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TEST BOOKLET

C

CSAT APTITUDE TEST– (4297) – 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
4. the Box provided alongside. **DO NOT** write *anything else* on
5. the Test Booklet.
6. 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.
7. You have to mark all your responses **ONLY** on the separate Answer Sheet provided. See direction in the answers sheet.
8. 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.
9. 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.
10. 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.
11. 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. P, Q, R and S are 4 even consecutive numbers, such that P is smaller than S, S is smaller than Q, and Q is smaller than R. Which of the following statement(s) is/are correct?

- (i) $(P + S) \geq (R + Q)$
- (ii) $(R - S) > (Q + P)$
- (iii) $(P + R) \leq (Q + S)$

Select the correct answer using the code given below.

- (a) i, ii and iii
- (b) ii and iii only
- (c) i and iii only
- (d) None of these

Directions for the following 5 (five) 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

Technological change is one of the driving forces of capitalism. The latest economic research predicts that the current level of robotic usage or an increased rate of robotic usage will have detrimental effects on both employment and earnings in a variety of occupations and industries in high-income countries. While this result is far from conclusive it relates to other findings about workers being fearful of robots replacing them completely or replacing aspects of their job. As firms introduce new-generation robots into the workplace and, more broadly, new technologies associated with I4.0 then they need to include current workers who will be affected by such technologies in this introduction to allay at least some of the fears that they have.

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

- (a) In future, robots will cease to compete with humans in the domains of employment and earnings.
- (b) Unlike capitalism, the socialist model of economy values human life more than robots.
- (c) In the era of technological changes, high-income countries need compassionate capitalism.
- (d) Firms in high-income countries should not introduce robots for work.

Passage – 2

Craving for material things and the rising tendency to show off one's belongings are among the many reasons cited by experts for instances of anti-social behaviour among teenagers. A family system that is communicative, tolerant, and non-violent has less chance of nurturing criminal behaviour among children. Youngsters are lured by temptations that are visible but not accessible. As a result, those who have a low aversion to risk and a high need to seek thrill take to crime. Youths have a strong penchant for splurging money on material things. Their aspirations are often beyond the means of their parents. Youngsters want to spend more money than their friends. Thus, the cycle of crime begins.

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

- (a) Ethical socialization of children can stop crimes in society.
- (b) The obsession of youth with materialistic objects may prove to be dangerous for society.
- (c) Parents must focus on socialization to make their children responsible towards society.
- (d) Parents should teach their kids the right balance between materialistic and spiritual success.

Passage – 3

More and more these days, young people are establishing and maintaining relationships online. These “cyber” relationships often arise because parents, out of fear for their children’s safety, no longer allow them to be “free range” to congregate in local parks, at malls, and on street corners. The only place that they have permission to “meet up” is in virtual gatherings such as Facebook, Twitter, and the “textosphere.” Plus, the reality is that your children are growing up as natives in this digital world, so it is only natural that they spend some of their time in cyberspace. There are several questions that you must ask as your children immerse themselves in this connected world. First, are the relationships that they build online healthy or harmful? and, do they foster your children’s long-term positive development?

4. Which one of the following statements **best reflects the most critical inference** that can be made from the passage given above?
- (a) Parents should guide children in safely navigating relationships online.
 - (b) Parents need not adapt to the changing modes of engagement - from physical to virtual - of their children.
 - (c) The cyber world offers huge opportunities for development for young people.
 - (d) Young people need not learn the value of relationships in offline mode of engagement.

Passage – 4

Citizen participation in anti-corruption efforts encompasses dynamics and approaches that may differ from citizen participation in other public processes, given that the State may not always provide citizens with the same access to space and information about fighting corruption. Corruption bypasses democratic mechanisms to the extent that Mark Warren has defined corruption as a violation of democratic inclusion. Corruption bypasses the laws and rules that were democratically established and excludes those who do not participate in corrupt exchanges (e.g., services that are meant to be public are allocated to those who bribe or based on clientelism). For this reason, the role of citizens is better understood in terms of social accountability, where the citizens oppose corruption by keeping it in check, critically assessing the conduct and decisions of officeholders, reporting corruption misdoings and crimes, and asking for appropriate countermeasures.

5. Based on the above passage, the following **assumptions** have been made:
- 1. The democratic mechanisms deter officeholders from corruption.
 - 2. Apart from laws, it is the citizen's participation which can keep a check on corruption.

Which of the above assumptions is/are **invalid**?

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

6. According to the author, *the most rational inference* would be:

- (a) Fighting corruption is a citizen's duty and the state shall ensure access to space and information in all public processes.
- (b) Weaker laws and corrupt officials call for the active participation of the citizens to check corruption.
- (c) People's indifference is the best breeding ground for corruption and bureaucracy-criminal nexus.
- (d) Both (a) and (b)

7. Three statements are given below followed by four conclusions numbered I, II, III and IV. You have to take the three given statements to be true even if they seem to be at variance with commonly known facts. Read the given conclusions and then decide which of the given conclusions logically follow(s) from the given statements disregarding commonly known facts.
Statements:

- (i) Some cakes are milk.
- (ii) Some milks are curd.
- (iii) No curd is yogurt.

Conclusions:

- I. No cake is a yogurt.
- II. No milk is a yogurt.
- III. Some milk are yogurt.
- IV. Some cakes are curd.

Which of the above conclusions is/are correct?

- (a) Both I and II follow
- (b) Both I and IV follow
- (c) Only III follows
- (d) Either II or III follows

8. Three boys and two girls are to be seated in a row so that the girls are always seated together and the no girl is seated at either end of the row. How many possible arrangements are there?

- (a) 24
- (b) 120
- (c) 12
- (d) 48

9. Following information is known about six members of a family.

- 1. There are three male members and three female members in the family.
- 2. A and E are both females and are children of F.
- 3. D is the father of two children - one boy and one girl, B.
- 4. B, who is a female, is child of A.
- 5. There is only one married couple in the family.

Which of the following statements is correct regarding the family mentioned above?

- (a) A, B, E are all females.
- (b) D is the husband of A.
- (c) D is the father of E and F.
- (d) More than one of the above statements are correct.

10. A bag contains 3 blue pens, 4 green pens and 5 red pens. Three pens are drawn simultaneously at random from it. Find the probability that all the three pens are of different colours.

- (a) $\frac{4}{11}$
- (b) $\frac{8}{11}$
- (c) $\frac{3}{11}$
- (d) None of the above

11. Kamlesh, a local chemist, offers two varieties of Ayurvedic tablets - A and B, priced at Rs. 10 and Rs. 12 per strip, respectively. He sells both types of tablets for a total of Rs. 25,200, maintaining a profit margin of 20%. It's known that he sold 420 strips of tablets A. What is the quantity of tablets B in the total tablets he sold?
- (a) 3500 strips
(b) 2800 strips
(c) 7000 strips
(d) 1400 strips
12. On 1st January 1949, 4000 soldiers were posted inside a barrack at the L.O.C. In the barrack, there was sufficient stock of food for 190 days. At the end of 30th January, due to heavy snow fall and extreme weather conditions, 800 soldiers were shifted back from the barrack to the base camp. For how many days shall the remaining food last for the remaining soldiers?
- (a) 200 days
(b) 180 days
(c) 210 days
(d) 195 days

Directions for the following 5 (five) 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

Response strategies for climate change will require a central role of education. Education helps people understand and address the impact of global warming, encourages change in their attitudes and behaviour and helps them adapt to climate change-related trends. Education and capacity building have also attracted the attention of policymakers, environmental activists, and multilateral organizations and stimulated diplomatic activities across the world. Various stakeholders need additional capacity, not only to deal with the additional challenges of climate change but also to enhance development efforts and safeguard development gains. Climate change management at the international level consists of the 1992 United Nations Framework Convention on Climate Change (UNFCCC), the 1997 Kyoto Protocol and the decisions taken by the signatory countries under these instruments.

13. Which one of the following statements **best reflects what is implied** by the passage?
- (a) Climate change education is crucial for the effective management of its impacts.
(b) Education about climate change will lessen the need for technological solutions.
(c) Climate change education will lead to immediate behavioural change.
(d) International bodies are giving more priority to climate change education as compared to other solutions.

Passage – 2

Originally, public schools were created and funded as a part of our democracy. To ensure that all members of the democracy were able to participate in our political system, education was identified as a key tool of democracy, known as the 'great equalizer'. Although political polarization is not new it is increasing. Education provides an opportunity for school administrators to create an environment for education which succeeds in creating educated and engaged students who are aware of politics at the national and local levels and can use the classroom format to develop their critical thinking and problem-solving skills. This will only enrich their political contribution as adults. If we don't prioritize educational equity, it will be those less fortunate in society that will continue to suffer disproportionately.

14. Which of the following is/are *the most rational and logical inference/inferences* that can be made from the passage?

1. Education is the basis for political empowerment in adulthood.
2. For students and public welfare, the privatization of schools should be checked.

Select the correct answer from the code given below:

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

15. With reference to the passage, which one of the following statements is correct?

- (a) Along with being a great equalizer, education is also a great political polarizer.
- (b) School administrators of private schools should ensure that political science classes are held regularly.
- (c) Education is the only source of awareness of politics at the national and local levels.
- (d) The less fortunate in society can be empowered through the tool of education.

Passage – 3

Culture is a term that is highly complex and often contested with academics recording about 160 variations in meaning. Underpinning the notion of culture is that it is dynamic and changes over time and in different contexts resulting in many people today identifying with one or more cultures and many different groups. Culture is a defining feature of a person's identity, contributing to how they see themselves and the groups with which they identify. A person's understanding of their own and other's identities develops from birth and is shaped by the values and attitudes prevalent at home and in the surrounding community. Like culture, the notion of identity is complex with people's identity or identities becoming more complex over time as they interact with different groups. Identity adapts due to many factors including mass media, popular culture and increased opportunities for social interaction facilitated by new technologies.

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

1. A strong sense of identity is critical for a person's survival in a social group.
2. Cultural interactions of different groups complicate the development of the identity of a person and may give rise to people having confused personalities.

Which of the above assumptions is/are valid?

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

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

- (a) Culture and identity are interrelated despite being complex and dynamic.
- (b) Despite being a complex process, identity development depends on one's own specific culture.
- (c) There is a need to simplify the notions of culture and identity.
- (d) Culture influences not only identities, but also mass media and technologies.

18. A L.I.C. office hired 400 employees, consisting of both officers and workers. Their average monthly salary is Rs. 5000. If a worker receives Rs. 4000 per month and the average salary of officers is Rs. 20,000 per month, then determine the number of officers in that L.I.C. office.

- (a) 50
- (b) 35
- (c) 25
- (d) 55

19. Aniket took some mango saplings, made groups of five with them, and found that two saplings were left over. He also tried making groups of three and groups of seven, and in each case, two saplings were left over. What is the smallest possible number of saplings that Aniket had?

- (a) 103
- (b) 112
- (c) 105
- (d) 107

20. A car and a train start from point A at the same time, and their destination is also the same. The train travels 10% faster than the car, but the train driver has to stop the train for 10 minutes at a station. Still, the train reached the destination at the same time as the car. If the destination is 140 km away from point A, then what must be the speed of the train?

- (a) 64 km/hr
- (b) 74 km/hr
- (c) 84 km/hr
- (d) 54 km/hr

21. Mr. Sharma's family consists of three people; his wife, his son and himself. At the time of their wedding, average age of Mr. Sharma and his wife was 28 years. After the birth of their son a few years later, average age of the family dropped by 10 years from what it was just before his birth. What was the age of Mr. Sharma when the son was born, if the ages of Mr. and Mrs. Sharma were in the ratio 8:7 at that time?

- (a) 30 years
- (b) 28 years
- (c) 32 years
- (d) Cannot be determined from the given data

22. In an exam 12% students scored less than 30 marks, 6% students scored more than 200 marks, 22% students scored more than 100 marks, and 990 students scored between 30 and 100 marks. How many students scored between 100 and 200 marks?
- (a) 250
(b) 240
(c) 230
(d) 225
23. In a certain code, 'PUNISHMENT' is written as 'NWLKQJKGLV'. In the same code 'PRECAUTION' will be written as
- (a) NTCEYWRKMP
(b) NGECWRPKQL
(c) RSCAYSVGQL
(d) NPGAYSRQKL
24. Rajat likes a pair of shoes that costs Rs 5500. On a particular Thursday, all the items in the shop are at 10% discount. Further, on buying items over Rs. 9500, the shop offers a discount of Rs 100 on the bill. Rajat tells Shyam about the offer who also decides to buy the shoes. What will be the percentage savings if two friends buy the same pair of shoes each on Thursday and get it billed together?
- (a) 10.9%
(b) 10%
(c) 11.11%
(d) Cannot be calculated from the given data.

Directions for the following 5 (five) 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

One of the big things that we usually try to encourage in relationship therapy, is empathy. Most people agree that they want people to feel empathy for them, their struggles, and their feelings. But is this focus on empathy as a ground zero for ethical and close relationships misguided? In a new book, *The Other Side of Empathy*, author Jade E. Davis argues that we should be sceptical of the recent cultural focus on empathy and its accompanying strategies and methods. One of her main arguments is that empathy often presumes that we can truly know another person, particularly the specifics of their suffering. This can “flatten” suffering by presuming how the other is truly feeling. In worst cases, this can become patronising, paternalistic, and even dismissive as it turns the other’s pain into something of your own (the listener). It can make it more about you, the listener, than those who are listened to, by relating their experience to something that has happened to you.

25. Which of the following statements **best reflects the crux** of the passage?
- (a) Properly understanding empathy is fundamental to solving the issues of the sufferer.
(b) We as a society should be open to different interpretations of empathy and morality.
(c) The understanding of empathy is not limited to only one interpretation.
(d) The value of empathy is not clearly understood in the psychological world and probably will never be.

Passage – 2

The present economic system is destroying our natural resources and thereby eroding the prosperity of future generations. Large-scale logging, depletion of the oceans' fish stocks and the loss of arable soil are prime examples of this development. The follow-up costs of climate change and loss of biodiversity alone could run up to one-quarter of the global gross national product by 2050. "Business as usual" in the industrialised countries' resource-intensive economies and the developing and emerging countries following suit is not a feasible course. Environmental protection and economic development are not a contradiction of terms but depend on each other. Increasing energy and material efficiency is set to become the decisive factor for international competitiveness in the 21st century. This is why a transformation to a Green Economy is necessary which operates within the so-called ecological guard rails and preserves natural resources.

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

- (a) To ensure sustainability, the present concept of economic development needs to change.
- (b) Countries focusing on energy and material resources would lead the world in the 21st century.
- (c) The global race for green future markets has picked up considerable momentum in recent years.
- (d) None of the above

Passage – 3

Literary borders should be porous and the Sahitya Akademi awards, which have been honouring writers of 24 Indian languages over the years, should be seen in that light. This year the Akademi has picked nine books of poems, six novels, five short stories, three essays and one literary study in Dogri, Gujarati, Kashmiri, Manipuri, Odia, Punjabi, Rajasthani, Sanskrit, Sindhi, Assamese, Bodo, Bengali, Telugu, Malayalam, Kannada, Santali and others. It is a prize to be welcomed just for the sheer linguistic diversity it acknowledges in a country where there is a change in dialect every few square kilometres and no dearth of marginalised communities or languages facing extinction. The possibilities are immense: in a country where not everyone can whip up a PR frenzy, a Sahitya Akademi award is an encouragement to keep pursuing the craft; writers can expect to see a rise in sales and be taught in schools and universities; and readers can hope to discover some hidden gems. Writers also have the opportunity to be translated into other regional languages, and into English too.

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

- 1. The Sahitya Akademi Award helps in country-wide cross-cultural interactions through books.
- 2. Awards like Sahitya Akademi do not value the different languages and dialects of the country.

Which of the above assumptions is/are valid?

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

Passage – 4

Different factors affect the pace of spatial transformations in different ways. In India, people live in the largest cities than in small towns when compared to China. Nearly 6 per cent of the urban population lives in the largest cities in India, which is double compared to China. Most modern cities in India are undergoing haphazard growth, and because of this, the effects of living in huge cities have not been fully anticipated. The social, economic, and psychological consequences of industrialisation and urbanisation have not been fully considered and the steps which should have been taken to bring about an adjustment between man and his new environment have not been forthcoming in ample measure. This is particularly true in the case of underdeveloped regions.

28. Which of the following is/are *the most rational and logical inference/s* that can be drawn from the passage?

1. India is more urbanized than China.
2. There is a lack of systematic policy approach to India's urbanization.

Select the correct answer from the code given below:

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

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

- (a) Urbanization is critical for rapid economic growth.
- (b) India should protect its villages as it does in case of its cities.
- (c) India's urbanization trend demands a relook at the model of urbanization.
- (d) Industrialization and urbanization go hand in hand, creating multi-dimensional impacts on people's lives.

30. Two bus tickets from Alwar to Baroda and three tickets from Alwar to Chitarkoot cost Rs. 77 but three tickets from Alwar to Baroda and two tickets from Alwar to Chitarkoot cost Rs. 73. What are the fares to Baroda and Chitarkoot from Alwar?

- (a) Rs.4, Rs.23
- (b) Rs.13, Rs.17
- (c) Rs.15, Rs.14
- (d) Rs.17, Rs.13

31. Consider the following statements:

1. Some capitals are continents.
2. All continents are countries.
3. Some countries are islands.

Conclusions:

- I. Some islands are continents.
- II. Some countries are continents.
- III. Some countries are capitals.
- IV. Some islands are capitals

Based on the given statements, which of the conclusion(s) is/are true?

- (a) All are true
- (b) Only II and III are true
- (c) Only III is true
- (d) Only IV is true

32. In a certain code 'DIGEST' is written as 'GKICQW'. In the same code 'PICNIC' will be written as:

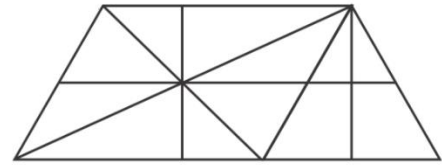
- (a) FRASRA
- (b) KAGPER
- (c) XKELGK
- (d) ARSARF

33. Find the missing number in the following matrix.

96	48	6
48	12	12
72	?	12

- (a) 18
(b) 6
(c) 4
(d) 16
34. The sum of the ages of Rati and her mother is 83 years. After 6 years, her mother's age will be 3.75 times her age. What was the ratio of their ages 9 years ago?
- (a) 2 : 13
(b) 1 : 12
(c) 1 : 10
(d) 1 : 9
35. The average of five numbers is x , and the average of three of these numbers is y . Value of the remaining two numbers is 'a' and 'b' and difference between these two numbers is 1. Which of the following relationship(s) between them is/are true?
- (a) $5x + 3y - b = 1$
(b) $5x - 3y - 2b = 1$
(c) $5x - 3y - 2a = 1$
(d) Both (b) & (c)

36. How many triangles are there in the following figure?



- (a) More than 24
(b) 21
(c) Less than 20
(d) In between 35 and 40
37. A tap is filling a water tank and the flow of water through that tap is 6 litres per minute. Once the tank is filled, the tap is closed. However, later due to generation of a leak at the bottom of the tank, it gets emptied in 8 hours. When the tank is full, and the tap and leak both work simultaneously, then tank gets emptied in 12 hours. What is the tank's capacity?
- (a) 5000 litres
(b) 8640 litres
(c) 3000 litres
(d) Can't be determined
38. If P , Q and R are three angles such that $P = Q + R$ and $P > 180^\circ$, then which of the following is **definitely not true** for Q and R .
- (a) One is obtuse angle and other one is acute angle.
(b) One is reflex angle and other one acute angle.
(c) Both are obtuse angles.
(d) Both are right angles.

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

Most of our parents would probably say we would be far better off if we could use the lessons they learned the hard way – lessons that would have saved them time, effort and maybe even heartbreak had they learnt them sooner. But did they live life based on the learnings of their own parents' mistakes before us? Do we learn our lessons from history as individuals, as nations, as mankind? As human beings, we go in cycles from one milestone to the next. Starting over is at the core of our existence. Even the 50 to 75 trillion cells that make up a human body are replaced with new cells every seven to 10 years. There is no denying that lessons from the past have advanced our species, but it may be the renewed cells talking, a voice inside us responding to a familiar risk with 'it could be different this time'. It might be the optimist in us talking but we can sometimes convince ourselves that under different circumstances even an identical situation could have a different outcome.

39. Which one of the following statements **best reflects the most critical inference** that can be made from the passage given above?
- (a) Committing mistakes is inherent to being human.
 - (b) People should avoid making mistakes at any cost.
 - (c) People repeating mistakes reflect the ignorance of human beings.
 - (d) The optimistic attitude of humans helps prevent repetition of mistakes.

Passage – 2

Irregularity and lack of punctuality are problems which you encounter frequently in any work situation. Look around yourself and you may come across people who get up late in the morning and are unable to send their children to school on time. They may also not be able to provide their family members with proper meals and have disorganized homes due to their irregular behaviour and lack of punctuality. Such people are frequently absent from work. Others like to come in late and leave early as a matter of habit or right. Some workers are never found at their seats during working hours. You may have witnessed the inconvenience caused to the public wanting to pay bills when counter clerks are either late or not found at their seats in banks, post offices, and telephone and electricity offices. The irresponsible behaviour of such people spoils the discipline of the work environment, sets bad examples, causes inconvenience to the public and lowers the image of the organization.

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

- 1. Professionalism and punctuality are crucial for a well-functioning work environment and public service.
- 2. Personal actions have wider impacts beyond individual consequences.

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

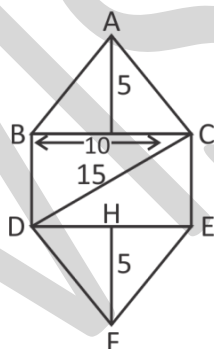
41. In Gokuldham society, Tapu Sena wants to celebrate Ganpati festival. For preparations sake they need a committee. A committee of 5 members is to be formed out of 4 men and 5 women. In how many ways can Tapu Sena form a committee consisting of 1 man and 4 women?

(a) 20 ways
(b) 26 ways
(c) 24 ways
(d) 45 ways

42. While sitting on a park bench, Rahul estimated that the area of the park must be 160 cm^2 and the length seems to be 16 cm. If area is increased to 1.33 times the original area by increasing only its length, what must be the new perimeter of the park (approx.)?

(a) 60 cm
(b) 62.67 cm
(c) 65.5 cm
(d) 54.2 cm

43. The figure given below shows a field with the measurements given in meters.



Calculate the total area of the field (in m^2).

(a) $15 + \sqrt{5}$
(b) $50 + \sqrt{5}$
(c) $50(1 + \sqrt{5})$
(d) $15(1 + \sqrt{5})$

44. Study the following graphs carefully and answer the question that follows.

Chart -1 shows transportation of 15 million tons of petroleum through different modes over a specific period of time.

Chart- 2 shows the distribution of the cost of transporting this petroleum. The total cost incurred was Rs. 40 million.

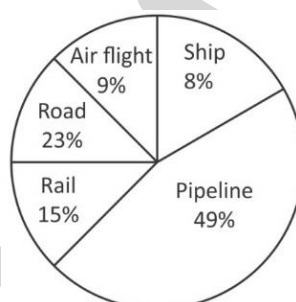


Chart -1
Volume Transported

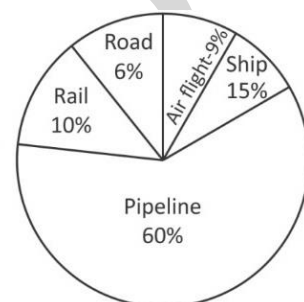


Chart -2
Cost of Transportation

If the cost of transport (per ton) by ship, air flight, rail and road are represented by A, B, C and D respectively, then which of the following is true?

(a) $A > B > C > D$
(b) $A \geq C > B > D$
(c) $B > A > D > C$
(d) $D > B > C > A$

45. Study the following table carefully and answer the question that follows.

The following table showcases the number of school students (boys and girls) in different streams. Some students live in hostels while some don't.

S. No.	Stream	Boys		Girls	
		Hostellers	Non-Hostellers	Hostellers	Non-Hostellers
1.	Science	44	48	35	33
2.	Art	66	72	68	43
3.	Commerce	40	38	60	23
4.	Hindi	50	48	30	22

60% of the students of this school passed in the annual examination. If the success rate in the science stream was 100%, what must be the success rate of the other streams combined?

- (a) $42\frac{2}{3}\%$
- (b) $48\frac{4}{7}\%$
- (c) $45\frac{5}{2}\%$
- (d) None of these

46. If 97865A4B is divisible by 6, then what is the maximum possible value of $A + B$?

- (a) 25
- (b) 12
- (c) 15
- (d) None of these

47. Examine the following statements:

- I. Shark is faster than Monkey.
- II. Rabbit is not faster than Cat.
- III. Monkey is faster than Rabbit.

The conclusion that can be drawn from the given statements is:

- (a) Cats are as fast as Shark and Monkey.
- (b) Cats are as fast as Monkey.
- (c) Rabbit is the slowest of all the animals.
- (d) Shark is faster than Cat.

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

Corruption, like a corrosive force, poses a profound threat to the foundations of democracy. At the heart of democratic ideals is the principle of equal representation and the empowerment of citizens to shape their governance. In a democracy, the power vested in elected officials is meant to reflect the people's desires, guided by principles of transparency and accountability. Corruption disrupts this delicate balance, as public resources are syphoned away for personal gain, undermining the potential for equitable development. Moreover, corruption perpetuates a cycle of inequality, as those with access to power manipulate the system to their advantage, leaving marginalised voices unheard. To safeguard democracy from the encroachment of corruption requires a multifaceted approach, including robust legal frameworks, independent oversight, people participation and a collective commitment to ethical governance. Only by addressing corruption head-on can societies hope to preserve the true spirit of democracy—a system that empowers individuals and ensures that the voice of the people remains the driving force behind governance.

48. Which of the following is/are **the most rational and logical inference/ inferences** that can be made from the passage?

- 1. Fighting corruption is the responsibility of not only the government, but also the citizens.
 - 2. Weakened democratic principles and frameworks breed corruption in governance.
- Select the correct answer from the code given below:

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

Passage – 2

Identities are not inherited but fashioned both by the individual and the group through their relationship with others. For the individual the social roles that s/he plays imparts identity. Every person in modern society plays multiple roles. For instance, within the family, s/he may be a parent or a child but for each of the specific roles, there are responsibilities and powers. It is not sufficient to enact roles. They also must be recognized and acknowledged. This can often be done through the recognition of the language that is used among role players. Students in schools have their way of referring to their teachers, other students, and class performances. By creating this language which also serves as a code, they create their world of meanings and significances. Similarly, women are also known to create their language and through it their own private space beyond the control of men especially when they congregate at the pond to bathe in rural areas or across washing lines on rooftops in urban areas.

49. Based on the above passage, the following *assumptions* are made:

1. Human societies are dynamic and relational.
2. Language plays a crucial role in identity formation.

Which of the above assumptions is/are correct?

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

50. Find the value of X in the series given below

15, 42, 74, X, 175, 260

- (a) 105
- (b) 95
- (c) 116
- (d) 150

51. A cuboidal water tank is of length 5 meter and breadth 2 meter. $(7/10)$ part of water tank is filled with water. When we throw a stone of size $3 \times 3 \times 1 \text{ m}^3$ in it, the water tank gets completely full. Determine the height of the cuboidal water tank.

- (a) 2 m
- (b) 3 m
- (c) 4 m
- (d) 5 m

52. A manager was given the task to make a garden ready before a certain wedding. So, the manager appointed 30 men to complete the task in 38 days. But after 25 days he appointed 5 more men and the work got completed one day earlier. If he had not appointed additional men, then which of the following would be true?

- (a) He would have been 5 days behind the deadline.
- (b) He would have been 2 days behind the deadline.
- (c) He would have been 2 days ahead of the deadline.
- (d) He would have been 1 day behind the deadline.

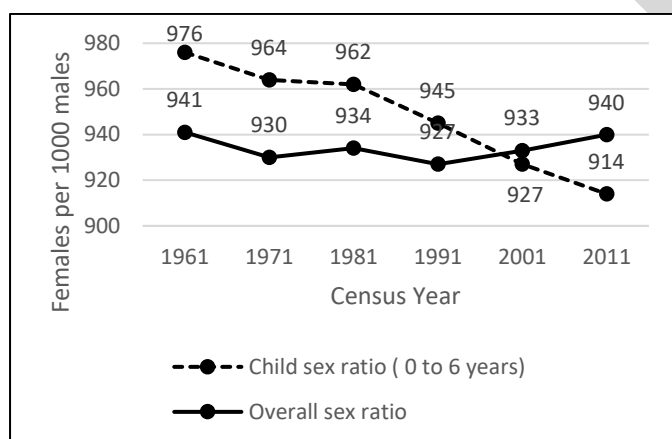
53. Satish goes to the market with a speed of 5 km/hour and discovers that the market got closed 30 minutes before. So, the next day he walks 1 km/hour faster than before, but is still late by 5 minutes. What is the distance to the market from his home?

- (a) 10.5 km
- (b) 21 km
- (c) 12.5 km
- (d) 15 km

54. Some workers were trying to install a light pillar, but its $\frac{4}{9}$ th part had sunk into the mud. They eventually were able to pull out $\frac{3}{5}$ th of the sunken part out of the mud. If 4 m of the pillar is still sunk in the mud, then what is the actual length of the whole pillar?
- (a) 23.5 m
(b) 24 m
(c) 22.5 m
(d) 31.5 m

Directions for the following 2 (two) items:

Consider the following graph in which Child sex ratio (0-6 years) and overall sex ratio of a country during 1961 to 2011 are given, and answer the two items that follow.



55. Looking at the graph, it can be inferred that:
- (a) After 1971, there has been a consistent rise in overall sex ratio of a country.
(b) After 1991, there has been a consistent fall in overall sex ratio of a country.
(c) The fall in child sex ratio has been unabated since 1961.
(d) The rise in child sex ratio has been unabated since 1961.

56. With reference to the above graph, consider the following statements **taking 1961 as base year**:
1. There is no time period from 1961 to 2011, where child sex ratio (0-6 years) and overall sex ratio of a country are equal.
 2. The percentage change in overall sex ratio is more than that of child sex ratio (0-6 years) in the given 50 years.
 3. The overall sex ratio in 1991 and child sex ratio in 2001 are equal.
 4. The average of child sex ratio (0-6 years) and overall sex ratio in the year 1971 and 1981 is same.

Which of the above are the **most logical and rational conclusions** that can be made from the given graph?

- (a) 1 and 2 only
(b) 3 only
(c) 2 and 3 only
(d) 3 and 4 only
57. If 17th March was a Monday, then what day would it be on 12th July?
- (a) Saturday
(b) Tuesday
(c) Wednesday
(d) Friday

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

Allied activities make cultivation more efficient by providing sources of energy and implements. These activities are the sources of organic manure, draught, and traction power. These are also the source of some traditional implements like leather buckets and ropes. Camels, mules, and donkeys are better suited as means of transport in certain areas where the use of mechanical means of transport (such as tractors) is either not feasible or is very costly. In view of the increasing energy crisis, some countries have started the use of their cattle and buffaloes as a source of energy for the farm sector. The allied activities enhance the economic viability and even the technical feasibility of cultivation by providing important inputs at the production stage and making use of the by-products at the disposal stage. Allied activities thus open new dimensions of judicious land utilization through mixed or diversified farming.

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

- (a) Allied activities are necessary for all farmers worldwide.
- (b) Allied activities should completely replace mechanized farming.
- (c) Involvement in allied activities leads to animal exploitation.
- (d) Engaging in allied activities leads to a more efficient, sustainable, and diversified agricultural system.

Passage – 2

A knowledge of the history of climate is important for studying climate change. Climate history is studied by collecting information about relevant parameters of the different components of the climate system. Most of the modern national weather services including India's were established between the middle of the 19th century and the beginning of the 20th century. Therefore, instrumental records on global and regional climates are available for nearly 100- 150 years only. They are useful in understanding climate variability more precisely. They also help in diagnosing any slow changes or trends and fluctuations that have taken place on different spatial and temporal scales and keeping vigil on the anthropogenic (man-made) changes in climate on global, regional and local scales. International mechanisms have been established for monitoring the climate system under the aegis of the World Meteorological Organization (WMO) of the United Nations System, and other scientific agencies.

59. Based on the above passage, the following *assumptions* are made:

- 1. Understanding past climate patterns is crucial for interpreting and predicting future changes.
- 2. Along with understanding climate systems, international collaborations are crucial to addressing climate change.

Which of the assumptions given above is/are correct?

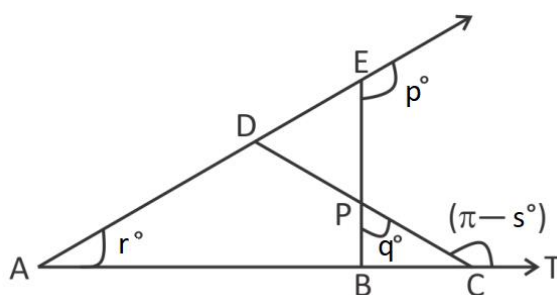
- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

60. Milkha completes one round of circular track in 11 seconds. If the diameter of circular track is 1400 meters which is equal to the side of a square track, then in how many seconds will Milkha complete one round of the square track?
- (a) 30 seconds
(b) 50 seconds
(c) 20 seconds
(d) 14 seconds
61. In the following equation, the mathematical operators used have been replaced by symbols.
 $16 @ 5 \# 31 = ?$
 Find the answer after putting in the right operators.
- (a) 7
(b) 49
(c) 7^3
(d) $(49)^2$
62. Shikha started a business by investing Rs. 30,000, and Hemendra joined her after some time with an investment of Rs. 18,000. If Shikha's share was two-thirds of the profit earned by them after one year, then determine when Hemendra joined.
- (a) 2 months after Shikha
(b) 3 months after Shikha
(c) 8 months after Shikha
(d) 10 months after Shikha
63. Rajeshwari and Kiran decided to meet in Greenland Park but due to rain Kiran said that she couldn't make it. To surprise her, Rajeshwari took her car and went 5 meters south first then she opened the Google map which indicated to turn left and drive 2 meters. After that she again turned left and drove 3 meters and then she turned right and drove 1 meter and reached the Santa cruise market where she bought some sweets for Kiran and then she again turned left and drove 2 meters. Thereafter, she turned left again and drove 2 meters to reach Kiran's house. In which direction is Kiran's house from Rajeshwari's?
- (a) East
(b) South
(c) North
(d) West
64. If $f(2a + 4) = 40a^2 + 80a + 60$, then $f(5a + 4)$ will be equal to
- (a) $250a^2 + 200a + 60$
(b) $220a^2 + 160a + 80$
(c) $120a^2 + 400a + 60$
(d) None of these
65. In a flower shop, a shopkeeper uses 3 varieties of flowers –lily, rose and jasmine to make garlands. The costs of lily, rose and jasmine (in Rs./kg) are Rs. 22, Rs. 30 and Rs. 32 respectively. The garlands formed were sold for Rs. 30/kg and the shopkeeper earned 25% profit by selling them. It is known that the quantity of lily in a garland is 4 kg more than 3 times of the sum of the quantities of the other two varieties of flowers. What is the quantity of jasmine (in kg) used in one garland?
- (a) 5 kg
(b) 4 kg
(c) 2 kg
(d) 3 kg

66. A change disposing machine contains 2 rupee, 3 rupee and 5 rupee coins. The total number of coins is 300 and the amount is Rs.1200. If the number of 2 rupees coins and the number of 3 rupees coins are interchanged, the total amount comes down by Rs.60. Find the total number of 5 rupee coins in the machine.

- (a) 128
(b) 65
(c) 168
(d) 96

67. The angles p° , q° , r° and $(\pi - s^\circ)$ are indicated in the following figure.



Which one of the following is correct?

- (a) $p = q + r - s$
(b) $p = s - q - r$
(c) $p = q + s + r$
(d) $p = q - s - r$

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

Philosophy endeavours to explain through speculative reasoning the possible answers to varieties of questions. Since each philosopher develops his answer in accordance with his intellectual calibre, we have variegated philosophical truths. One thinker refutes the other and comes forward with his own viewpoints which are subsequently refuted by successive philosophers. This attitude is based on the historical situation of the philosopher. Metaphorically speaking, a philosopher inhales much before he exhales, i.e., he studies the environment in which he lives, the philosophical predicaments pronounced by his predecessors, the scriptures or literature available during his times, and develops dialogue, discussion, argument etc., with his rival thinkers so that he sharpens his intellect before exhibiting his philosophical doctrines. The method of refuting the alien view and the presentation of one's own view results in the enrichment as well as enhancement of wisdom to the ardent admirers of philosophy. New vistas of knowledge open the floodgates of wisdom thereby eliminating ignorance.

68. With reference to the above passage, which of the *assumptions* given below are correct?

1. Progress in philosophy does not only depend on reproducing what is already known.
2. Studying philosophy fosters wisdom.
3. Philosophical reasoning leads to an objective hierarchy of correct and incorrect truths.

Select 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

The discovery and colonization of America have contributed to augment the industry, first, of all the countries which trade to it directly, such as Spain, Portugal, France, and England; and, secondly, of all those which, without trading to it directly, send, through the medium of other countries, goods to it of their own produce; such as Austrian Flanders, and some provinces of Germany, which, through the medium of the countries before mentioned, send to it a considerable quantity of linen and other goods. All such countries have evidently gained a more extensive market for their surplus produce and must consequently have been encouraged to increase its quantity.

69. Which of the following statements *best reflects the most logical, rational, and crucial message* implied by the passage?
- (a) Colonization of America led to a significant boost in economic activity and production in European countries.
 - (b) The only objective of the European countries was to take resources out of America.
 - (c) The economic benefits of American colonization were solely enjoyed by the ruling elite in European countries.
 - (d) Getting access to the American market saw an increase in agricultural output in Europe.

Passage – 3

In July 2023, the Central Pollution Control Board (CPCB) proposed a new draft of classification criteria for industries into the red, orange, green and white categories. Delhi-based think tank Centre for Science and Environment (CSE) has reviewed the document and the proposed revisions and methodology for classification. In CSE's view, the methodology is not full-fledged as it does not consider the impact of different types of pollution on the health of humans and occupational health impacts. Also, the fugitive emissions from process operation and material handling have been given low weightage, as compared to hazardous air pollutants and emissions from the combustion of coal or liquid fuels. Due to this, the stone crusher units — one of the most polluting sectors in terms of fugitive emissions — have been proposed to be shifted from the orange to green category in the CPCB report. Dust emissions from the stone crushers should not be given low weightage as it is not less harmful than hazardous air pollutants.

70. Which of the following statements *best reflects the most rational message* conveyed by the author of the passage?
- (a) Due to the dispute on the criteria, there is a need to reconsider the new draft for classifying industries.
 - (b) All fugitive emissions are equally harmful.
 - (c) Stone crushers concerned with fugitive emissions must be kept under the red category.
 - (d) None of the above

71. Rohan starts driving his car from office at a speed of 50 km/hour. After 30 minutes, her colleague Rohini starts driving her car from the same office and in the same direction at a speed of 60 km/hour. In how many hours will Rohini overtake Rohan?

- (a) 2.5 hours
- (b) $5/6$ hours
- (c) 3.5 hours
- (d) $5/4$ hours

72. Price of petrol is increased by 30% by an oil company, but then due to pressure from the ruling party, it is reduced by 20%. What is the net effect on the price overall?

- (a) Does not change
- (b) Increased by 4%
- (c) Decreased by 4%
- (d) None of these

73. A vessel contains mixture of petrol and diesel in the ratio 13: 5. 72 litres of the mixture is taken out of the vessel and replaced with 51 litres of diesel such that the ratio of the petrol to diesel in the vessel becomes 8: 7, respectively, then find the initial quantity of diesel in the vessel?

- (a) 55 litres
- (b) 60 litres
- (c) 30 litres
- (d) 40 litres

74. Unit digit of the expression $(374)^{202} + (384)^{203}$ is

- I. An even number
- II. A prime number
- III. An odd number
- IV. Smallest even number

Select the correct answer using the code given below:

- (a) I and II
- (b) II and IV
- (c) I and IV
- (d) II and III

75. According to 2019 census report, the population of New Zealand (which includes only males and females) is 56000. In a certain period of time, they witnessed 9% reduction in male population and 15% increase in female population. But the total population remained unchanged. The population of males and females now must be:

- (a) Males-35000, Females-21000
- (b) Males-21000, Females-35000
- (c) Males-25000, Females-31000
- (d) None of these

76. In 2005, Dashrath's age was 11 times as that of his son. In 2020, his age becomes 14 times as that of his son's age in 2005. By how many years was Dashrath elder to his son in 2005?

- (a) 30 years
- (b) 50 years
- (c) 25 years
- (d) 5 years

77. Sundar purchased 12 avocados, 18 kiwis and 5 apples for a certain amount. With 40% less amount he could purchase 6 avocados, 9 kiwis and 4 apples. What percentage of the total amount did Sundar spend on the 5 apples?
- (a) 33.33%
(b) 25%
(c) 50%
(d) 20%
78. A teacher asked Shailey to solve the following question on the blackboard:

$$[\{(10/7) \div (2/5 \div 3/2) \times 25/9\} \div \{(4/18) \text{ of } 2/3 \div (3/5 \text{ of } 4/3 \times 3)\}] / [6/8 \text{ of } 10/36 \div 2/3]$$
 She solved the question and her answer was 75/4. What is the difference between the correct answer and her answer?
- (a) 70005/2
(b) 21075/28
(c) 6150/7
(d) 7355/4
79. Ravi deposited his Rs. 25,000 in his bank in year 1995. He debited Rs.500 at the end of 2005 and 2015. His total amount doubles in every 10 years. What amount will he get at the end of the year 2035?
- (a) Rs.4,95,000
(b) Rs.197,000
(c) Rs.137,000
(d) None of these

Directions for the following item:

Read the following passage and answer the item that follows. Your answer to this item should be based on the passage only.

Passage

Patients with cardiomyopathy could be suffering from viral infections in their hearts due to COVID-19, a new study by Japanese scientists demonstrated through an experiment. Cardiomyopathy refers to heart disorders that impair the heart muscles and its ability to pump blood. With a surge in COVID-19 cases worldwide triggered by the variant JN.1, the report raises alarms about COVID-19 triggering a heart failure pandemic of sorts. The study by the Riken Institute recreated human cardiac microtissues through human-induced pluripotent stem cells. For the most part, cardiac microtissues were composed of various heart cells, including cardiomyocytes responsible for the heart's contraction as well as vascular endothelial cells and mural cells. After the cardiac microtissues were infected with SARS-CoV-2, they found that a "viral infection can lead to the reduction of tissue contractility in the acute phase of viral infection".

80. Based on the above passage, the following assumptions have been made:
1. All COVID-19 infections automatically lead to viral infection and cardiomyopathy in the heart in the long run.
 2. The use of human induced pluripotent stem cells dents the credibility to the study's findings.
- Which of the assumptions given above are **not** correct?
- (a) 1 only
(b) 2 only
(c) Neither 1 nor 2
(d) Both 1 and 2

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