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TEST BOOKLET

C

CSAT APTITUDE TEST– (4299) – 2024

Time Allowed: Two Hours

Maximum Marks: 200

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. ENCODE CLEARLY THE TEST BOOKLET SERIES **A, B, C** OR **D** AS THE CASE MAY BE IN THE APPROPRIATE PLACE IN THE ANSWER SHEET.
3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside. **DO NOT** write *anything else* on the Test Booklet.
4. This Test Booklet contains **80** items (Questions). Each item is printed in **English**. Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider most appropriate. In any case, choose **ONLY ONE** response for each item.
5. You have to mark all your responses **ONLY** on the separate Answer Sheet provided. See direction in the answers sheet.
6. All items carry equal marks. Attempt all items. Your total marks will depend only on the number of **correct responses** marked by you in the answer sheet. For **every incorrect** response **one-third** of the allotted **Marks** will be deducted.
7. Before you proceed to mark in the Answer sheet the response to various items in the Test booklet, you have to fill in some particulars in the answer sheets as per the instruction sent to you with your Admission Certificate.
8. After you have completed filling in all responses on the answer sheet and the examination has concluded, you should hand over to Invigilator only the answer sheet. You are permitted to take away with you the Test Booklet.
9. Sheets for rough work are appended in the Test Booklet at the end.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE ASKED TO DO SO

1. A person moves along an octagonal path of sides 30 metres each in such a way that for the first 30 metres he goes with a speed of 60 m/s and the next 30 metres with a speed of 15 m/s. Similarly, he continues for the rest of the octagonal path with the same alternating speed, i.e. 60 m/s and 15 m/s. Average speed of the person per round of the path (in m/s) is:
- (a) 24
(b) 28
(c) 20
(d) None of these
2. If $(x^3 + y^6)$ is positive, then which of the following must be true?
- (a) x is positive
(b) $|x^3| < |y^6|$
(c) x^3 is negative
(d) $(x + y^2)$ and $(x^2 + y^4 - xy^2)$ are either both positive or both negative
3. A mixture is composed of 5 parts of milk and one part of water. If 2 kg of water is added, the resulting mixture contains 4 times as much milk as water. Find the quantity of milk in the original mixture.
- (a) 40 kg
(b) 35 kg
(c) 30 kg
(d) None of these

Directions for the following 3 (three) items:

Read the following **three** passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

Passage – 1

We eat food to satisfy our hunger. It also provides mental and psychological satisfaction. Therefore, is the prime need to be satisfied in life. Food has always been a central part of our social existence. It helps to relax and creates a friendly mood. People take special care in planning and cooking food for social occasions, so food promotes a sense of community. In addition to social functions food also satisfy our emotional needs. These include a sense of security, love, and attention. Familiar food items make us feel secure. A baby gets emotional security while being breastfed. Similarly, sharing of food is a token of friendship and acceptance.

4. Based on the above passage, the following *assumptions* have been made:
1. We have latent as well as manifest association with food.
 2. The very process of preparing and eating food in social settings can fulfill our emotional needs to some extent.

Which of the assumptions given above is/are correct?

- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Passage – 2

The 2001 Human Development Report tried to link human development to technology. It acknowledged that technology networks are transforming the traditional map of development. But technology is a double-edged sword or, to put it differently, it is a good servant and a bad master. It is primarily the use and control over technology by some powerful countries of the world that has subjugated many other countries to positions of permanent subjugation amounting to the servitude of a nation. The 2002 report adds a new dimension to human development. It is a report about politics and human development. It is about how political power and institutions formal and informal, national, and international affect human progress. It shows concerns about deepening democracies in a fragmented world. The report of 2003 makes a bold beginning by setting "Millennium Development Goals: a compact among nations to end human poverty".

5. Which of the following statements *can be inferred* from the above passage?

1. Political dimension must be carefully considered in the development of humans.
2. Technological innovation is the sole precursor to accomplishing human growth.

Choose the correct answer using the codes given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Passage – 3

'Development' as a concept and aspect of state policy has a feel-good effect on the modern mind. The magic mantra of development is thought to be the living spirit behind every human success in the fields of industry, agriculture, transport and communication, space, health, hygiene, culture and entertainment, etc. Development is accepted as the secular and rational way of conducting the affairs of the state in the general good, irrespective of the differences of gender, class, colour, caste and creed. Development is thought to be the only way out from all the ills that have accumulated over centuries, and it is also, expected to mitigate the wrongs that have befallen a class, section, region, and individual either intentionally or otherwise. Development is valorized as the panacea for all our social evils and is celebrated as the reason for justifying every action of every individual and institution.

6. Which of the following statements *best reflects the most logical, crucial, and rational message* conveyed by the author of the passage?

- (a) Development did not always have had universal acceptance.
- (b) Development is a positive force that can bring about progress and improvement in different realms of society.
- (c) Development is the panacea to all social problems, but gives rise to many ecological problems.
- (d) None of the above

7. The average age of 60 students is 20 years. When 15 new students are admitted, the average increases by 0.4 years. What must be the average age of the new students?

- (a) 22 years
- (b) 23 years
- (c) 24 years
- (d) None of these

8. What is the average of the sum of all 4-digit odd natural numbers of the form 'xxyy', wherein it is known that x is greater than one?
- (a) 6105
(b) 5200
(c) 6900
(d) 5700
9. The ratio of the speeds of P and Q in a 500 m race is 3 : 4. When the race starts, P is 140 m ahead of Q, which is at the starting line. Find the distance between P and Q, when P wins the race.
- (a) 30 m
(b) 15 m
(c) 25 m
(d) 20 m
10. Consider the following Question and the Statements:
- Statement 1: When $5x$ is divided by 2, there is a remainder.
- Statement 2: $x = 6y + 1$, where y is an integer.
- Question: If $x^3 - 4x = n$ and x is positive integer greater than 1, is n divisible by 3?
- Which one of the following is correct in respect of the above Question and the Statements?
- (a) The Question can be answered by using one of the Statements alone, but cannot be answered by using the other Statement alone.
- (b) The Question can be answered by using either Statement alone.
- (c) The Question can be answered by using both the Statements together, but cannot be answered by using either Statement alone.
- (d) The Question cannot be answered even by using both the Statements together.

Direction for the following 2 (two) items:

Study the following information and answer the items that follow.

P, Q, R, S, T, U, V and W are sitting around a round table facing the centre. P is the neighbour of W but not of T. R is the neighbour of S and 4th to the left of P. U is the neighbour of T and 3rd to the right of S. V is neither the neighbour of W nor of Q.

11. Which of the following is correct?
- (a) P is to the immediate left of Q.
(b) W is between V and P.
(c) S is 3rd to the right of P.
(d) U is between T and R.
12. Which of the following pairs has the first person sitting to the immediate right of the second?
- (a) R-T
(b) S-R
(c) U-Q
(d) W-P
13. Fresh fruit contains 70% water and dry fruit contains 25% water. How much fresh fruit is required to obtain 60 kg of dry fruit?
- (a) 120 kg
(b) 150 kg
(c) 117 kg
(d) None of these

14. Consider the following Question and the Statements:

Statement 1: Cristiano Ronaldo, the Brazilian striker, scored 3 goals in the last five minutes of the match.

Statement 2: Netherland scored a total of 3 goals in the match.

Question: In a football match, the Brazilian team was behind by 2 goals with 5 minutes remaining. Did they win the match?

Which one of the following is correct in respect of the above Question and the Statements?

- (a) The Question can be answered by using one of the Statements alone, but cannot be answered by using the other Statement alone.
- (b) The Question can be answered by using either Statement alone.
- (c) The Question can be answered by using both the Statements together, but cannot be answered by using either Statement alone.
- (d) The Question cannot be answered even by using both the Statements together.

15. Straight lines, no two of which are parallel and no three of which pass through any common point, are drawn on a plane. The total number of regions (including finite and infinite regions) into which the plane would be divided by the lines is:

- (a) 56
- (b) 255
- (c) 1024
- (d) Cannot be determined

16. Mohan was playing with a square cardboard of side 4 m. While playing, he sliced off the corners of the cardboard in such a manner that a figure having all equal sides was generated. The area of this eight-sided figure is:

- (a) 4 m^2
- (b) $8/[2 + \sqrt{2}] \text{ m}^2$
- (c) 8 m^2
- (d) $8/[1 + \sqrt{2}] \text{ m}^2$

Directions for the following 3 (three) items:

Read the following **three** passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

Passage – 1

It is well established that the greater the gap in earnings between origin and destination, the more likely are working-age adults to move. Many migrants to urban areas initially enter the informal sector. For some, this is a transitory phase before finding more formal employment. Migrants to town initially earn less than observationally equivalent natives, but the evidence indicates that this gap disappears within a few years and may even reverse. It has been hypothesized that large towns offer a greater diversity of employment and hence a better chance of reemployment in the event of a layoff. This might render large towns more attractive to migrating workers. Migration over short distances is much more common than migration to remote locations. Whether this reflects the greater cost of moving further, lack of information about more remote alternatives, or less alienation in a nearby setting remains undetermined. One way that families may insure themselves is by having members migrate to locations where times of economic adversity do not normally coincide with those at home. Remittances between the home base and migrant then enable consumption smoothing.

17. Which of the following statements *can be inferred* from the above passage?

1. The migrant-native income gap is not etched in stone.
2. Migration can function as a safety net in times of distress at home.

Choose the correct answer using the codes given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Passage – 2

The spread of nuclear weapons has been considered a grave threat to the security of the world at large. The debate is not so much about the use of nuclear technology, for the uses of nuclear technology in the development process of any nation has been well accepted. The debate is on the peaceful vs. the military uses of this technology. Policies of nuclear proliferation present an interplay of two sets of issues: one is the technical and political set of issues and the other relates to the capability and intent of the countries concerned. The technical element in non-proliferation seeks to either deny the critical technical assets to a country that seeks to embark on a nuclear programme or to make these assets available under a safeguard system. The capability of a state to go nuclear is dependent on the technical component. The development of nuclear technology and infrastructure that can produce a nuclear weapon is a technical dimension of the problem of proliferation.

18. Which of the following statements *best reflects the most logical, rational, and crucial message* conveyed by the passage?

- (a) Globally, nuclear technology infrastructure is becoming easily accessible.
- (b) A country can become nuclear capable if achieves relevant technical expertise.
- (c) The peaceful vs. military uses of nuclear technology can be neatly separated to easily minimize the threat posed by proliferation.
- (d) While acknowledging the benefits of peaceful nuclear technology, we must prevent its devastating potential from getting realized.

Passage – 3

Rights are rightly called social claims which help individuals attain their best selves and help them develop their personalities. If democracy is to be the government of the people, it has to exist for them. Such a democratic government can best serve the people if it maintains a system of rights for its people. States never give rights, they only recognize them; governments never grant rights, they only protect them. That individuals have rights is a phenomenon of the modern age as it began in 15th-16th century Europe. That these rights are guarantees against state absolutism and, therefore, they have their origin in society are things that became known in the modern age alone. Rights are indeed claims, but every claim is not a right. A claim is not a right if it is not recognized; it is not a right if it is not enforced. Claims which are not recognized are empty; claims not enforced are powerless claims.

19. Which of the following statements *best reflects the most logical, rational, and crucial message* conveyed by the passage?

- (a) A system of individual rights is crucial for a functional democracy.
- (b) Rights exist to ultimately benefit the government by suppressing dissent.
- (c) The modern age is the only period in human epoch with a functional claim for public wellbeing.
- (d) Stronger enforcement automatically equates to a stronger ethnic and cultural rights framework.

20. Total number of digits in the product $4^{3333} \times 5^{6666}$ is:

- (a) 9999
- (b) 6666
- (c) 6667
- (d) None of these

21. Five friends M, N, O, P and Q, went to a restaurant for the celebration of new year party. They had different amounts of money. M had Rs. 80 more than P. Q and O together had Rs. 370. N had Rs. 80 more than Q. M had Rs. 50 more than Q. M and P together had Rs. 400. Which of the following is/are correct?

- 1. Q had Rs. 20 more than O.
- 2. N had Rs. 30 more than M.
- 3. N and Q together had Rs. 460.

Select the correct answer using the codes given below:

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 2 only

22. Consider a 2888-digit number created by writing the first 999 natural numbers side by side. If this number is divided by 16, it will leave a remainder of:

- (a) 5
- (b) 9
- (c) 7
- (d) 0

23. Consider the following Question and the Statements:

Six friends A, B, C, D, E and F are standing in a queue in decreasing order of heights. It's known that $E < F$, $B > A$, $A < D < B$.

Statement 1: $E + B < A + D$

Statement 2: $D < F$

Question: Who is the shortest friend?

Which one of the following is correct in respect of the above Question and the Statements?

- (a) The Question can be answered by using one of the Statements alone, but cannot be answered by using the other Statement alone.
- (b) The Question can be answered by using either Statement alone.
- (c) The Question can be answered by using both the Statements together, but cannot be answered by using either Statement alone.
- (d) The Question cannot be answered even by using both the Statements together.

24. Out of the three exams, each with a total of 800 marks, a student secured 59.5% and 68% marks in the first and second exam respectively. To have an overall average of 75%, how many marks does the student need to secure in the third exam?
- (a) 750
(b) 760
(c) 770
(d) 780
25. 21st December of a year was Friday. Then what was the day of the week on July 1 in the same year?
- (a) Sunday
(b) Monday
(c) Tuesday
(d) Wednesday

Directions for the following 2 (two) items:

Read the following **two** passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

Passage – 1

With respect to language, India never had the monopoly of one language. Many local, regional, national, and international languages are spoken and learnt by Indians. We have the willingness to learn many languages. Indian culture promotes the learning abilities of several streams at a time and does not discard one for the other. Even politically, India was never ruled by one royal power historically except in times of Ashoka or under the British. Several royal families ruled their territories at the same time. They all ruled their domains but looked for an opportunity to overpower the other. We also notice that an Indian lives with many identities such as you can be a Bengali or Tamilian, a Goan, a Hindu, Muslim or a Christian and an Indian all at once. They all have their identities within the structure of homogeneous living. This nature of plurality itself is integral to Indianness.

26. Which of the following statements **can be inferred** from the above passage?

1. In India, a multitude of cultures find harmony, weaving a tapestry of unity in diversity.
2. Harmony and unity are automatically ensured by plurality and diversity.

Choose the correct answer using the codes given below.

- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Passage – 2

Rural areas in the countries of South Asia and Southeast Asia have serious inadequacies in physical infrastructure which limits their prospects of rapid growth in agriculture. More than half of rural households in these countries do not have access to electricity even though many villages are reported to be electrified. The power supply is erratic and unreliable. Most villages in dryland regions and in inaccessible mountainous regions face a shortage of good quality agricultural inputs. Unrealistic pricing policy and inefficient management of movement, storage and distribution systems create problems for farmers as well as consumers. Weekly haats in rural areas are the mainstay of rural poor for marketing produce and purchasing their daily necessities. The first and foremost aid to agricultural development is "information". Due to a lack of information on prices and markets, farmers in agriculturally backward areas suffer from exploitation by middlemen and local traders.

27. Based on the above passage, the following *assumptions* have been made:

1. Adequate information access is no less important than focusing on physical infrastructure in agriculture sector.
2. Weekly haats represent the only viable option for rural populations to market their produce and acquire daily necessities.

Choose the correct answer using the codes given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

28. Roy is travelling to Allahabad after 136 days of his sister's marriage. If his sister's marriage day falls 5 days earlier to Monday, then on which day of the week will he travel to Allahabad?

- (a) Wednesday
- (b) Thursday
- (c) Friday
- (d) Saturday

29. What is the least possible number which must be subtracted from 5, 9 and 17 so that the respective resulting numbers are in continued proportion?

- (a) 3
- (b) 4
- (c) 2
- (d) None of these.

30. Present age of A is $(\frac{5}{8})$ of the present age of B and the ratio of the present age of B to that of C is 16 : 13. If the average of present ages of all the three is 52 years, then find the sum of A's, B's and C's ages 5 years ago.

- (a) 121 years
- (b) 160 years
- (c) 141 years
- (d) 154 years

31. The price of an object P increases by 60 paise every year, while the price of the object Q increases by 22.5 paise every year. If in the year 2011, the price of the object P was Rs. 6.30 and that of the object Q was Rs.9.45, in which year the object P will cost 60 paise more than the object Q?

- (a) 2020
- (b) 2021
- (c) 2024
- (d) 2023

32. Ramesh walks 20 m towards west from his house. Then he turns right and walks 45 m. Then he turns 90° anticlockwise and walks 16 m. Finally, he turns 90° clockwise and walks 22 m to reach the bus stop. In which direction is he from his house and what is the shortest distance between his house and bus stop?

- (a) Southeast, 76 m
- (b) Northwest, 65 m
- (c) Southwest, 72 m
- (d) Northeast, 85 m

33. Find the sum of all the factors of 9450.
- (a) 32360
 - (b) 29760
 - (c) 25630
 - (d) 35910
34. A group of friends formed an association and decided to raise the funds in order to help the flood victims in their locality. Each of the member of the association (including the president) contributed as many rupees as there are number of members in that association. In addition, the president contributed Rs. 10 more later on. The group thus raised a total amount of Rs. 635. How many members were there in the association excluding the president?
- (a) 25
 - (b) 26
 - (c) 24
 - (d) 27

Direction for the following 2 (two) items:

Study the following information and answer the items that follow.

In a family of six persons—A, B, C, D, E and F, there are three males and three females. There are two married couples and two persons are unmarried. Each one of them likes different brands of cars, which are Toyota, Hyundai, Tata, Mahendra, Renault, and Honda.

The following facts about the family members are also known: B is the father of A and he does not like Honda or Toyota. E, who likes Renault, is the mother-in-law of D, who is the wife of C. C does not like Toyota. F likes Hyundai and is the sister of A, who likes Mahendra. A and C are siblings.

35. How is A related to E?
- (a) Son
 - (b) Daughter
 - (c) Mother
 - (d) Can't be determined
36. Which of the following is correct?
- (a) D is the sister-in-law of F and she likes Tata car.
 - (b) C is the brother-in-law of F and he likes Honda car.
 - (c) F is the mother of E and she likes Hyundai.
 - (d) D is the daughter-in-law of B, who likes Tata.

Directions for the following 4 (four) items:

Read the following four passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

Passage – 1

Madagascar, the world's fourth-largest island and its second-largest island country, is known for its biodiversity. But the Indian Ocean state, located just off the coast of the African mainland, has experienced a heat wave at least two months early this year, something which is worrying locals. The African country experienced its hottest October on record this year. Temperatures were more than 2.5°C above average, a heat which is normally not experienced until December or January highlights the outcome of a study conducted by the World Weather Attribution (WWA) published in November 2023. Madagascar is already being impacted by climate change, making life harder for millions of people. While Antananarivo's cooler highlands climate makes it a more comfortable place to live, the capital city will continue to experience more and more dangerously hot days and nights as the climate warms.

37. Which of the following statements *best reflects the most logical and rational message* conveyed by the author of the passage?

- (a) Madagascar's hot October is now a normal phenomenon.
- (b) Heatwave in Madagascar is a challenge to local governance.
- (c) Heatwaves are causing a depletion of biodiversity in Madagascar.
- (d) Madagascar is experiencing the impacts of climate change, which is making life difficult for its inhabitants.

Passage – 2

The effects of the division of labour, in the general business of society, will be more easily understood by considering in what manner it operates in some manufactures. It is commonly supposed to be carried furthest in some very trifling ones; not perhaps that it is carried further in them than in others of more importance: but in those trifling manufactures which are destined to supply the small wants of but a small number of people, the whole number of workmen must necessarily be small; and those employed in every different branch of the work can often be collected into the same workhouse, and placed at once under the view of the spectator. In those great manufactures, on the contrary, which are destined to supply the great wants of the great body of the people, every different branch of the work employs so great several workmen that it is impossible to collect them all into the same workhouse. We can seldom see more, at one time, than those employed in one single branch. Though in such manufactures, therefore, the work may be divided into a much greater number of parts than in those of a more trifling nature, the division is not near so obvious and has accordingly been much less observed.

38. Which of the following statements *can be inferred* from the above passage?

- 1. The division of labour is easier to observe in smaller industries.
- 2. Workers in smaller industries are less skilled or efficient than their counterparts in larger industries.

Select the correct answer using the codes given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Passage – 3

This method is different from others in many ways. Unlike other methods of primary data collection like surveys or interviews, fieldwork involves a long period of interaction with the subjects of research. Typically, the sociologist or social anthropologist spends many months — usually about a year or sometimes more — living among the people being studied as one of them. As a non-native ‘outsider’, the anthropologist is supposed to immerse himself/herself in the culture of the ‘natives’ — by learning their language and participating intimately in their everyday life — to acquire all the explicit and implicit knowledge and skills of the ‘insider’. Although the sociologist or anthropologist usually has specific areas of interest, the overall goal of ‘participant observation’ fieldwork is to learn about the ‘whole way of life’ of a community. Indeed, the model is that of the child: sociologists and anthropologists are supposed to learn everything about their adoptive communities in just the holistic way that small children learn about the world.

39. With reference to the above passage, the following *assumptions* have been made:

1. When it comes to gathering data, fieldwork offers a deeper insight into the target community than other approaches.
2. The goal of participant observation is not limited to specific research questions only; it aims for a holistic understanding of the subject matter.

Which of the above assumptions is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Passage – 4

The contemporary hype about civil society has been caused by the break-up of the socialist regimes in Russia and Eastern Europe and the revival of the Tocquevillian tradition of celebrating associational pluralism in the U.S. The concept of civil society has an interesting history. It has always been a part of liberal democratic theories. The liberal notion conceives of civil society as a sphere independent of but protected by the state wherein the rights-bearing individuals are free to pursue their private interests in free association with others. The early Marxist conception of civil society as one that plays a facilitating role in the functioning of the capitalist economy delimits the scope of civil society too much. But it was successful in its attack on Hegel for subordinating the civil society to the state.

40. Based on the above passage, the following *assumptions* have been made:

1. Political and ideological factors have contributed to the recent upsurge in interest in civil society.
2. Every individual, within the liberal conception of civil society, has an opportunity to pursue their private interests.

Which of the assumptions given above is/are valid?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

41. In the following question, the symbols @, *, #, £, and \$ are used with the following meaning:

‘A @ B’ means ‘A is neither smaller than nor greater than B’.

‘A * B’ means ‘A is not smaller than B’.

‘A # B’ means ‘A is neither smaller than nor equal to B’.

‘A £ B’ means ‘A is neither greater than nor equal to B’.

‘A \$ B’ means ‘A is not greater than B’.

Statements: P \$ R, S \$ Q, R @ Q

Conclusions:

I. S * P

II. S £ P

Assuming the given statements to be true, find which of the two conclusions I and II given above is/are definitely true.

- (a) If only conclusion I is true.
- (b) If only conclusion II is true.
- (c) If either conclusion I or II is true.
- (d) If neither conclusion I nor II is true.

42. A little boy is playing with some balls and boxes. The boxes are such that one box cannot accommodate more than two balls at a time. If the boy fills in all the boxes with one ball each, he is left with one ball. If the boy starts filling two balls in one box, one box is left empty. Find the number of balls and boxes with the boy.

- (a) 2 and 4
- (b) 3 and 2
- (c) 3 and 4
- (d) 4 and 3

43. In a cricket match, only four batsmen of team A came to bat. The average of the runs scored by the first three batsmen was 20, while the average of the runs scored by the last three batsmen was 25. If the last batsman scored 30, then how many runs did the first batsman score?

- (a) 25
- (b) 45
- (c) 30
- (d) 15

44. A piece of string is 100 cm long. It is cut into three pieces such that the longest piece is five times as long as the shortest piece and the third piece is 30 cm longer than the shortest piece. If the pieces are joined to form a triangular region, find the area of the region thus formed.

- (a) 100 cm^2
- (b) 200 cm^2
- (c) 150 cm^2
- (d) Triangle can't be formed

45. A and B walk up an escalator (moving stairway). The escalator moves at a constant speed. A takes five steps for every four of B's steps. A gets to the top of the escalator after having taken 30 steps, while B (because of her slower pace lets the escalator do a little more of the work) takes only 25 steps to reach the top. If the escalator were turned off, how many steps would they have to take to walk up?

- (a) 150
- (b) 120
- (c) 160
- (d) 80

46. Consider the following Question and the Statements:

Statement 1: Number of students playing either cricket or football or both is 160.

Statement 2: Number of students playing cricket is 156 and number of students playing both cricket and football is 86.

Question: How many students are playing football?

Which one of the following is correct in respect of the above Question and the Statements?

- (a) The Question can be answered by using one of the Statements alone, but cannot be answered by using the other Statement alone.
- (b) The Question can be answered by using either Statement alone.
- (c) The Question can be answered by using both the Statements together, but cannot be answered by using either Statement alone.
- (d) The Question cannot be answered even by using both the Statements together.

47. Consider the following Question and the Statements:

Manoj has decided to take a non-stop flight from Delhi to Alaska in North America. He is scheduled to leave Delhi at 2 pm Indian Standard Time on 11th February, 2024.

Statement 1: The average speed of the plane is 850 km/hr.

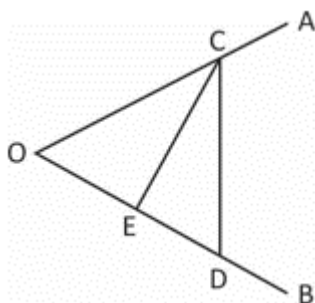
Statement 2: The flight distance is 15,800 km.

Question: What is the local time at Alaska when he reaches there?

Which one of the following is correct in respect of the above Question and the Statements?

- (a) The Question can be answered by using one of the Statements alone, but cannot be answered by using the other Statement alone.
- (b) The Question can be answered by using either Statement alone.
- (c) The Question can be answered by using both the Statements together, but cannot be answered by using either Statement alone.
- (d) The Question cannot be answered even by using both the Statements together.

48. In the given figure, two lines AO and BO meet at point O. Two points E and D lie on line BO, and point C lies on line AO. If $OE = EC = CD$ and $\angle DCA = 105^\circ$, then what is the value of angle CDE?



- (a) 35°
- (b) 70°
- (c) 140°
- (d) 75°

Directions for the following 2 (two) items:

Read the following **two** passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

Passage – 1

Democracy has increasingly been viewed as a form of good governance that paves the way for arriving at decisions among a group of individuals organized as a polity. The essential value of democracy lies in its moral superiority over any other way of arriving at decisions that take every citizen's interest into account and are equally binding on everyone. It has been argued that unanimity is generally impossible to achieve when collectivity attempts to arrive at a commonly agreed-upon decision. Thus, the most plausible procedure for arriving at a commonly agreed upon decision is the principle of majority rule which is most practical and morally acceptable. If we see democracy purely as a set of institutions- encompassing free and fair elections, legislative assemblies, general legal framework, and constitutional governments, then we are essentially privileging the procedural form of democracy.

49. Which of the following statements *can be inferred* from the above passage?

- 1. A functional democratic set up is a utopian ideal because of the difficulty in achieving unanimity in a democracy.
- 2. The decision arrived at through collective deliberation is invariably fair, valid and sacrosanct.

Choose the correct answer using the codes given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Passage – 2

Regionalism in India can be historically linked to the growth of Indian nationalism and the nationalist movement. Pertinently both nationalism and regionalism have had their origin in the national movement politics. With the advent of modernity and nationalism, a process of bourgeois class formation took place transcending the barriers of caste, religion, and tribe. Through the alchemy of this intermingling process, however limited under the colonial constraints, there appeared simultaneously two streams of national consciousness—one, pan- Indian and the other, regional. Overall, however, during the colonial period regional forces were largely dormant as they were not well organized. At that time the overarching goal of the Congress-led anti-colonial movement was to attain freedom from British domination.

50. Based on the above passage, the following assumptions have been made:

1. The attainment of a comprehensive pan-Indian identity required maintaining customary societal demarcations.
2. During the national movement, the consciousness of regional identities supported rather than contradicted the notion of a unified pan-Indian identity.
3. Which of the assumptions given above is/are correct?

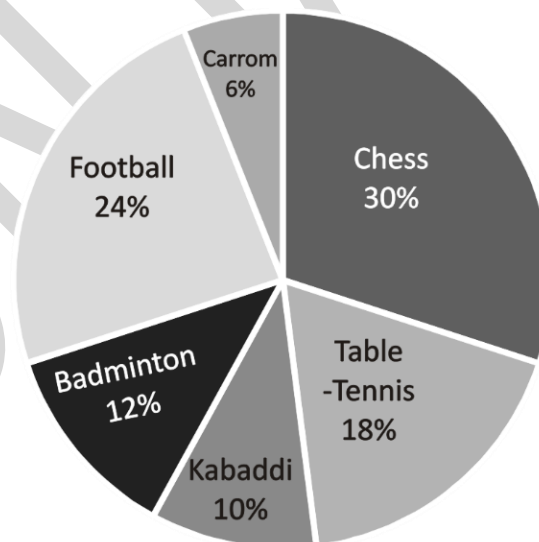
- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

51. On a certain sum and at a certain rate of interest, the compound interest at the end of 2 years is Rs. 1764 and at the end of 4 years is Rs. 3898.44. Find the sum.
- (a) Rs. 8400
(b) Rs. 9800
(c) Rs. 7200
(d) Rs. 7500

Directions for the following 2 (two) items:

Study the pie chart and table given below carefully and answer the questions that follow.

Total number of students in a school is 1200 and every student plays only one game.



Percentage distribution of students of a school playing different sports

Games	Ratio of boys to girls
Chess	7 : 5
Table Tennis	25 : 11
Kabaddi	2 : 3
Badminton	5 : 7
Football	1 : 1
Carrom	5 : 3

Ratio of boys and girls playing these sports

52. Find the ratio of the combined number of boys playing Kabaddi and Football to the average number of girls playing Chess, Table Tennis and Football.
- (a) 4 : 7
(b) 8 : 5
(c) 7 : 4
(d) 5 : 8
53. The number of girls playing Kabaddi, Badminton and Football is what percent of the number of boys playing Chess and Table Tennis?
- (a) 125%
(b) 80%
(c) 83.33%
(d) 120%

Directions for the following 2 (two) items:

Study the following information carefully and answer the items that follow.

There are 5 cricketers Rahul, Ramesh, Robin, Rohit and Ravindra who started playing cricket exactly on the same day as their respective 14th birthday. They all were born on the same day and same month but in different years. Also, they started playing cricket in different years, i.e. 1984, 1980, 1989, 1992 and 1995 but not necessarily in the same order. While they all were celebrating their birthdays together in the year 2000, they noticed a few facts about their ages, which have been given below:

The difference between the ages of Robin and Rohit is the square root of the age of one of the five players. Age of Ravindra is 3 years less than the least even-numbered age in the group. Ramesh is not the oldest player.

54. Who amongst the following player is the oldest?
- (a) Rahul
(b) Ramesh
(c) Rohit
(d) Robin
55. What is the age of Robin?
- (a) 25 years
(b) 30 years
(c) 34 years
(d) Either 25 years or 30 years
56. Consider the following Question and the Statements:
- Statement 1: R gets less salary than Q but more salary than T.
- Statement 2: Q and R get less salary than S, P and U but none of them gets the lowest salary.
- Question: Among six friends P, Q, R, S, T and U, who gets the 3rd highest salary?
- Which one of the following is correct in respect of the above Question and the Statements?
- (a) The Question can be answered by using one of the Statements alone, but cannot be answered by using the other Statement alone.
- (b) The Question can be answered by using either Statement alone.
- (c) The Question can be answered by using both the Statements together, but cannot be answered by using either Statement alone.
- (d) The Question cannot be answered even by using both the Statements together.

57. There are four persons - A, B, C and D. A and B working together can complete a piece of work in 36 days and A, B and D working together can complete the same work in 24 days. C is 20% more efficient and 100% more efficient than D and A respectively. Total work is 1800 units. If A, B, C and D start working alternately, such that A works on the first day followed by B, C and D, then find in how many days the whole work will get completed.
- (a) 72 days
(b) 69 days
(c) 58 days
(d) 50 days

Directions for the following 3 (three) items:

Read the following **three** passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

Passage – 1

The term 'welfare state' describes collectively a range of social policies that aim to provide basic services such as health and education, according to the need and normally, free of charge through state funding. The existence of some form of welfare is now accepted across most of the political spectrum. However, of late the concept of the welfare state has been radically challenged by the libertarians for whom it represents a violation of the rights of those who are taxed to provide its funding. Others have also questioned the strength of the welfare state.

58. Which one of the following statements best reflects the **most rational, logical, and crucial message** conveyed by the passage?
- (a) Despite the benefits of state funding, there are growing concerns regarding the legitimacy of the concept of a welfare state.
(b) Foreign funding plays a crucial role in the establishment and sustenance of a welfare state.
(c) Application of the libertarian notions of welfare state is not possible in the Indian context.
(d) Both (a) and (b)

Passage – 2

The major chunk of Indian retail market is unorganised retail which is about 98%. Few big domestic players have tried to enter this segment in order to expand their business and one such player is Reliance. But still to make the retail sector more defined and organised, government has now planned to allow FDI from various big players in this segment. One of the major global players is Walmart.

However, if this is implemented, the small retailers will lose their market especially the unorganised retail sector which comprise of the local kirana stores. 90% of the small retailers do not even pay tax to the government of India. These stores work on a small margin of 4-7 % and these kirana stores have been serving the Indian consumer since decades.

59. Which of the following is **not a logical and correct inference** from the above passage?
- (a) With more FDI in retail sector will come more challenges.
(b) FDI in unorganised sector can potentially increase government's tax collection.
(c) India's focus should be on local kirana stores only.
(d) FDI in India's retail market should be introduced carefully.

Passage – 3

Warmer temperatures caused by climate change are changing the lifestyles of mountain goats in the European Alps. Alpine ibexes (*Capra ibex*), a mountain goat species, are forced to change their diurnal habits to nocturnal to avoid hot days. This lifestyle shift is making them vulnerable to predators such as wolves, hindering their movement and may lead to eventual population decline. Males and females were active during nocturnal hours, but females were less active when accompanied by a kid. However, ibex activity was considerably higher in areas having the presence of nocturnal predators. The shift in behavioural patterns is the primary evidence stating that animals are avoiding heat stress and adopting nocturnal activity and, in the process, increasing predation risks.

60. Which of the following statements reflects the *most logical, rational and crucial message* conveyed by the author of the passage?

- (a) Climate change is having a detrimental impact on the wildlife in the European Alps.
- (b) Mother Alpine ibex abandon their young ones at night to avoid predators.
- (c) Changes in animal behaviours can have adverse ecological consequences.
- (d) Climate change will eventually drive the Alpine ibexes in the European Alps to extinction.

61. This question consists of five statements followed by options consisting of three statements put together in a specific order.

- A. Singers are not Dancers.
- B. Some Singers are Actors.
- C. All Actors are Dancers.
- D. Some Singers are not Dancers.
- E. No Singer is a Dancer.

Choose the option which indicates a valid argument, that is, where the third statement is a conclusion drawn from the preceding two statements.

- (a) CEA
- (b) BDC
- (c) CBD
- (d) EAC

62. Rakesh organised a party for his colleagues at his home. For this party he planned to invite some of his colleagues, and he accordingly ordered food from a nearby restaurant. He ordered a bowl of biryani for every five guests, a bowl of manchurian for every four guests and a bowl of rosogolla for every ten guests. There were altogether 55 bowls of these dishes. But, unfortunately only 45% of the total number of guests he invited turned up for the party. What is the number of guests who attended this party?

- (a) 100
- (b) 55
- (c) 45
- (d) 54

63. The probability that Mr. X passes interview in company P is $\frac{8}{11}$ and the probability that he will not pass interview in company Q is $\frac{3}{7}$. If the probability of passing in at least one interview is $\frac{13}{21}$, then consider the following statements:

- 1. The probability that he will not pass in both interviews is $\frac{71}{231}$.
- 2. The probability that he will pass in both interviews is $\frac{157}{231}$.

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

64. In a class of 150 students, 80 students like acting, 90 students like dance and 72 students like music. The number of students who like both acting and dance is 40, the number of students who like both dance and music is 35 and the number of students who like both acting and music is 30. If certain number of students did not like either acting or dance or music, then find the minimum possible number of students who like either acting or dance or music.
- (a) 118
(b) 135
(c) 128
(d) 137
65. Find the next term in the following series.
28, 34, 35, 37, 41, ?, ?
- (a) 42, 44
(b) 44, 44
(c) 43, 44
(d) 44, 46

Directions for the following 5 (five) items:

Read the following **five** passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

Passage – 1

Most of the world's employed population works in informal settings. These workers face high poverty and occupational risks, and the lack of adequate social protection arrangements leaves workers and their families in the informal economy especially vulnerable. An individual's likelihood of landing a formal job is positively and significantly influenced not only by their level of education but also by their parents' education and employment. Children from fully informal households are more likely to work informally as adults, simply because they were raised in an informal household. Formal households spend more on education per child than informal households. Earnings disparities among parents and household types lead to educational disparities early in their children's lives.

66. Based on the above passage, the following *assumptions* have been made:

1. Structural inequalities have a role in creating disparities in employment prospects.
2. Compared to children in informal households, all children in formal households have equal access to educational resources.

Which of the assumptions given above are correct?

- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Passage – 2

When 19th-century hunters, explorers, and naturalists killed fauna across continents, some of their trophies and specimens went to museums and private collections, forming a record of wildlife before many of their populations drastically declined. Scientists are now using historical DNA to establish baselines for assessing how much genetic diversity has been lost over time an indicator of a population's health and its ability to adapt to a changing world. In Africa, for example, scientists are using historical DNA to help guide critical conservation decisions for black rhinos and lions. In Europe, similar work is informing a breeding program for Spain's bearded vulture, and it is being used to assess the effectiveness of current conservation strategies for the Iberian lynx and the Iberian imperial eagle.

67. Which of the following statements *can be inferred* from the above passage?

1. The species whose current genetic diversity is less than that of its historical baseline is destined for extinction.
2. DNA is a pivotal instrument for improving ecological conservation efforts.

Choose the correct answer using the codes given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Passage – 3

In the wilderness north of Great Slave Lake, in Canada's Northwest Territories, mining companies are eyeing a potential treasure trove of critical minerals. The cost of mining in this and many other roadless parts of northern Canada used to be prohibitive. That changed last December when the Canadian government announced its highly anticipated Critical Minerals Strategy, which offers mining companies generous tax breaks, of \$3 billion. While the strategy is being touted as a way of helping the world transition to a post-carbon economy, some environmentalists fear that it will result in drained wetlands, diverted streams, and the disturbance of carbon-rich peatlands.

68. Based on the above passage, the following *assumptions* have been made:

1. The long-term economic and environmental benefits of a low-carbon economy outweigh the short-term environmental costs of extracting critical minerals.
2. There is lack of an implementable measure for balancing economic development with environmental protection.

Which of the assumptions given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Passage – 4

Since the Second World War, we've created a highly productive but incredibly fragile food system. Like an investor with a stock portfolio of just a few holdings, we removed an important safety net for our food supplies: diversity. In less than a century, most of the world has become dependent on a small number of crops for its sustenance. Since the dawn of agriculture humans have domesticated around 6,000 plant species for food, but now just nine provide the bulk of our calories. To grow the extra food the world desperately needed, thousands of traditional varieties were replaced by a small number of new, super-productive ones. The strategy that ensured this came to be known as the Green Revolution.

69. Which one of the following statements *best reflects the crux* of the passage?

- (a) Reintroducing diversity into the food system through genetic engineering is crucial for its sustenance.
- (b) The Green Revolution, despite being responsible for the loss of crop diversity, significantly decreased the productivity of crops.
- (c) The diminishing diversity of crops has potentially jeopardized our food security and sustainability.
- (d) All efforts to increase food production are inherently harmful, and make food systems more fragile.

Passage – 5

Last week, the European Union announced a new energy plan that will scale up renewable energy in Europe by mobilising additional investments, removing roadblocks to renewables roll-out, and empowering consumers to play an active role in the energy market. Experts warn there are prodigious challenges in rapidly accelerating the green energy transition and finding timely alternatives to Russian natural gas, which Europe relies upon for 40 per cent of its gas needs, largely for heating and certain industrial processes. Even though the EU had planned to reduce natural gas consumption by more than 25 per cent by 2030, gas was expected to comprise a significant share of Europe's energy mix for at least the next decade.

70. Which of the following is *the most crucial message* conveyed by the author of the passage?

- (a) The European Union's new energy plan will eliminate Europe's need for Russian natural gas within a decade.
- (b) Transitioning to green energy while overcoming practical challenges and fossil fuel dependence is a smooth task for a country like India.
- (c) In the backdrop of its challenges, the European Union is taking proactive steps to accelerate the transition towards renewable energy sources.
- (d) The level of reliance on Russian natural gas is equitably distributed among all European countries.

71. Find the wrong number in the following series.

38, 52, 69, 88, 118, 157

- (a) 88
- (b) 52
- (c) 69
- (d) 157

72. Packaging process of an e-commerce company involves processing by 4 machines. First machine 'w' performs the task of wrapping the articles, second machine 'p', inserts the article in a packet after which the third machine 's', seals the packet and finally the fourth machine 't', attaches price tag and details of consigner and consignee to the packet. Machines 'w', 'p', 's' and 't' take 12 seconds, 9 seconds, 6 seconds and 7 seconds per unit respectively. The packaging unit starts at 9 a.m. What is the maximum number of packets that can be rolled out till 11 a.m. (approximately)?

- (a) 450 packets
- (b) 750 packets
- (c) 600 packets
- (d) 211 packets

73. There are four possible events - W, X, Y and Z, only one of which must happen. The odds are 7 to 5 against W, 9 to 4 against X and 7 to 2 against Y. Find the odds against Z.

- (a) 418 : 425
- (b) 443 : 25
- (c) 18 : 25
- (d) 418 : 325

74. Five years ago, Mukta's age was $\frac{2}{3}$ rd of Ravi's age. 5 years hence, Ravi's age will be $\frac{14}{11}$ times Mukta's age. What are their present ages (in years)?

- (a) 12, 18
- (b) 17, 23
- (c) 22, 28
- (d) Cannot be determined

Directions for the following 3 (three) items:

Read the following **three** passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

Passage – 1

A proposal backed by 130 World Trade Organization (WTO) members to restart the selection processes for filling vacancies in WTO's Appellate Body was shot down by the United States (US) yet again. The lack of a functional Appellate Body is concerning as global trade is already slowing with growing geo-political tensions. Moreover, developed countries are turning inward with the introduction of several environment-related trade measures such as carbon tax which could hurt India's trade prospects. The US repeated that it does not support the proposed decision to commence the appointment of Appellate Body members as its longstanding concerns with WTO dispute settlement remain unaddressed.

75. Which of the following statements *can be inferred* from the above passage?

1. The dysfunctions of the WTO Appellate Body has the potential to worsen the existing challenges in global trade.
2. Developed countries are intentionally using environmental trade measures like carbon taxes to particularly dampen India's trade prospects.
3. The US is likely to continue blocking the appointment of new Appellate Body members to the WTO.

Choose the correct answer using the codes given below.

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) All 1, 2 and 3

Passage – 2

In their practice, Jaina renunciants follow a rigorous method towards salvation, in which a non-violent way of life, the renunciation from a worldly ego, the dissociation of self and non-self, and a gradual purification of the self towards unobstructed knowledge, become as many different facets as possible of the same effort to access to a superior order of being in which each self-manifests its true nature. Jaina Philosophy is the set of philosophical investigations developed by thinkers as they appear in these different corpuses. Jaina metaphysics is an atomist and dualist conception of the world, it focuses on the nature of the self, on that of karmic matter, as well as on their principles of association. Jaina ethics consists of practices focused on non-violence, non-absolutism, and non-attachment, which aim to disentangle the self and karmic matter, and which help one to reach omniscience.

76. Based on the above passage, the following *assumptions* have been made:

1. Jaina renunciants believe achieving salvation requires a holistic approach encompassing internal transformation.
2. The self and karmic matters, though being distinct entities, influence each other.

Which of the assumptions given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Passage – 3

Music is both art and science, art in the sense that it deals with the expression of one's feelings and emotions through sound, in melody and harmony, maybe through its composition and execution. The essence of music thus consists in carrying the entire mankind into a feeling of oneness, an identity which unifies the musician, the listeners and the music which is created. Melody is taken to be the most important component of Indian music. Ancient Indian music was actuated by its desire to explore its mystery and tended to proceed from its surface to its centre. A melodic is constituted not by any of its notes individually but by the composite pattern of all its note intervals in their totality.

77. Which of the following statements *can be inferred* from the above passage?

1. Music can surpass individual disparities and foster a collective experience of unity and interconnectedness.
2. Ancient Indian music started as a path to spiritual enlightenment.

Choose the correct answer using the codes given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

78. The annual profit from the sales of an item is equal to the annual revenue minus the annual cost for that item. The revenue from that item is equal to the number of units sold times the price per unit. If n units of a portable heart monitor were sold in 2012 at a price of Rs.65 each, and the annual cost to produce n units was Rs.(20,000 + 10n), then which of the following statements indicates that the total profit for this heart monitor in 2012 was greater than Rs.500,000?

- (a) $500,000 < 55n - 20,000$
- (b) $500,000 > 55n - 20,000$
- (c) $500,000 < 55n + 20,000n$
- (d) $500,000 < 75n - 20,000n$

Directions for the following 2 (two) items:

Consider the information given below and answer the two items that follow.

Chief Ministers from Eight states MP, UP, AP, HP, UK, MH, WB and TN are invited for 'Swacch Bharat' round table conference (not necessary in the same order). Some information about the order in which they are sitting is as follows:

1. Chief Minister of WB is sitting opposite to Chief Minister of MH and to the immediate right of Chief Minister of UK.
2. Chief Minister of TN is sitting to the immediate right of Chief Minister of AP.
3. Chief Minister of MP, who is not immediately next to Chief Minister of HP, is sitting opposite to Chief Minister of TN.

79. Who is sitting third to the left of the Chief Minister who is sitting immediately to the right of Chief Minister of MH?

- (a) Chief Minister of HP
- (b) Chief Minister of AP
- (c) Chief Minister of TN
- (d) Chief Minister of WB

80. Which one of the following statements is *not* correct?

- (a) Chief Minister of HP is third to the left of Chief Minister of MP.
- (b) Chief Minister of WB is a neighbour of Chief Minister of MH.
- (c) There are four Chief Ministers sitting between Chief Minister of AP and Chief Minister of MP when counted anti-clockwise from Chief Minister of AP.
- (d) Chief Minister of UP is fifth to the left of Chief Minister of TN.

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