution of income and wealth
(d) Ensures increasing productive investment

Q36. If a body is moving on a circular path, what is its average velocity if it completes one cycle in one second?
(a) Average velocity depends upon time taken to complete one cycle
(b) One
(c) Average velocity is same as average speed
(d) Zero

Q37. Assertion (A) : The boiling point of water decreases as the altitude increases.
Reason (R) : The atmospheric pressure increases with altitude.
Codes :
(a) Both A and R are true and R is the correct explanation of A
(b) Both A and R are true but R is not a correct explanation of A
(c) A is true but R is false
(d) A is false but R is true

Q38. With reference to ionic compounds, consider the following statements:
1. Ionic compounds are insoluble in alcohol.
2. Ionic compounds in the solid state are good conductor of electricity.
Which of these statements is/are correct?
(a) Only 1
(b) Only 2
(c) Both 1 and 2
(d) Neither 1 nor 2

Q39. Hydrophobia is caused by –
(a) Bacteria
(b) Fungus
(c) Virus
(d) Protozoan

Q40. In which city, the 17th Pravasi Bhartiya Divas will be held in January 2023?
(a) Varanasi
(b) New Delhi
(c) Banglore
(d) Indore

Q41. Who has inaugurated a National Seminar on 'Introspection: Armed Forces Tribunal' in New Delhi?
(a) Ajit Doval
(b) Rajnath Singh
(c) Narendra Modi
(d) Amit shah

Q42. Who has become the first Indian footballer to play at the UEFA Women's Champions League 2022?
(a) Aditi Chauhan
(b) Pyari Xaxa
(c) Manisha Panna
(d) Manisha Kalyan

Q43. Ezra cup is associated with which sports?
(a) Hockey
(b) Polo
(c) Rowing
(d) Football

Q44. Which technology company is to set up a Centre of excellence for Artificial Intelligence (AI) with GeM?
(a) Microsoft
(b) IBM
(c) Apple
(d) Infosys

Q45. ISRO collaborated with which company to launch India's first High Throughput Satellite (HTS)?
(a) EchoStar Corporation
(b) OneWeb Telecommunications
(c) Hughes Communications India Ltd.
(d) Aletheia Technologies Pvt. Ltd

Q46. Who conducted successful test flights of Very Short Range Air Defence System (VSHORADS) missiles at the Integrated Test Range, Chandipur, Odisha on 27th Sep 2022?
(a) HAL
(b) DRDO
(c) ISRO
(d) Bharat Electronics

Q47. The Defense Ministry in September 2022 signed a deal worth how many crores with BrahMos Aerospace Pvt Ltd to procure additional dual-role capable missiles for the Navy?
(a) ₹1,700-crore
(b) ₹1,950-crore
(c) ₹2,200-crore
(d) ₹2,500-crore

Q48. Where is Indian Air Force Academy located?
(a) Shimla
(b) Hyderabad
(c) Dehradun
(d) Lucknow

Q49. Where is the Headquarter of International Committee of the Red Cross located?
(a) Beijing, China
(b) Geneva, Switzerland
(c) Washington, DC
(d) London

Q50. The 7th edition of Exercise Sangam, a joint Naval Special Forces exercise between US Navy SEALs and?
(a) Indian Navy SEALs
(b) Indian Navy MARCOs
(c) Indian Navy Commando
(d) Both a and b

Q51. The successive discount of 25%, 20% and 10% is equivalent to a single discount of
(a) 46%
(b) 48%
(c) 54%
(d) 44%

Q52. A shopkeeper marks his good at a price such that after giving a discount of 25%, the gain is 20%. If the marked price of the article is Rs 736. What is the cost price of the article?
(a) Rs 450
(b) Rs 455
(c) Rs 460
(d) Rs 440

Q53. If a train runs with the speed of 36 km/h, it reaches its destination 15 minutes late. However, if its speed is 45 km/h, if is late by only 4 minutes. The correct time to cover its journey in minutes is:
(a) 22
(b) 27
(c) 25
(d) 40

Q54. 36 persons working 8 hrs a day can do 3 units of work in 12 days. How many persons are required to do 5 units of that work in 16 days If they work for 6 hrs a day?
(a) 50
(b) 55
(c) 60
(d) 45

Q55. The efficiency of A, B and C are in the ratio 5 : 6 : 9. Working together, they can complete a work in 18 days. In how many days can B alone complete 25% of that work?
(a) 18
(b) 10
(c) 15
(d) 16

Q56. In an examination, 54% of the candidates passed in science and 42% failed in mathematics. If 32% failed in both subjects, what percentage passed in both subjects?
(a) 56%
(b) 48%
(c) 32%
(d) 44%

Q57. The income of A is 24% more than the income of B. By what percent is the income of B less than the income of A ?
(a) $\frac{150}{7}\%$
(b) $\frac{600}{29}\%$
(c) $\frac{500}{31}\%$
(d) $\frac{600}{31}\%$

Q58. In a class of 50 students, 40% are girls. The average weight of the boys is 62 kg and that of the girls is 58 kg. What is the average weight (in kg) of the whole class?
(a) 60.4
(b) 60.2
(c) 60.8
(d) 60.6

Q59. In an alloy, Zinc and Copper are in the ratio 1 : 2. In the second alloy, the same elements are in the ratio 2 : 3. If there two alloys combined to form a new alloy in which two elements are in the ratio 5 : 8, the ratio of these two alloys in the new alloys is –
(a) 3 : 10
(b) 7 : 3
(c) 3 : 7
(d) 10 : 3

Q60. A boat can go 30 km downstream and 24 km upstream in 2 hrs 27 minutes. Also, it can go 10 km downstream and 4 km upstream in 37 minutes. What is the speed of the boat upstream (in km/h)?
(a) 24
(b) 18
(c) 22
(d) 20

Q61. The sides of a triangle are 8 cm. 15 cm. and 17cm respectively. At each of its vertices, circles of radius 3.5 cm are drawn. What is the area of the triangle excluding the portion covered by the sectors of the circles $\left(\pi = \frac{22}{7}\right)$?
(a) 23.5 cm²
(b) 21.5 cm²
(c) 47 cm²
(d) 40.75 cm²

Q62. 6 cubes, each of edge 4 cm, are joined end to end. What is the total surface area of the resulting cuboid?
(a) 416 cm²
(b) 496 cm²
(c) 576 cm²
(d) 208 cm²

Q63. $\frac{6.75\times6.75\times6.75-4.25\times4.25\times4.25}{67.5\times67.5+42.5\times42.5+67.5\times42.5}$ is equal to:
(a) 2.5
(b) 0.25
(c) 0.0025
(d) 0.025

Q64. $5\frac{1}{5} - \left[3\frac{1}{2} - \left\{\frac{5}{6} - \left(\frac{3}{5} + \frac{1}{10} - \frac{4}{15}\right)\right\}\right]$ is equal to:
(a) $\frac{21}{10}$
(b) $\frac{7}{5}$
(c) $\frac{7}{3}$
(d) $\frac{8}{3}$

Q65. If the six digit number 4x4y96 is divisible by 88, then what will be the value of (x + 2y)
(a) 13
(b) 10
(c) 12
(d) 11

Q66. A bag contains 6 black and 8 white balls. One ball is drawn at random. What is the probability that the ball drawn is white?
(a) 1/7
(b) 4/7
(c) 1/2
(d) ¼

Q67. How many times are the hands of a clock at right angle in a day?
(a) 11
(b) 20
(c) 44
(d) 22

Q68. What will come at the place of question mark ?

1, 9, 25, 49, ?, 121.

(a) 100

(b) 121

(c) 64

(d)81

Q69. What will come at the place of question mark?

4, 7, 12, 19, 28, ?

(a) 36

(b) 40

(c) 44

(d)39

Q70. $[8(3.75)^3+1/(7.5)^2-6.5]$ is equal to :

(a) 7.5

(b) 2.9

(c) 4.4

(d)8.5

Q71. Light : Sun : : Heat : ?

(a)Electricity

(b)Moon

(c)Fire

(d)Star

Q72. 3 : 10 : : 8 : ?

(a)10

(b)13

(c)17

(d)14

Q73. In a certain code Language

134 means good and tasty

478 means see good picture

729 means picture are faint

Which number has been used here for faint?

(a)9

(b)2

(c)data are inadequate

(d)1

Q74. If SISTER is coded as 535301, UNCLE is coded as 84670 and BOY is coded as 129. Find the code word for SON ?

(a)524

(b)913

(c)872

(d)641

Directions (75-76): In each of the following questions you are given a combination of alphabets and/or numbers followed by four alternatives (1), (2), (3) and (4). Choose the alternative **which is closely resembles the mirror image of the given combination.**

Q75. Choose the alternative which is closely resembles the mirror image of the given combination.

ANS43Q12

(1) 21Q34SNA   (2) ANS43Q12

(3) SNA3Q4Q21   (4) SNA3Q4Q21

(a)1

(b)2

(c)3

(d)4

Q76. Choose the alternative which is closely resembles the mirror image of the given combination.

TARAIN1014A

(1) A4101NIARAT   (2) A1014N1ARAT

(3) A1014TARAIN   (4) A4101NIARAT

(a)1

(b)2

(c)3

(d)4

Directions (77-79): In each of the following questions, you are given a figure (X) followed by four alternative figures (1), (2), (3) and (4) such that figure (X) is embedded in one of them. Trace out the alternative figure which contains fig. (X) as its part.

Q77. Find out the alternative figure which contains figure (X) as its part.
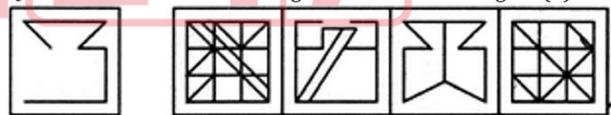
(a)1

(b)2

(c)3

(d)4

Q78. Find out the alternative figure which contains figure (X) as its part.
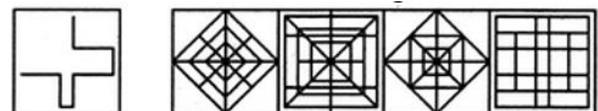
(a)1

(b)2

(c)3

(d)4

Q79. Find out the alternative figure which contains figure (X) as its part.

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

Directions (80-82):
In each of the following questions, select a figure from amongst the four alternatives, which when placed in the blank space of figure (X) would complete the pattern.

Q80. Identify the figure that completes the pattern.

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

Q81. Identify the figure that completes the pattern.

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

Q82. Identify the figure that completes the pattern.

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

Directions (83-84): Each of these questions is based on the following information:
A + B means A is the mother of B.
A - B means A is the sister of B.
A * B means A is the father of B.
A β B means A is the brother of B.

Q83. Which of the following means Q is the grandfather of P?
(a)P + N * M * Q
(b)Q * N * M + P
(c)Q β M β N * P
(d)None of these

Q84. Which of the following means that N is the maternal uncle of M?
(a)N β P - L + E - M
(b)N - Y + A β M
(c)M - Y * P - N
(d)N β C + F * M

Q85. Which symbol will be on the face opposite to the face with symbol * ?
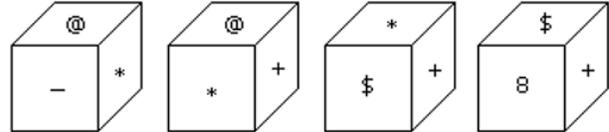
(a)@
(b)$
(c)8
(d)+

Q86. Statements: Some ants are parrots. All the parrots are apples.
Conclusions:
All the apples are parrots.
Some ants are apples.
(a)Only (1) conclusion follows
(b)Only (2) conclusion follows
(c)Either (1) or (2) follows
(d)Neither (1) nor (2) follows
(e)Both (1) and (2) follow

Q87. Statements: Some papers are pens. All the pencils are pens.
Conclusions:
Some pens are pencils.
Some pens are papers.
(a)Only (1) conclusion follows
(b)Only (2) conclusion follows
(c)Either (1) or (2) follows
(d)Neither (1) nor (2) follows
(e)Both (1) and (2) follow

Q88. Radha moves towards South-East a distance of 7 km, then she moves towards West and travels a distance of 14 km. From here she moves towards North-West a distance of 7 km and finally she moves a distance of 4 km towards east. How far is she now from the starting point?
(a)3 km
(b)4 km
(c)10 km
(d)11 km

Q89. Sundar runs 20 m towards East and turns to right and runs 10 m. Then he turns to the right and runs 9 m. Again he turns to right and runs 5 m. After this he turns to left and runs 12 m and finally he turns to right and 6 m. Now to which direction is Sundar facing?
(a)East
(b)West
(c)North
(d)South

**Q90.** Look at this series: V, VIII, XI, XIV, __, XX, ... What number should fill the blank?
(a)IX
(b)XXIII
(c)XV
(d)XVII

Q91. Look at this series: 70, 71, 76, __, 81, 86, 70, 91, ... What number should fill the blank?
(a)70
(b)71
(c)80
(d)96

Directions (92-95): In each problem, out of the four figures marked (a) (b) (c) and (d) three are similar in a certain manner. However, one figure is not like the other three. Choose the figure which is different from the rest.
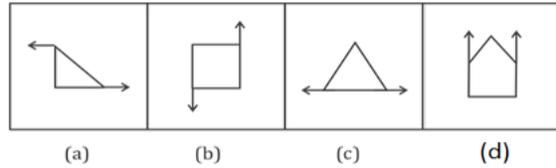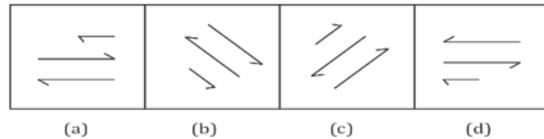
Q92.
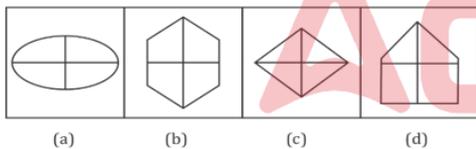
(a) A
(b) B
(c) C
(d) D

Q93.
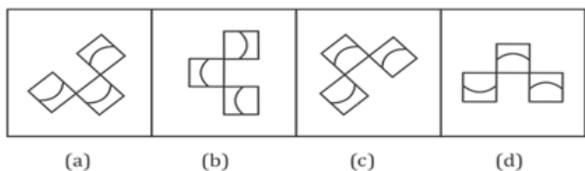
(a) A
(b) B
(c) C
(d) D

Q94.

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

Q95.

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

Directions (96-100): Each of these questions given below contains three elements. These elements may or may not have some inter-linkage. Each group of elements may fit into one of these diagrams at (a), (b), (c) or (d). you have to indicate the group of elements which correctly fits into the diagrams.

Q96. Which of the following diagrams indicates the best relation between Table, Chair and Furniture.
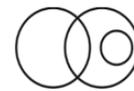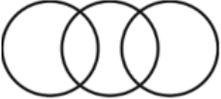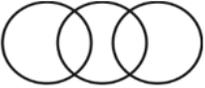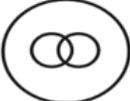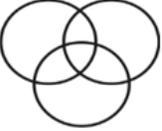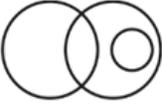(a)

(b)

(c)

(d)

Q97. Which of the following diagrams indicates the best relation between Mothers, Doctors and Homo Sapiens.

(a)

(b)

(c)

(d)

Q98. Which of the following diagrams indicates the best relation between Library, Books and Magazines?

(a)

(b)

(c)

(d)

Q99. Which of the following diagrams indicates the best relation between India, Uttar Pradesh and Madhya Pradesh

(a)

(b)

(c)

(d)

Q100. Which of the following diagrams indicates the best relation between Students, Players and Audience

(a)

(b)

(c)

(d)

Solutions

S1. Ans.(d)
Sol. The gradual acceptance of vaccination as a preventive against small pox.

S2. Ans.(b)
Sol. Some of the vaccines used were of a poor hygienic standard.

S3. Ans.(b)
Sol. Fear of the terrible disease drove them to take the risk of vaccination.

S4. Ans.(c)
Sol. Build up a defence against small pox germs.

S5. Ans.(b)
Sol. Only 2 (there is no outbreaks of smallpox nowadays).

S6. Ans.(b)
Sol. Soar

S7. Ans.(c)
Sol. Henious

S8. Ans.(a)
Sol. Attribute

S9. Ans.(c)
Sol. has been living

S10. Ans.(a)
Sol. Fairly

S11. Ans.(a)
Sol. A professional soldier hired to serve in a foreign army - Mercenary

S12. Ans.(a)
Sol. An army of worshippers- "Congregation"

S13. Ans.(d)
Sol. Besiege: surround (a place) with armed forces in order to capture it or force its surrender.

S14. Ans.(b)
Sol. 'A person who wishes to throw over all establishments - **Anarchist**'

S15. Ans.(c)
Sol. Masque: a form of amateur **dramatic** entertainment, popular among the nobility in 16th- and 17th-century England

S16. Ans.(b)
Sol. Replace 'in' by 'at'.

S17. Ans.(c)
Sol. Replace 'its' by 'their' as the subject 'educational institutions' is plural and hence it will take plural verb.

S18. Ans.(a)
Sol. Remove 'the' before contact as it is not meant for a particular contact but a contact in general. Moreover, its use is superfluous here.

S19. Ans.(a)
Sol. Add 'The' before Thakkar Commission.

S20. Ans.(b)
Sol. Replace 'to what' by 'which'.

S21. Ans.(a)
Sol. Synonym of ABANDON is "Forsake". Forsake means to leave a person or a place for ever.

S22. Ans.(a)
Sol. Antonym of Accomplish is "Fail".

S23. Ans.(c)
Sol. Consignee: the person or company to whom goods or documents are officially sent or delivered.
Representative: a person chosen or appointed to act or speak for another or others, in particular.
Nominee: a person or company, not the owner, in whose name a stock, bond, or company is registered.
Hence Option C is the correct choice.

S24. Ans.(a)
Sol. Tramp: a person who travels from place to place on foot in search of work or as a vagrant.
Wanderer: a person who roams about without a fixed route or destination.
Hence Option A is the correct choice.

S25. Ans.(a)
Sol. Contemplation: serious and quiet thought for a period of time.
Consideration: careful thought, typically over a period of time.
Hence Option A is the correct choice.

S26. Ans.(a)
Sol. Parliamentary democracy is a representative democracy where government is appointed by representatives as opposed to a presidential rule wherein the President is both head of state and the head of government and is elected by the voters. Under a parliamentary democracy, government is exercised by delegation to an executive ministry and subject to ongoing review, checks and balances by the legislative parliament elected by the people.

Presidential Democracy is a system where the public elects the president through free and fair elections. The president serves as both the head of state and head of government controlling most of the executive powers. The president serves for a specific term and cannot exceed that amount of time.

S27. Ans.(b)
Sol. Schedule X was added by 52nd amendment in 1985. It contains provisions of disqualification on the grounds of defection.
Schedule VIII contains List of 22 languages of India recognized by Constitution.
Schedule 1 deals with the List of States & Union Territories.
Schedule IX contains acts & orders related to land tenure, land tax, railways, and industries. Added by Ist amendment in 1951. Laws under Schedule IX are beyond the purview of judicial review even though they violate fundamental rights enshrined under part III of the Constitution.

S28. Ans.(d)
Sol. Santhal Rebellion (1855-56)> Mutiny of the Sepoys(1857-1858)> Indigo Revolt(1859) >Deccan Riot (1875) .

S29. Ans.(a)
Sol. The abundance of gold coins from the Gupta era has led some scholars to regard this phenomenon as the 'rain of gold'. The Gupta gold coin is known as dinaras.

S30. Ans.(b)
Sol. Ionosphere is the layer of atmosphere which is composed partly of electrons and positive ions.

S31. Ans.(a)
Sol. The assertion is correct and reason correctly explains the assertion because due to high temperature the atmospheric air gets heated and rises up. It cools down and precipitates while the cool air descends down to take the place of the vaccum.

S32. Ans.(b)
Sol. During a period of La Nina, the sea surface temperature across the equatorial Eastern Central Pacific Ocean will be lower than normal by 3 to 5 °C. Thus it cools downs the temperature of water.

S33. Ans.(d)
Sol. The Markha River is a river in Ladakh, India. It is a tributary of the Zanskar River and starts at the junction of the Langtang Chu and Nimaling Chu. Villages along the river valley include Skiu, Markha, Umlung and Hangkar. The Markha River lies within the Hemis National Park.

The Dzukou/Dzuko Valley is a valley located at the border of the states of Manipur and Nagaland in northeast India. This valley is well known for its natural environment, seasonal flowers and flora and fauna. It is situated at an altitude of 2452 m above sea level. The rare Dzukou Lily is found only in this valley.
Sangla is a town in the Baspa Valley, also referred to as the Sangla valley, in the Kinnaur District of Himachal Pradesh, India, close to the Tibetan border.
The Yumthang Valley or Sikkim Valley of Flowers sanctuary, is a nature sanctuary with river, hot springs, yaks and grazing pasture on rolling meadows surrounded by the Himalayan mountains in the North Sikkim district of Sikkim state in India.

S34. Ans.(a)
Sol. Indian government is the biggest borrower in India and its prime lender is RBI.

S35. Ans.(b)
Sol The Parallel Economy (black money) will ruin the entire economic development of the country and adversely affect the monetary policy.

S36. Ans.(d)
Sol. When a body is moving in a circular path, its average velocity when it complete one cycle in one second is zero.

S37. Ans.(c)
Sol. The boiling point of an element or a substance is the temperature at which the vapour pressure of the liquid equals the environmental pressure surrounding the liquid. As altitude increases, atmospheric pressure decreases, so boiling point decreases, so the liquid would boil at a lower temperature.

S38. Ans.(a)
Sol. Ionic compound is a chemical compound in which ions are held together in a lattice structure by ionic bonds. Following the aphorism, "like dissolves like", ionic compounds dissolve in polar solvents, especially those that ionize, such as water and ionic liquids. They are usually appreciably soluble in other polar solvents such as alcohols, acetone. Solid ionic compounds cannot conduct electricity because there are no mobile ions or electrons present in the lattice.

S39. Ans.(c)
Sol. Hydrophobia is the old name of Rabies which is a viral disease. Its virus affects the nervous system.

S40. Ans.(d)
Sol. The 17th Pravasi Bhartiya Divas (PBD) will be held at Indore in January 2023. Pravasi Bharatiya Divas is celebrated every year on 9 January to mark the contribution of the overseas Indian community in the development of India.

S41. Ans.(b)
Sol. Rajnath Singh inaugurated National Seminar on 'Introspection: Armed Forces Tribunal' in New Delhi.

S42. Ans.(d)
Sol. Manisha Kalyan has become the first Indian footballer to play at the UEFA Women's Champions League 2022.

S43. Ans.(b)
Sol. The Ezra Cup is a popular polo tournament conducted annually in India. The Calcutta Polo Club runs this oldest and first ever Polo Trophy. The first Ezra Cup was held in 1880. After a period of inactivity, it has now been revived by Mr. Keshav Bangur, Calcutta Polo Club's president.

S44. Ans.(b)
Sol. Global technology company IBM will set up an Artificial Intelligence Centre of Excellence with the Government e-Marketplace (GeM).
The CoE aims to bring in transparency, efficiency and cost saving in the public procurement process. The CEO of IBM announced this during his address at the RAISE 2020 AI summit. The company is working with the Karnataka state and NITI Aayog in precision agriculture solutions using AI.

S45. Ans.(c)
Sol. India's first High-Throughput Satellite (HTS) broadband service was launched on Monday(12th Sep 2022) with support from the Indian Space Research Organisation (ISRO). Hughes Communications India Private Limited (HCI), a leading provider of broadband satellite and managed network services, announced the commercial launch of the HTS service at an event held in Le Meridien Hotel, New Delhi.
HCI's HTS broadband service will combine Ku-band capacity from ISRO's GSAT-11 and LSAT-29 satellites with Hughes JUPITER Platform ground technology.

S46. Ans.(b)
Sol. Defence Research and Development Organization(DRDO) has conducted two successful test flights of Very Short Range Air Defence System missiles. The test flight was conducted at the Integrated Test Range in Chandipur, Odisha on 27th Sep 2022.
* The Very Short Range Air Defence System is a Man Portable Air Defence System, designed and developed by DRDO in collaboration with Indian industry partners.
* The missile is designed to neutralize low-altitude aerial threats at short ranges. The design of the missile including the launcher has been highly optimized to ensure easy portability.
* Defence Minister Rajnath Singh has complimented and appreciated the efforts of DRDO and industry partners. He said, the new missile equipped with modern technologies will give a further technological boost to the Armed Forces. Chairman of DRDO Dr Samir V Kamatal also congratulated the entire team for this tremendous success..

S47. Ans.(a)
Sol. The defense ministry on Thursday(22nd Sep 2022) signed a ₹1,700-crore contract with BrahMos Aerospace Pvt Ltd for buying additional dual-role capable missiles for the navy, a move that will provide impetus to Aatmanirbharta (self-reliance) in defence production, the ministry said in a statement.
"Induction of these dual-role capable missiles is going to significantly enhance the operational capability of Indian Navy fleet assets," it added. Dual role capability refers to the use of BrahMos missile for land as well as anti-ship attacks.
BrahMos variants can be launched from land, air and sea, and all three variants are in service in the Indian armed forces.
In May, India successfully fired an extended range variant of BrahMos missile from a Sukhoi-30 fighter aircraft, with the weapon achieving a direct hit on the designated target in the Bay of Bengal.

S48. Ans.(b)
Sol. Indian Air Force Academy, Dundigal (ICAO: VODG) is a Defence Service training institute located in Medchal-Malkajgiri district 43 km (27 mi) from Hyderabad, in the Indian state of Telangana.

S49. Ans.(b)
Sol. International Committee of the Red Cross-Geneva, Switzerland

S50. Ans.(b)
Sol. The 7th edition of Exercise Sangam, a joint Naval Special Forces exercise between Indian Navy MARCOs and US Navy SEALs commenced in Goa on December 1

S51. Ans.(a)
Sol.

$$\begin{array}{cc} 4 & 3 \\ 5 & 4 \\ 10 & 9 \\ \hline 50 & 27 \end{array}$$

$$50 \quad 27 \searrow$$
$$23 \rightarrow 46\%$$
$$100$$

S52. Ans.(c)
Sol.

CP	MP	SP
5	8	6

$$\frac{736}{120} \times 75 = 460$$

S53. Ans.(d)
Sol.

Speed   36 : 45

time   5 : 4   ×11 → 44 min

1   ×11 → 11min
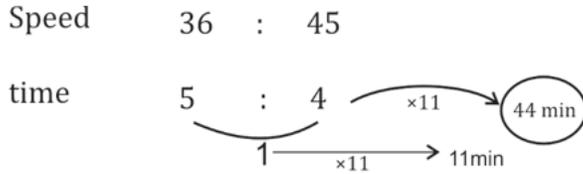
Correct time = 44 – 4 = 40 min

S54. Ans.(c)
Sol.

$$\frac{36 \times 8 \times 12}{3} = \frac{16 \times 6 \times x}{5}$$
$$x = 60$$

S55. Ans.(c)
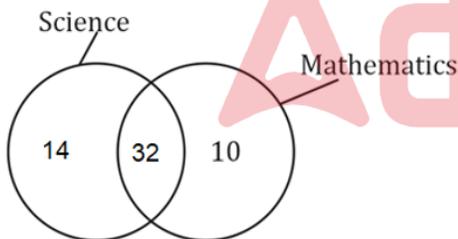**Sol.**

A Efficiency 5 : B C 6 : 9
Total work = 20 × 18
= 360
B only work = $\frac{360}{6} \times \frac{1}{4}$
B = 15 days

S56. Ans.(d)
Sol.

Failed in science = 100 – 54
= 46.

Science   Mathematics

14   32   10

Total failed = 14 + 32 + 10
= 56
Passed in Both = 100 – 56
44%

S57. Ans.(d)
Sol.

$24\% = \frac{24}{100} = \frac{6}{25}$
A   B
31   25

6

$= \frac{600}{31}\%$

S58. Ans.(a)
Sol.

40% of 50 = 20 girls
60% of 50 = 30 Boys
$Av. = \frac{30 \times 62 + 58 \times 20}{50} = \frac{3020}{50}$
= 60.4

S59. Ans.(a)
Sol.

Zinc I   Zink II
$\frac{1}{3}$ $\frac{2}{5}$

$\frac{5}{13}$

$\frac{1}{65}$ $\frac{2}{39}$
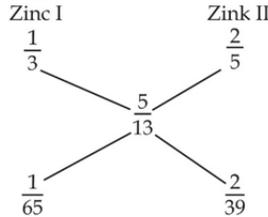
S60. Ans.(d)
Sol.

$$\frac{30}{D} + \frac{24}{V} = \frac{49}{20}$$
$$3 \times \left[\frac{10}{D} + \frac{4}{U} = \frac{37}{60}\right]$$
$$\frac{30}{D} + \frac{24}{U} = \frac{49}{20}$$
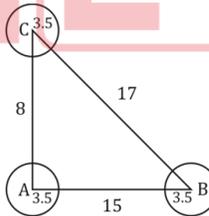$$-\frac{30}{D} \pm \frac{12}{U} = \frac{37}{-20}$$
$$\frac{12}{U} = \frac{12}{20}$$
$$U = 20$$
↓
Upstream Speed

S61. Ans.(d)
Sol.

C 3.5

8   17

A 3.5   15   3.5 B

Area of excluding portion is
Area of Δ – [Ar. Sec. A + Ar. Sec. B + Ar. Sec. C]
$$\frac{1}{2} \times 8 \times 15 - \left[\pi \times (3.5)^2 \times \frac{90}{360} + \pi(3.5)^2 \times \frac{\theta}{360} + \pi(3.5)^2 \times \frac{90-\theta}{360}\right]$$
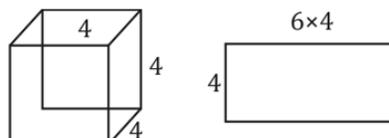$$60 - \pi \times (3.5)^2 \left(\frac{1}{4} + \frac{1}{4}\right)$$
$$60 - \frac{22}{7} \times 3.5 \times 3.5 \times \frac{1}{2}$$
$$60 - 19.25 = 40.75 \text{ cm}^2$$

S62. Ans.(a)
Sol.

4   6×4

4   4

4

To surface area 2 (lb + bh + lh)

l = 24

b = 4

h = 4

T.S.A = 2 (96 + 16 + 96)

= 2 × 208

= 416 cm²

S63. Ans.(d)

Sol.

$$\frac{a^3 - b^3}{a^2 + b^2 + ab} = (a - b) = \frac{2.5}{100} = 0.025$$

S64. Ans.(a)

Sol.

$$= \frac{26}{5} - \left[\frac{7}{2} - \left\{\frac{5}{6} - \frac{13}{30}\right\}\right] = \frac{26}{5} - \left[\frac{7}{2} - \frac{6}{15}\right]\frac{26}{5} - \frac{31}{10} = \frac{21}{10}$$

S65. Ans.(a)

Sol. 4 x 4 y 96

No. divisible by 88 is also divisible by 8 and 11 divisibility Rule

for 8 = last three digit divide by 8.

Divisibility rule for 11 = sum of alternate digit are equal.

4+4+9 = x + y + 6

17 – 6 = x + y

$$x + y = 11$$

$$\frac{y96}{8} \Rightarrow y = 2$$

x = 9

x + 2y = 3

S66. Ans.(b)

Sol. Let number of balls = (6 + 8) = 14.

Number of white balls = 8.

P (drawing a white ball) = 8/14 = 4/7.

S67. Ans.(c)

Sol. In 12 hours, they are at right angles 22 times.

In 24 hours, they are at right angles 44 times.

S68. Ans.(d)

Sol. 1^2 = 1.

3^2 = 9.

5^2 = 25.

7^2 = 49.

9^2 = 81.

11^2 = 121.

S69. Ans.(d)

Sol. First term : 4

Second term: 4+3 = 7

Third term : 7+5 = 12

Fourth term : 12+7 = 19.

Fifth term : 19+9 = 28.

Therefore,

Next Terms : 28+11 = 39

S70. Ans.(d)

Sol. Given expression :

$[8(3.75)^3+1/(7.5)^2-6.5]$

$=(2×3.75)^3+1^3/(7.5)^2-(7.5×1)+1^2$

$=(7.5)^3+1^3/(7.5)^2-(7.5×1)+1^2$

$=(a^3+b^3/a^2-ab+b^2)$

$=(a+b)(a^2-ab+b^2)/(a^2-ab+b^2)$

$=(a+b)=(7.5+1)=8.5$

S71. Ans.(c)

Sol. Sun gives-light. In the same way Fire gives heat.

S72. Ans.(c)

Sol. Ist term = 2^2 -1 =4 -1 =3

IInd term = 3^2 + 1 = 9 + 1 = 10

IIIrd term = 3^3 - 1.= 9 - 1 = 8

IVth term = 4^2 + 1 = 16 + 1 = 17

S73. Ans.(c)

S74. Ans.(a)

Sol. S I S T E R U N C L E

5 3 5 3 0 1 8 4 6 7 0

B O Y S O N

1 2 9 5 2 4

S75. Ans.(b)

S76. Ans.(d)

S77. Ans.(a)

Sol.

S78. Ans.(d)

Sol.
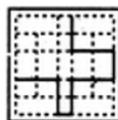
S79. Ans.(d)
Sol.

S80. Ans.(d)

S81. Ans.(c)

S82. Ans.(d)

S83. Ans.(d)

S84. Ans.(a)
Sol. N β P → N is the brother of P
P - L → P is the sister of L
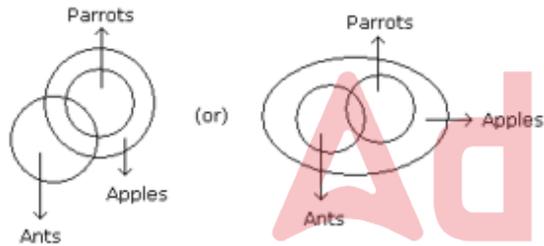L + E → L is the mother of E
E - M → E is the sister of M.
Hence, L is the mother of M, P is the maternal aunt of M and N is the maternal uncle of M.

S85. Ans.(c)
Sol. The symbols of the adjacent faces to the face with symbol * are @, -, + and $. Hence the required symbol is 8.
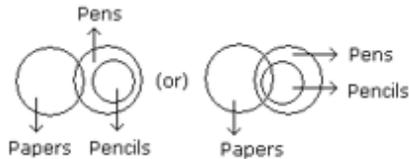
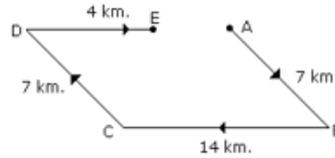**S86. Ans.(b)**
Sol.

Only (2) follow.

S87. Ans.(e)
Sol.
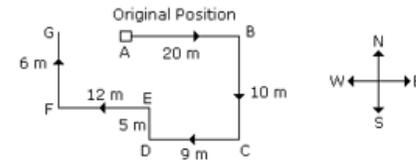

Both (1) and (2) follow.

S88. Ans.(c)
Sol.

Required distance = AE
= 14 - 4
= 10 km.

S89. Ans.(c)
Sol.

Therefore, it is clear that Sundar will face towards North.

S90. Ans.(d)
Sol. This is a simple addition series; each number is 3 more than the previous number.

S91. Ans.(a)
Sol. In this series, 5 is added to the previous number; the number 70 is inserted as every third number.

S92. Ans.(d)

S93. Ans.(b)

S94. Ans.(d)

S95. Ans.(d)

S96. Ans.(d)

S97. Ans.(a)

S98. Ans.(a)

S99. Ans.(d)

S100. Ans.(b)