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TEST BOOKLET

C

CSAT APTITUDE TEST– (4288) – 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. If 9×7 = IX; 12×5 = VI; 5×4 = II, then 9×4 =?
   (a) IX
   (b) XII
   (c) II
   (d) VI

2. Study the following information and answer the question that follows.

   'time is money' is coded as 'tis nim jes'
   'money buy happiness' is coded as 'lop xer nim'
   'save your time' is coded as 'tis hop hix'
   'your happiness is important' is coded as 'xer mop hix jes'

   What can be the possible code of 'save your important documents'?
   (a) hix jes kop hop
   (b) xer mop hop kop
   (c) hop hix mop kop
   (d) nim hop hix mop

3. Four persons A, B, C and D consisting of two married couples are in a group. Both the women are shorter than their respective husbands. A is the tallest among the four. B is shorter than C, D is brother of B. In this context, which one of the following statements is *not* correct?
   (a) All the four people have family ties.
   (b) C is not the shortest among the four.
   (c) D is shorter than C.
   (d) B is the wife of A.

4. Find the next term in the following series.
   W, W, V, U, S, P, ?
   (a) L
   (b) O
   (c) K
   (d) N

*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

Conservation programs in the Himalayan region are mandated by government agencies, but there is little transnational coordination. Cooperation among the Himalayan nations is vital for designing a robust conservation strategy and meeting the numerous recent challenges threatening the Himalayas. The Himalayan region, with its unparalleled ecological significance, is under increasing threat from urbanization, deforestation, tourism, and climate change. Effective implementation of laws is imperative to curb unchecked development that could lead to irreversible damage. Preserving the Himalayas not only safeguards biodiversity but also ensures the well-being of millions who depend on its resources. By imposing laws rigorously, we can uphold the Himalayas' ecological balance, maintain vital water sources, and set a global precedent for responsible conservation in vulnerable and ecologically significant regions.

5. Based on the above passage, the following *assumptions* have been made:
   1. Human led development is the sole cause threatening the ecological balance of the Himalayas.
   2. Along with exploiting Himalayan resources, Himalayan nations should focus on their conservation as well.

   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. Which of the following statements can be the *most rational inference* drawn from the above passage?

(a) Conservation of the Himalayas requires not only programs but also effective financing.

(b) Strict enforcement of laws and transnational coordination may protect Himalayas and other such ecologically vulnerable regions also.

(c) Exploited Himalayas mean loss of biodiversity and a vulnerable future generation.

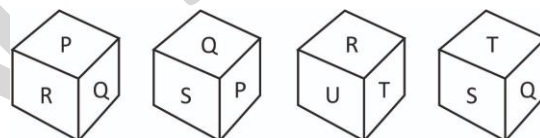(d) The Himalayas need better laws to protect itself from irreversible damage.

Passage – 2

Capitalism has provided unprecedented wealth and prosperity around the world, but a growing community is raising concerns about whether the promise of the capitalist system to achieve a more shared and durable prosperity can be achieved without systemic changes in the way for-profit corporations are governed and managed. The change in public opinion has become evident among workers, consumers, and investors, as well as through new policies enacted by elected officials, more than ever before, the public supports businesses that demonstrate positive social change and sustainable development. These new attitudes have begun to take root in corporations themselves, with a growing community of investors, business leaders, and entrepreneurs expressing a fiduciary duty to create value not only for shareholders but for society.

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

(a) The values of corporate governance do not subscribe to the capitalist model of business.

(b) The inclusion of societal and environmental considerations makes profit-making for corporate people difficult.

(c) To achieve a more shared and durable prosperity, corporations should work for the society and consumers, and not for profit.

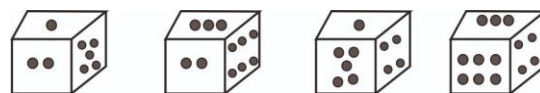(d) The changed outlook of corporate people towards the society is to an extent based on the demands of the people.

8. **Four positions of a dice are given below.**

Identify which letter would be at the bottom when the letter U is at the top?

(a) T

(b) R

(c) Q

(d) P

9. **Four positions of a dice are given below.**

How many points will appear on the face opposite to the face containing 4 points?

(a) 1 point

(b) 2 points

(c) 6 points

(d) 5 points

10. A cube is painted violet on all faces and divided into 729 smaller cubes of equal dimensions. How many such cubes have no paint on any of their faces?

(a) 343

(b) 216

(c) 125

(d) 512

Direction for the following 3 (three) items:

Study the following information carefully and answer the questions that follow:

These are six friends—S, T, U, V, W, X in a group. Following information is given about their weights and speeds.

(i) U is not the heaviest, while X is not the fastest.

(ii) The lightest of the group is the fastest of the group.

(iii) V is faster than T, who is faster than W.

(iv) U is slower than T, but is heavier than T.

(v) V is lighter than W, but heavier than S.

(vi) W is faster than U, while T is heavier than W.

11. Who is the heaviest person of the group?

(a) T

(b) X

(c) U

(d) V

12. What is the rank of T in the decreasing order of weights?

(a) Third

(b) Fourth

(c) Second

(d) First

13. Who is the fastest in the group?

(a) V

(b) T

(c) S

(d) X

14. The faces on a dice are numbered from 1 to 6. If 3 is adjacent to 2, 4 and 6, then which of the following statements is necessarily true?

(a) 3 must be adjacent to 1.

(b) 1 must be opposite to 5.

(c) 2 must be opposite to 6.

(d) 1 must be adjacent to 5.

15. **In a certain coding system:**

18 & 6 % 5 @ 9 = 48

8 @ 15 & 3 * 7 = 33

Then the value of 9 @ 6 * 36 % 12 = ?

(a) 50

(b) 40

(c) 45

(d) 30

Directions for the following 4 (four) items:

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

Six lectures on different subjects are to be organised in a college starting from Monday and ending on Sunday of the same week. Physics lecture is not on Tuesday or Saturday. Chemistry lecture is to be held immediately after Mathematics lecture. Economics lecture is on Wednesday and there is one day gap between Economics and Computer Science lectures. Mathematics lecture is held before Computer Science lecture. The day before the English lecture is an off day. Monday, Thursday or Friday is not that off day.

16. Which of the following is the last scheduled lecture?

   (a) Chemistry

   (b) Computer Science

   (c) Economics

   (d) English

17. How many lectures are scheduled between Economics and Chemistry?

   (a) Three

   (b) Two

   (c) One

   (d) None of these

18. Which day is Physics scheduled on?

   (a) Wednesday

   (b) Friday

   (c) Tuesday

   (d) Thursday

19. Which day is the off day?

   (a) Saturday

   (b) Friday

   (c) Tuesday

   (d) Thursday

Directions for the following 3 (three) 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

The positive spillovers of inclusion are indisputable and well documented: greater workforce participation, higher creativity, and more capital allocated to children's needs. However, poorly conceived measures to boost inclusion can have unintended negative consequences that can include distorted product markets, reduced investment, or faster environmental depletion. For example, in developing economies, free or highly subsidized nonvolumetric pricing of electricity used to pump water can lead to groundwater depletion. Efforts to achieve equality can also backfire if they become a box-ticking exercise, or a quota-driven program, which may fail to address the root causes of inequality. As a result, the goal of achieving a fairer workplace or society may not be achieved, and outcomes may even worsen for certain groups.

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

   1. The state of agriculture in developing economies requires free or highly subsidized electricity.

   2. The outcome of inclusion depends on how it is envisioned.

   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 – 2

As India assumed the presidency of the G20 group of countries for 2022 to 2023, Indian External Affairs Minister S Jaishankar said on December 1 that the country would be the "voice of the Global South, that is otherwise under-represented in such forums". The term has since been used multiple times, such as when Jaishankar said of ongoing global conflicts, "polarisation may occur elsewhere, the people who suffer most are the Global South". 'Global North' refers loosely to countries like the US, Canada, Europe, Russia, Australia and New Zealand, while 'Global South' includes countries in Asia, Africa and South America. For a long time in the study of international political systems, the method of categorising countries into broad categories for easier analysis has existed. The concepts of 'East' and 'West' is one example of this, with the Western countries generally signifying greater levels of economic development and prosperity among their people, and Eastern countries considered as being in the process of that transition. Another similar categorisation is of First World, Second World and Third World countries, referring to countries associated with the Cold war-era alliances of the US, the USSR, and non-aligned countries, respectively. At the center of these concepts is the World Systems approach introduced by sociologist Immanuel Wallerstein in 1974, emphasizing an interconnected perspective of looking at world politics. He said there are three major zones of production: core, peripheral and semi-peripheral. The core zones reap profits, being the owners of cutting-edge technologies – countries like the US or Japan. Peripheral zones, on the other hand, engage in less sophisticated production that is more labor-intensive. In the middle are countries like India and Brazil. In the post-Cold War world, the First World/Third World classification was no longer feasible, because when the Communist USSR disintegrated in 1991, most countries had no choice but to ally at some level with the capitalist US – the only remaining global superpower. Other classifiers have also seen criticism. The East/West binary was seen as often perpetuating stereotypical thinking about African and Asian countries.

21. Which of the following statements can be *inferred* from the above passage?
    1. The G20 or Group of 20 is an intergovernmental forum comprising 19 countries and the European Union (EU).
    2. During the Cold War countries were categorized based on political alliance.

    Select the correct answer using the code given below.
    (a) 1 only
    (b) 2 only
    (c) Both 1 and 2
    (d) Neither 1 nor 2

22. Why was a new system of country classification required in the post-Cold War era?
    (a) Geopolitics underwent a drastic change.
    (b) World politics became unipolar.
    (c) Poor countries wanted patronage of developed countries.
    (d) To break superpowers hegemony a new classification was required.

23. Examine the following statements carefully:
    1. Lady's finger is costlier than cabbage.
    2. Potato is costlier than lady's finger.
    3. Cabbage is not costlier than peas.

    The conclusion that can be drawn from the above statements is that:
    (a) Peas are as costly as Lady's finger.
    (b) Peas are as costly as potato and lady's finger
    (c) Cabbage is least costly of the four vegetables.
    (d) Potato is costlier than cabbage.

24. A carpenter had a large wooden cube with a side length of 5 inches. He wanted to cut it into 125 smaller cubes with a side length of 1 inch. What is the least number of cuts required if the rearrangement of the pieces before/after making a cut is not allowed?
  (a) 12
  (b) 9
  (c) 15
  (d) 10

25. If 15 (4860) 12; 13 (1820) 7; then 17 (?) 12
  (a) 4560
  (b) 5480
  (c) 3768
  (d) 5916

26. Find the next term in the following series.
NM, SRQ, ZYXW, ?
  (a) GFEDC
  (b) CDEFG
  (c) IHGFE
  (d) EFGHI

27. Find the next term in the following series.
PVB, IOU, BHN,?
  (a) LSG
  (b) UAG
  (c) USG
  (d) PMR

28. A cube is painted red on two opposite faces, blue on other pair of opposite faces and black on the remaining opposite faces. It is then cut into smaller cubes of equal sizes such that the size of the edge of smaller cubes is one fourth the size of the edge of original cube. The number of smaller cubes which have only one face painted as red is:
  (a) 4
  (b) 8
  (c) 10
  (d) 16

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

Gabon on August 15, 2023 announced a $500 million debt-for-nature swap. In Africa, it is the largest such deal signed by any country to refinance its debt and conserve marine resources. Debt-for-nature swaps allow heavily indebted developing countries to seek help from financial institutions in the developed world with paying off their debt if they agree to spend on the conservation of natural resources. Usually banks in developed countries buy the debts of such countries and replace them with new loans which mature later. These have lower interest rates. Gabon's debt has been restructured under a Blue Bond in the world's second-largest debt-for-nature swap. In May 2023, the world's first and largest debt swap to conserve oceans was signed by Ecuador. The country had exchanged $1.6 billion denominated bonds for a new $656 million loan. Under the debt-for-nature swap, Gabon has agreed to a deal with the Bank of America, the US International Development Finance Corporation (USDFC) and The Nature Conservancy (TNC), to refinance $500 million in national debt toward marine conservation efforts in the country. This is the fourth project under TNC's "Blue Bonds for Ocean Conservation" strategy. Gabon is the fourth country to partner with TNC on a Blue Bonds project after Seychelles, Belize and Barbados. As part of the deal with Gabon, USDFC is providing political risk insurance of up to $500 million for the financing, which lowers the cost of debt for Gabon.

29. Which of the following statements can be *inferred* from the above passage?
1. Only G7 countries can buy debt for nature swaps from developing countries.
2. Climate financing holds more importance for island countries, as they are more prone to climate change disasters.

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 - 2

Regional climate models, finely tuned to specific geographic areas, offer insights into the intricate interactions between climate patterns and agricultural systems. By simulating localized climate scenarios, they empower farmers and policymakers to anticipate shifts in temperature, precipitation, and other environmental factors. This knowledge enables the identification of suitable crop varieties, irrigation strategies, and planting schedules that align with changing conditions. Additionally, regional climate models aid in mitigating risks associated with extreme weather events, allowing for better resource allocation and adaptive planning.

30. Which one of the following statements *best reflects the crux* of the passage?
- (a) It is crucial to fight against climate change not only for regional considerations, but for global considerations as well.
- (b) Farmers must be equipped to understand the findings of regional climate models to ensure their better application in agriculture.
- (c) The development of regional climate models helps in choosing climate-smart agricultural practices.
- (d) The agricultural output is completely dependent on the efficiency of robust regional climate models.

31. You have been given two similar sequences in two rows:

Sequence-I:	4	13	33	89.5	275.5	971.25
Sequence-II:	8	A	B	C	D	E

What should be the entry in the place of D in Sequence-II?
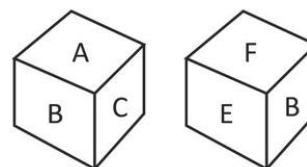- (a) 365.5
- (b) 102.5
- (c) 937.5
- (d) 328.5

32. In the series u _ s u _ s s _s _ _ t u _ t; fill in the six blanks (_) using one of the following choices such that the series follows a specific order.
- (a) uusutt
- (b) tustts
- (c) ttutsu
- (d) uutstt

33. If $16 \oplus 8 \oplus 13 = 17$, $7 \oplus 15 \oplus 18 = 18$, $12 \oplus 28 \oplus 7 = 12$, what is the value of $14 \oplus 9 \oplus 16$?
- (a) 19
- (b) 9
- (c) 13
- (d) 15

34. Alphabets A, B, C, D, E and F have been printed on 6 faces of a dice. The dice is rolled two times as shown in the following figure.

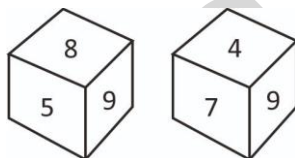Find the alphabet opposite to B.
- (a) E
- (b) A
- (c) D
- (d) C

35. If a, b, c, d and e are real numbers such that a + b < c + d, b + c < d + e, c + d < e + a and d + e < a + b, then

   (a) the largest number is a and the smallest is b.

   (b) the largest number is a and the smallest is c.

   (c) the largest number is e and the smallest is c.

   (d) the largest number is c and the smallest is b.

36. A box has to be made using the sheet shown below.

&	*
	@
	%
	#	$

Which symbol will be on the opposite face of $?

   (a) &

   (b) @

   (c) %

   (d) #

37. **Two positions of a dice are shown below.**

Which digit will appear on the face opposite to the face having number 6?

   (a) 5

   (b) 9

   (c) 4

   (d) 7

Directions for the following 3 (three) 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

Droughts across the world are significantly more common than the data recorded by Gravity Recovery and Climate Experiment (GRACE) from 2002-2017, a new analysis by scientists from the University of Bonn showed. Major droughts are also spread across wider geographies, they found, highlighting limitations of satellite data. The GRACE twin satellites, launched jointly by the space research organisations of the United States and Germany in 2002, have provided data on all of Earth's water reservoirs, over land, ice and oceans. "The spatial resolution of the data on the gravitational field is relatively inexact at about 300 to 350 kilometers as a result of the measurement principle applied." This means, she added, that reliable statements can only be made for areas around 100,000 square kilometers in size. "To give some idea of scale, this minimum area is still larger than Bavaria, Germany's largest federal state at 'only' 70,000 or so square kilometers." By contrast, global hydrological models permit a resolution of 50 kilometers or even less, the article noted. The researchers who made the new analysis combined the GRACE measurements with the hydrological model Water GAP for the first time to show, more precisely than ever before, how the total distribution of water over the Earth's land surfaces has changed in the last two decades. "The new method allows us to test out model calculations on the future effects of climate change, particularly how rising temperatures and changes in precipitation patterns will impact the water balance in different parts of the world," Jürgen Kusche from the Institute of Geodesy and Geoinformation at the University of Bonn was quoted as saying in the university blog.

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

   1. It is possible that satellites can't deliver precise data.

   2. Climate change will impact the global water balance.

   3. Tropical countries will be the worst affected by the change in water balance.

   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 United States sees its fair share of hurricanes. As per the country's National Weather Service (NWS), in an average 3-year period, roughly five hurricanes strike the US coastline – but never in the west coast. This is why Hurricane Hilary, which is currently racing towards Southern California and Mexico, is so out of the ordinary. Though California, in the past, has felt the effects of hurricanes, they typically remain well offshore and subside to become tropical storms by the time they make landfall. And even these tropical storms are rare. Last year's Hurricane Kay was the first tropical storm to impact California in a quarter of a century, and it lost most of its force by the time it hit the coast. Prior to that, Hurricane Nora moved over Southern California as a tropical storm in 1997. As per a 2004 report by the American Meteorological Society, the only tropical storm with hurricane-force winds believed to have hit Southern California came in October 1858, with San Diego bearing its brunt. "It is rare, indeed nearly unprecedented in the modern record, to have a tropical system like this move through Southern California," Greg Postel, a hurricane and storm specialist at the Weather Channel, told CBS News. Unlike states like Florida, Louisiana and Texas on the Gulf of Mexico, which have learnt over the years on how to survive hurricanes, for Californians and Mexicans in the west, it is a novel, terrifying, experience. As per latest estimates, the hurricane will make landfall in the Baja peninsula in Mexico, roughly 330 km south of the port of Ensenada. It will move north from there, bringing record rainfall and extremely strong winds. Tijuana, a sprawling border metropolis of 1.9 million people in Mexico, is at risk of landslides and flooding, because of its hilly terrain, extremely high density of population and poor quality of housing and infrastructure. Mexico has mobilized over 18,000 troops in anticipation of the storm.

39. Why is Hurricane Hilary a rarity?
(a) Tropical storms do not occur along the coast of California
(b) The hurricane will make landfall within territorial areas of California and Mexico.
(c) Coastal California usually witnesses temperate cyclones.
(d) California comes under anti-cyclonic zone.

40. With reference to the above passage, consider the following statements.
1. The coast around California does not have warm water which is required for tropical cyclone formation.
2. Californians and Mexicans are not accustomed to enduring cyclones.
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

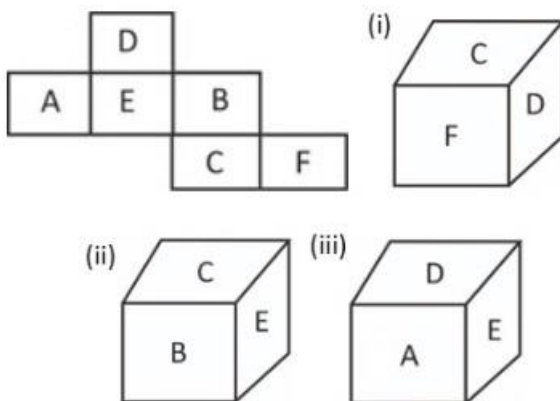*Direction for the following 2 (two) items:*
Study the following information carefully and answer the questions that follow.
216 cubes of the same size are arranged in the form of a bigger cube on a table. Then a column of six cubes is removed from each of the four vertical edges. Thereafter, all the exposed faces of the rest of the solid are colored yellow (except the face which is on the table).

41. How many small cubes are there in the solid after the removal of the four columns?
(a) 196
(b) 192
(c) 208
(d) 204

42. How many cubes do not have any coloured face?
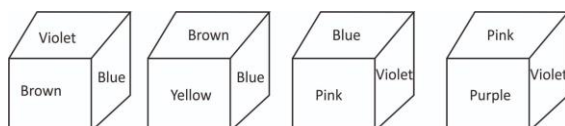
(a) 60

(b) 80

(c) 70

(d) 85

43. Given below are three folded dice and an unfolded dice.

Choose the dice that can be formed from the given sheet of paper (i.e. from the unfolded dice).

(a) Only (i) and (ii)

(b) Only (i) and (iii)

(c) Only (ii) and (iii)

(d) All (i), (ii) and (iii)

44. **Four positions of a dice are given below.**

Which color is on the opposite surface of yellow color?

(a) Blue

(b) Purple

(c) Violet

(d) Pink

45. The following information is known about the ages of Amit, Binod, Chandan and Divyanshu.

1. Either Amit and Binod are of same age or Amit is older than Binod.

2. Either Chandan and Divyanshu are of same age, or Divyanshu is older than Chandan.

3. Binod is older than Chandan.

Which of the following conclusions can be drawn from the above statements?

(a) Amit is older than Binod.

(b) Binod and Divyanshu are of same age.

(c) Divyanshu is older than Chandan

(d) Amit is older than Chandan

46. The following table shows the information related to the performance of a class of 700 students in three different tests.

Tests	I	II	III
Average marks	60	52	68
Range of marks	30 – 85	45 – 74	0 –100

Shyam scored 74 in all the tests. In which of the following tests his performance was best comparatively?

(a) Test I

(b) Test II

(c) Test III

(d) Test II and Test III

47. Consider the following information and answer the question that follows.

   (i) The length, breadth and height of a cuboid shaped wooden block is 4 cm, 3 cm and 6 cm respectively.

   (ii) Two faces measuring 6 cm×4cm are colored black.

   (iii) Two faces measuring 4 cm×3cm are colored red.

   (iv) Two faces measuring 6 cm×3cm are colored yellow.

   (v) Now the block is divided into small cubes of side 1 cm each.

How many small cubes will have at least two coloured faces, one with red and other with yellow?

(a) 10

(b) 12

(c) 8

(d) 15

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

By embracing automation, societies can liberate human beings from repetitive tasks and create space for leisure pursuits. This shift could lead to a larger leisured population, with individuals freed to pursue creative, intellectual, and social activities. However, a balanced approach is crucial, as unchecked automation might also bring about job displacement and societal inequalities. By carefully managing the integration of machines into various sectors, we can strive for a harmonious coexistence where technology uplifts livelihoods, allowing more to savour the enriching benefits of leisure time.

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

(a) The quality of leisure in any society depends on the automation level it has achieved.

(b) Use of automation is the only way to create a large leisured population.

(c) For any society retention of jobs should be more valuable than leisure or enjoyment.

(d) By eliminating monotony technology improves the quality of life for humans, but it should not be at the cost of livelihood.

Passage – 2

Food systems have enabled enough food to be grown to keep pace with the rapidly increasing population while reducing devastating famines that caused hundreds of millions of deaths, but with that great acceleration have come trade-offs and new challenges, particularly with climate change, ecosystem resilience and deepening issues of inequity, which hamper progress to ensure that all people are well nourished. Food systems objectives have therefore progressed from producing enough nutritious food to feed the world to doing so in an environmentally sustainable way while facilitating fair and equitable livelihoods, social justice, and respect for cultural values.

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

(a) Food systems are incomplete without social justice, religious values and fertilizers.

(b) The nutritious food for the rising population comes at a cost of the environment, profits and religious values.

(c) Despite challenges, the objective of food systems is not merely limited to feeding the rising population.

(d) Both (a) and (b)

Passage – 3

Roughly 2 billion air conditioning units are now in operation around the world, making space cooling one of the leading drivers of rising electricity demand in buildings and generation capacity additions to meet peak power demand. Residential units in operation account for nearly 70% of the total. Over the next three decades, the use of air conditioners is set to soar, becoming one of the top drivers of global electricity demand. As the planet warms, ensuring that cooling needs are met equitably is of primary importance. Efficiency standards are a key measure to reduce emissions, together with passive, nature-based and alternative solutions to air conditioners, and improved design of buildings and districts.

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

    (a) Alternative solutions to air conditioners and reduction of cooling demand in residential units are utopian goals, not at all practical.

    (b) Considering the present reality and the rising electricity demand for cooling, emission reduction would require a huge investment.

    (c) The rising use of air conditioners is not only harmful to humans, but also devastating for the planet.

    (d) To meet the rising demand due to global warming, improved building designs, efficiency standards and alternative cooling solutions are required.

51. The dimensions of a cuboid are 3cm×4cm×5cm. Its opposite faces are painted red, yellow, and green. **Find** the number of cubes having only one face painted.

    (a) **22**
    (b) 21
    (c) 12
    (d) 24

52. We have a solid cube of side 15 cm. Its opposite faces are painted red, yellow, and green. If it is cut into cubical blocks each of side 3 cm, find the number of cubes which have only two painted faces.

    (a) 243
    (b) 36
    (c) 25
    (d) 12

53. Each of the 64, 1-centimeter side cubes have exactly one face painted green. if these 64 cubes are joined together to form one large cube, what is the greatest possible fraction of the resultant surface area that could be green?

    (a) 21/32
    (b) 56/56
    (c) 21/28
    (d) 29/35

Direction for the following 2 (two) items:
Study the following information carefully and answer the questions that follow.

Eight persons namely J, K, L, M, N, O, P and Q are working in a startup company on different designations. Only two persons are senior to J, who is junior to K. L is not the junior-most person, and K is not the senior-most person. M is senior to P. P is junior to J. P is not the senior-most person. N is senior to L, but junior to P. Q is senior to L, but junior to P.

54. Which of the following statements is true?

(a) N is senior to Q.

(b) Q is senior to N.

(c) M is the senior-most person.

(d) O is the senior-most person.

55. How many persons are there in the company that are junior to K, but senior to N?

(a) 2

(b) 3

(c) 4

(d) Can't 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

Desertification is not a recent phenomenon; it was triggered by human-led alterations of the environment that made it possible to produce food and domesticate the living space. Yet, in its present shape, it might be more extreme than in previous times because modern human activities have a stronger effect on already degraded land. Human activities that can favour desertification are unsustainable farm practices, heavy industry and mining, deforestation, overexploitation and contamination of water and other natural resources, urbanisation and increase in artificial surfaces, etc. The loss of soil properties can produce poverty and force people to abandon their impoverished land. Globally, the United Nations estimates that the livelihoods of more than 1 billion people in some 100 countries are at some level of risk linked to the effects of desertification.

56. Which of the following statements *best reflects what the passage implies*?

(a) The solution to desertification lies in the adoption of sustainable production practices.

(b) Not only humans, but nature too is responsible for the ill consequences of accelerating desertification.

(c) For people's and the environment's well-being, it is necessary to arrest expanding desertification.

(d) Unless humans control their unsustainable consumption, they will destroy the environment.

Passage – 2

Beyond the surface excitement, gifts can symbolize thoughtful appreciation or recognition, affirming one's value in personal and professional relationships. Additionally, presents often tap into a sense of nostalgia, rekindling the joy associated with surprises from childhood. They may also represent opportunities for self-indulgence, allowing adults to enjoy something they might not ordinarily prioritize. Ultimately, the pleasure derived from presents is woven from a complex web of emotions, memories, and desires, illustrating the depth of human nature's capacity for delight in the simplest gestures.

57. Which of the following statements *best reflects the logical inference* that can be drawn from the passage given above?

(a) The act of giving and receiving gifts should be a regular affair in adult life.

(b) There can be more than one reason why adults feel thrilled by presents.

(c) For adults, presents offer a limited mechanism for excitement and self-indulgence.

(d) Gifts and presents are the best way to build memories, feel emotions and enjoyment in human life.

Passage – 3

As many as 25 countries or a quarter of the world's population are currently exposed to extremely high water stress annually, new data from World Resources Institute (WRI) Aqueduct Water Risk Atlas showed. This means they use over 80 per cent of their renewable water supply for irrigation, livestock, industry and domestic needs. Even a short-term drought puts these places in danger of running out of water and sometimes prompting governments to shut off the taps. Globally, at least 50 per cent of the world's population — around four billion people — live under highly water stressed conditions for at least one month of the year, the WRI report noted. And by 2050, that number could be closer to 60 per cent. A region is said to be under 'water stress' when the demand for water exceeds the available volume or when poor quality restricts use. The 25 most water-stressed countries are: Bahrain, Cyprus, Kuwait, Lebanon, Oman, Qatar, the United Arab Emirates, Saudi Arabia, Israel, Egypt, Libya, Yemen, Botswana, Iran, Jordan, Chile, San Marino, Belgium, Greece, Tunisia, Namibia, South Africa, Iraq, India and Syria. The most water-stressed regions are West Asia and North Africa, where 83 per cent of the population is exposed to extremely high water stress and South Asia, where 74 per cent is exposed. Global water demand is projected to increase by 20-25 per cent by 2050, while the number of watersheds facing high year-on-year variability, or less predictable water supplies, is expected to increase by 19 per cent. For West Asia and North Africa, this means 100 per cent of the population will live with extremely high water stress by 2050. This is an issue of concern not just for consumers and water-reliant industries, but for political stability, according to the authors of the WRI report. The biggest change in water demand between now and 2050 will occur in sub-Saharan Africa, they added. "While most countries in sub-Saharan Africa are not extremely water-stressed right now, demand is growing faster there than any other region in the world."

58. With reference to the above passage, consider the following statements.
1. Water stress could lead to political instability.
2. Sub-Saharan Africa is currently among the most water-stressed regions of the world.

Which of the statements given above is/are true?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

59. If 'TABLE' is written as 8, 'MIND' is written as 10, then how is 'CHOKER' written?
(a) 10
(b) 11
(c) 9
(d) 12

60. Find the wrong number in the following series:
40, 42, 56, 90, 150, 250, 392
(a) 42
(b) 150
(c) 56
(d) 250

61. Find the next term in the following series.
B25, A26, Z1, Y2, ?
(a) L7
(b) A9
(c) X3
(d) X7

62. The letters from A to Z are numbered from 1 to 26 respectively. If RAM = 5 and TOP = 6, then what is WBC equal to ?
(a) 1
(b) 2
(c) 3
(d) 4

63. In a certain code, '307' means 'drink fruit juice', '963' means 'juice is sour' and '905' means 'apple is fruit'. The digit in the code that indicates `drink' is

(a) 1

(b) 2

(c) 3

(d) 7

64. If KNOOR is coded as #^%#* and CRACK is coded as ^%&&@, then CONS is coded as

(a) &#*$

(b) *%^&

(c) @^*&

(d) #*@^

65. Find the next term in the following series.

Q, W, Y, P, G, I, ?, ?

(a) O, D

(b) D, O

(c) B, O

(d) O, B

66. A, B, C, D and E are five friends standing in a line for prayer, in decreasing order of their heights. Among them A is taller than C and they are adjacent to each other. D is taller than E, while B is shorter than only D. Who is standing in the middle?

(a) A

(b) C

(c) E

(d) Either A or E

67. Soumya is at 8th position from the front in a queue for buying tickets for a circus show. She spots Abhinav who is 10th from the end. There are four persons between the two (Soumya and Abhinav). What is the minimum number of persons in the queue?

(a) 21

(b) 11

(c) 22

(d) 12

Direction for the following 2 (two) Questions:
Read the information given below carefully and answer the 2 (two) items that follow.

Six persons P, Q, R, S, T and U, are friends. P and Q are from France while the rest belong to Germany. S and U are vegetarian while the others are non – vegetarian. P, R and S are thin while the others are fat.

68. Which two persons, who are fat, are non – vegetarian?

(a) P and U

(b) R and T

(c) Q and T

(d) T and U

69. Which vegetarian person from Germany is fat?

(a) Q

(b) R

(c) T

(d) U

70. If 'BEYOND' is written as 'DHCMKZ', then how is 'VERTEX' written?

(a) BTVRXH

(b) VRBTXH

(c) XHWRBT

(d) XHVRBT

71. A cube of side 9 cm is painted on all of its faces. If it is sliced into 1 cubic centimetre cubes, how many such 1 cubic centimetre cubes will have exactly one of their faces painted?

(a) 316

(b) 294

(c) 216

(d) 250

72. A cube of side 12 cm is painted red, blue and yellow on opposite faces and is then cut into cubes of 1 cm side each. How many such cubes have color on at least one face?

(a) 1016

(b) 728

(c) 816

(d) 950

73. There are four boxes Red, Yellow, Blue and Green which are kept in a stack but not necessarily in the same order. There are two boxes between Red box and Green box and there is one box between Red and Blue box. Red box is not above Yellow one. Then the number of box(es) above Yellow box is/are

(a) Two

(b) Three

(c) One

(d) None

Directions for the following 7 (seven) 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

A recent study has found links between fine particulate matter (PM2.5) air pollution and antibiotic resistance. Africa and Asia could face the largest increase in antibiotic resistance, the study published in journal Lancet Planetary Health said. The study presented the first global estimates of antibiotic resistance and burden of premature deaths attributable to antibiotic resistance resulting from PM2.5 pollution. Significant correlations between PM2.5 and antibiotic resistance were consistent globally in most antibiotic-resistant bacteria and correlations have strengthened over time. Air pollution is considered to be the world's largest environmental health threat, accounting for seven million deaths around the world every year, according to the United Nations. Globally, a 10 per cent increase in annual PM2.5 could lead to a 1.1 per cent increase in aggregate antibiotic resistance and 43,654 premature deaths, the paper found. Saudi Arabia would have a three per cent increase in antibiotic resistance if PM 2.5 increases by 10 per cent, Niger would see a 2.9 per cent increase, United Arab Emirates a 2.6 per cent increase, Pakistan a 2.6 per cent increase, Nigeria a 2.5 per cent increase, India a 2.5 per cent increase, Cameroon a 2.2 per cent increase, Bahrain a 2.2 per cent increase and China a 2.1 per cent increase. China and India could be the countries where changes in PM2.5 have the largest effect on premature deaths attributable to antibiotic resistance due to their large populations. It is important to understand all pathways adding up to antimicrobial resistance (AMR), said Rajeshwari Sinha, programme manager, sustainable food systems programme, Delhi-based think tank Centre for Science and Environment. "This study adds to the growing evidence base and throws more light on a new route of AMR spread through the air.

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

(a) The largest environmental health issue in the world, according to UN estimates, is air pollution.

(b) The relationship between PM2.5 and antibiotic resistance has become clearer over time.

(c) The number of deaths caused by variations in PM 2.5 directly relates to the country's population.

(d) Developing countries need extra funding from the developed world to fight antibiotic resistance.

Passage – 2

Chennai-based space-tech startup Agnikul Cosmos announced on Thursday (August 17) that it had taken a rocket that it has developed to a launchpad in Sriharikota to "commence integration checks" for a proposed suborbital space flight. A successful flight will make Agnikul the second Indian space-tech company to send a vehicle to space after Hyderabad-based Skyroot Aerospace. The launch of Skyroot's 545-kg rocket named Vikram-S in November 2022 marked the launch of India's private space industry. After the space sector was opened to private companies in 2020, Skyroot signed a Memorandum of Understanding with the Indian Space Research Organisation (ISRO). Several dozens of space-tech startups have since entered the fray. Skyroot and Agnikul are among the companies that are already working on launch vehicles, satellites, and their applications. Agnikul said its Suborbital Tech Demonstrator (SorTeD) single-stage launch vehicle, called Agnibaan, is driven by the company's patented Agnilet engine. "Agnibaan SOrTeD will lift off vertically & follow a predetermined trajectory," the company said in a post on the social media platform X, formerly known as Twitter. According to Agnikul's website, Agnibaan can carry payloads up to 100 kg to a low Earth orbit (LEO) up to 700 km. The vehicle is 18 m in height, 1.3 m in diameter, and has a liftoff mass of 14,000 kg. The payload envelope measures 2m x 1.5m and can carry one or more satellites.

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

1. MoU between ISRO and space tech start-ups will allow the start-ups to use ISRO's launchpad and testing labs.

2. Space tech start-ups need funding for efficient functioning.

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

Business as usual in the energy sector has become more challenging in the EU as distributed energy technologies and supportive policy included in the EU Energy Package have meant that new types of stakeholders, including citizens, citizen collectives, and municipalities, can participate in the energy system in innovative ways. Their "new" relationships, behaviours, and actions in the context of the energy transition, vis à vis the existing system, are often referred to as social innovation in energy systems. Socially innovative activities may deliver products and services like those of incumbent energy business models e.g., sustainable energy generation, but also create social value that traditional energy business models may not.

76. Which one of the following statements ***best reflects the crucial message*** conveyed by the author of the passage?

(a) The social innovation in energy systems stemming from EU Energy Package can make energy generation more sustainable and inclusive.

(b) India should also learn from the energy policies of the EU by including socially innovative energy business models.

(c) Sustainable energy generation is not possible without social inclusion and participation of civil societies.

(d) Socially inclusive energy transition across the world is a must to ensure sustainable energy generation.

Passage – 4

Promoting a mindset where individuals refrain from both offering and unquestioningly adopting opinions can foster a culture of critical thinking and open-mindedness. Encouraging people to withhold their opinions challenges them to engage in deeper reflection, research, and empathy before taking a stance. This approach can lead to more informed discussions, where ideas are refined and enriched through collaborative exploration. Simultaneously, resisting the blind acceptance of opinions encourages a healthy scepticism that safeguards against misinformation and groupthink. However, the goal isn't to discourage dialogue but rather to elevate it. Striking a balance between personal expression and receptivity to diverse viewpoints nurtures a well-rounded and intellectually resilient society.

19 19

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

1. A society which is intolerant of various opinions may become intellectually stagnant.

2. For the development of ideas through cooperation, people should express their opinions freely in a spontaneous and unfiltered manner.

Which of the above assumptions is/are valid?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

78. Which one of the following statements ***best reflects the crucial message*** conveyed by the author of the passage?

(a) Opinions reflect the culture of conservative thinking, and prevent research, leading to people becoming prone to misinformation.

(b) Substantiation of opinions is a must to avoid scepticism and promote well-informed decision-making.

(c) Expression of opinions is a part of the right to freedom of expression, and therefore, should not be restricted.

(d) The informed act of giving opinions or accepting them helps build an intellectually resilient society.

Passage – 5

Considering the growing realization that complete mitigation of climate change may be unattainable, governments must pivot their focus towards crafting agile policies for swift responses to its impacts. Embracing adaptive strategies becomes paramount to addressing the imminent challenges posed by changing weather patterns, rising sea levels, and extreme events. By fostering a culture of preparedness, governments can proactively allocate resources for disaster response, infrastructure reinforcement, and community resilience. Collaborative efforts between nations are vital to share knowledge and best practices, as climate change knows no borders. While mitigation efforts continue to hold value, pragmatic policies emphasizing rapid implementation will prove pivotal in safeguarding ecosystems, livelihoods, and vulnerable populations from the mounting consequences of evolving climate change reality.

79. Which of the following is/are the *most rational and logical inference/inferences* that can be made from the passage?
    1. Adaptation to climate change requires policies that are implementable.
    2. Climate change consequences do not discriminate among people of different nations.

    Select the correct answer from the code given below.
    (a) 1 only
    (b) 2 only
    (c) Both 1 and 2 only
    (d) Neither 1 nor 2

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

    (a) For addressing climate change, mitigation is the past and adaptation is the future.

    (b) Effective plans and cross-country cooperation are the way forward to fight the ill consequences of climate change reality.

    (c) Planning and cooperation between world financial institutions is critical for preparing for disaster response, infrastructure reinforcement and building community resilience.

    (d) The fight against climate change not only needs national governments but also their citizens to participate actively.