UPSC CSE Prelims 2023 — CSAT (GS Paper 2)

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Passage: *In India, the segregation of municipal waste at source is rare. Recycling is mostly with the informal sector. More than three-fourths of the municipal budget goes into collection and transportation, which leaves very little for processing/resource recovery and disposal. Where does waste-to-energy fit into all this? Ideally it fits in the chain after segregation (between wet waste and rest), collection, recycling, and before getting to the landfill. Which technology is most appropriate in converting waste to energy depends on what is in the waste (that is biodegradable versus non-biodegradable component) and its calorific value. The biodegradable component of India's municipal solid waste is a little over 50 per cent, and biomethanation offers a major solution for processing this.*

Q1. Based on the above passage, the following assumptions have been made: Which of the assumptions given above is/are correct?

1. Collection, processing and segregation of municipal waste should be with government agencies.
2. Resource recovery and recycling require technological inputs that can be best handled by private sector enterprises.

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

Q2. Which one of the following statements best reflects the crux of the passage?

(a) Generation of energy from municipal solid waste is inexpensive.
(b) Biomethanation is the most ideal way of generating energy from municipal solid waste.
(c) Segregation of municipal solid waste is the first step in ensuring the success of waste-to- energy plants.
(d) The biodegradable component of India's municipal solid waste is not adequate to provide energy from waste efficiently/effectively.

Passage: *There is a claim that organic farming is inherently safer and healthier. The reality is that because the organic farming industry is still young and not well-regulated in India, farmers and consumers, alike, are not only confused about what products are best for them, but sometimes use products in ways that could harm them as well. For example, since organic fertilizers are difficult to obtain on a large scale in India, farmers often use farmyard manure, which may contain toxic chemicals and heavy metals. Certain plant sprays, such as Datura flower and leaf spray, have an element called atropine. If it is not applied in the right dose, it can act on the nervous system of the consumer. Unfortunately, how much and when to use it are not well-researched or regulated issues.*

Q3. Based on the above passage, the following assumptions have been made: Which of the assumptions given above is/are correct?

1. Organic farming is inherently unsafe for both farmers and consumers.
2. Farmers and consumers need to be educated about eco-friendly food.

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

Q4. Which one of the following statements best reflects the most logical, rational and practical message conveyed by the author of the passage?

(a) In India, organic farming should not be promoted as a substitute for conventional farming.
(b) There are no safe organic alternatives to chemical fertilizers.
(c) In India, farmers need to be guided and helped to make their organic farming sustainable.
(d) The aim of organic farming should not be to generate huge profits as there is still no global market for its products.

Passage: *Food consumption patterns have changed substantially in India over the past few decades. This has resulted in the disappearance of many nutritious foods such as millets. While food grain production has increased over five times since independence, it has not sufficiently addressed the issue of malnutrition. For long, the agriculture sector focused on increasing food production particularly staples, which led to lower production and consumption of indigenous traditional corps/grains, fruits and other vegetables, impacting food and nutrition security in the process. Further, intensive, monoculture agriculture practices can perpetuate the food and nutrition security problem by degrading the quality of land, water and food derived through them.*

Q5. Based on the above passage, the following assumptions have been made: Which of the above assumptions are valid?

1. To implement the Sustainable Development Goals and to achieve zero-hunger goal, monoculture agriculture practices are inevitable even if they do not address malnutrition.
2. Dependence on a few crops has negative consequences for human health and the ecosystem.
3. Government policies regarding food planning need to incorporate nutritional security.
4. For the present monoculture agriculture practices, farmers receive subsidies in various ways and government offers remunerative prices for grains and therefore they do not tend to consider crop diversity.

(a) 1, 2 and 4 only
(b) 2 and 3 only
(c) 3 and 4 only
(d) 1, 2, 3 and 4

Q6. A box contains 14 black balls, 20 blue balls, 26 green balls, 28 yellow balls, 38 red balls and 54 white balls. Consider the following statements: Which of the above statements is/are correct?

1. The smallest number n such that any n balls drawn from the box randomly must contain one full group of at least one colour is 175.
2. The smallest number m such that any m balls drawn from the box randomly must contain at least one ball of each colour is 167.

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

Q7. If 'ZERO' is written as 'CHUR', then how is 'PLAYER' written?

(a) SOCACT
(b) SODBGT
(c) SODBHT
(d) SODBHU

Q8. Consider the following statements:

1. A is older than B.
2. C and D are of the same age.
3. E is the youngest.
4. F is younger than D.
5. F is older than A. How many statements given above are required to determine the oldest person/persons?

(a) Only two
(b) Only three
(c) Only four
(d) All five

Q9. Consider the following including the Question and the Statements: There are 5 members A, B, C, D, E in a family. Question: What is the relation of E to B ? Statement-1: A and B are a married couple. Statement-2: D is the father of C. Statement-3: E is D's son. Statement-4: A and C are sisters. Which one of the following is correct in respect of the above Questions and Statements?

(a) Statement-1, Statement-2 and Statement-3 are sufficient to answer the Question.
(b) Statement-1, Statement-3 and Statement-4 are sufficient to answer the Question.
(c) All four statement together are sufficient to answer the Question.
(d) All four statements are not sufficient to answer the Question. 7 ©Vision IAS

Q10. Choose the group which is different from the others:

(a) 17, 37, 47, 97
(b) 31, 41, 53, 67
(c) 71, 73, 79, 83
(d) 83, 89, 91, 97

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Passage: *To tackle the problem of pollution in cities, policy makers think that drastic actions like temporary use of odd-even number scheme for vehicles, closing schools, factories, construction activities, and banning the use of certain type of vehicles are a way forward. Even then the air is not clean. Vehicles more than 15 years old comprise one percent of the total; and taking them off the road will not make any difference. Banning certain fuels and car types arbitrarily is not proper. Diesel engines produce more PM 2.5 and less CO than petrol or CNG engines. On the other hand, both diesel and CNG engines produce more 2 NO than petrol engines. No one has measured the amount of NO that CNG engines are emitting. x x Arbitrary bans on vehicles that have passed mandated fitness tests and periodic pollution tests are unfair. What is needed is the scientific and reliable information about the source of pollutants on a continuing basis and the technologies that will work to reduce pollution from them.*

Q11. Which one of the following statements best reflects the most logical and rational implication conveyed by the passage?

(a) Arbitrary curbs on vehicles to reduce pollution are difficult to implement.
(b) Knee-jerk reactions cannot but an evidence-based approach will be more effective.
(c) A heavy penalty should be enforced on those driving without periodic pollution tests.
(d) In the absence of laws to deal with the problem of pollution, the administration tends to make arbitrary decisions.

Passage: *Good corporate governance structures encourage companies to provide accountability and control. A fundamental reason why corporate governance has moved onto the economic and political agenda worldwide has been the rapid growth in international capital markets. Effective corporate governance enhance access to external financing by firms, leading to greater investment, higher growth and employment. Investors look to place their funds where the standards of disclosure, of timely and accurate financial reporting, and of equal treatment to all stakeholders are met.*

Q12. Which of the following statements best reflects the logical inference from the passage given above?

(a) It is an important agenda of the countries around the world to ensure access to good external financing.
(b) Good corporate governance improves the credibility of the firms.
(c) International capital markets ensure that the firms maintain good corporate governance.
(d) Good corporate governance paves the way for robust supply chains.

Passage: *Elephants are landscape architects, creating clearings in the forest, preventing overgrowth of certain plant species and allowing space for the regeneration of others, which in turn provide sustenance to others herbivorous animals. Elephants eat plants, fruits and seeds, propagating the seeds when they defecate in other places as they travel. Elephant dung provides nourishment to plants and animals and acts as a breeding ground for insects. In times of drought, they access water by digging holes which benefits other wildlife.*

Q13. Which one of the following statements best reflects the most logical and rational inference that can be drawn from the passage?

(a) The home range of elephants needs to be a vast area of rich biodiversity.
(b) Elephants are the keystone species and they benefit the biodiversity.
(c) Rich biodiversity cannot be maintained in the forests without the presence of elephants.
(d) Elephants are capable of regenerating forests with species as per their requirement. 10 ©Vision IAS

Q14. If 7 ■ 9 ■ 10 = 8, 9 ■ 11 ■ 30 = 5, 11 ■ 17 ■ 21 = 13, what is the value of 23 ■ 4 ■ 15 ?

(a) 6
(b) 8
(c) 13
(d) 15

Q15. Let x be a positive integer such that 7x + 96 is divisible by x. How many values of x are possible?

(a) 10
(b) 11
(c) 12
(d) Infinitely many

Q16. If p, q, r and s are distinct single digit positive numbers, then what is the greatest value of (p + q) (r + s) ?

(a) 230
(b) 225
(c) 224
(d) 221

Q17. A number N is formed by writing 9 for 99 times. What is the remainder if N is divided by 13 ?

(a) 11
(b) 9
(c) 7
(d) 1

Q18. Each digit of a 9-digit number is 1. It is multiplied by itself. What is the sum of the digits of the resulting number?

(a) 64
(b) 80
(c) 81
(d) 100

Q19. What is the sum of all digits which appear in all the integers from 10 to 100 ?

(a) 855
(b) 856
(c) 910
(d) 911

Q20. ABCD is a square. One point on each of AB and CD; and two distinct points on each of BC and DA are chosen. How many distinct triangles can be drawn using any three points as vertices out of these six points?

(a) 16
(b) 18
(c) 20
(d) 24

Passage: *The emissions humans put into the atmosphere now will affect the climate in the middle of the century and onwards. Technological change, meanwhile, could make a future transition away from fossil fuels cheap or it might not, leaving the world with a terrible choice between sharply reducing emissions at huge cost or suffering through the effects of unabated warming. Businesses that do not hedge against the threat of uncertain outcomes fail. The world cannot afford such recklessness on climate change. 15 ©Vision IAS*

Q21. Which one of the following statements best reflects the crucial message conveyed by the author of the passage?

(a) Businesses that cause emissions may need to close down or pay for pollution in future.
(b) The only solution is technological development related to the issues of climate change.
(c) Waiting to deal with carbon emissions until technology improves is not a wise strategy.
(d) Since future technological change is uncertain, new industries should be based on renewable energy sources.

Passage: *Environmental problems cause health problems. Substantial changes in lifestyle can reduce environmental or health problems, but this idea appears almost impossible to adopt. With environmental problems, individual efforts can be perceived as having a negligible effect and therefore lead to inertia. With health, on the other hand, individual choices can make the difference between life and death, literally. And yet, barring a few, there seems to be the same collective lethargy towards making their choices.*

Q22. Which one of the following statements best implies the most rational assumption that can be made from the passage?

(a) We are likely to spend more money on cure than prevention.
(b) It is the job of the government to solve our environmental and public health problems.
(c) Health can be protected even if environmental problems go on unattended.
(d) Loss of traditional lifestyle and the influence of western values led to some unhealthy way of living.

Passage: *Many people are not eating the right food. For some, it is simply a decision to stick with food they enjoy but which is not too healthy. This is leading to an increase in non-communicable diseases. This in turn leads to major burden on our health-care systems that have the potential to derail the economic progress which is essential for the poor to improve their lives. For others, it is about limited access to nutritious food or a lack of affordability, leading to monotonous diets that do not provide the daily nutrients for them to develop fully. Part of the reason nutrition is under threat worldwide is that our food systems are not properly responding to nutritional needs. Somewhere along that long road from farm to fork, there are serious detours taking place.*

Q23. Which one of the following statements best reflects the crux of the passage?

(a) The scheme of Universal Basic Income should be implemented worldwide as a way of poverty alleviation.
(b) We must place food-based nutrition at the centre of our policy debate.
(c) Nutritional status of food should be improved by creating appropriate genetically modified crops.
(d) Using modern food processing technologies, we must fortify food items with required nutrient elements.

Q24. Three of the five positive integers p, q, r, s, t are even and two of them are odd (not necessarily in order). Consider the following: Which of the above statements is/are correct?

1. p + q + r – s - t is definitely even.
2. 2p + q + 2r - 2s + t is definitely odd.

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

Q25. Consider the following in respect of prime number p and composite number c. ■+■ Which of the statements given above are correct?

1. can be even. ■–■
2. 2p+c can be odd.
3. pc can be odd.

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

Q26. A 3-digit number ABC, on multiplication with D gives 37DD where A, B, C and D are different non-zero digits. What is the value of A+B+C ?

(a) 18
(b) 16
(c) 15
(d) Cannot be determined due to insufficient data

Q27. For any choices of values of X, Y and Z, the 6 digit number of the form XYZXYZ is divisible by:

(a) 7 and 11 only
(b) 11 and 13 only
(c) 7 and 13 only
(d) 7, 11 and 13

Q28. 125 identical cubes are arranged in the form of cubical block. How many cubes are surrounded by other cubes from each side?

(a) 27
(b) 25
(c) 21
(d) 18

Q29. How many distinct 8-digit numbers can be formed by rearranging the digits of the number 11223344 such that odd digits occupy odd positions and even digits occupy even positions?

(a) 12
(b) 18
(c) 36
(d) 72

Q30. A, B, C working independently can do a piece of work in 8, 16 and 12 days respectively. A alone works on Monday, B alone works on Tuesday, C alone works on Wednesday; A alone, again works on Thursday and so on. consider the following statements: Which of the above statements is/are correct?

1. The work will be finished on Thursday.

2. The work will be finished in 10 days.

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

Passage: *We often hear about conflicts among different States in India over river waters. Of the 20 major river systems, 14 are already water-stressed;75% of the population lives in water-stressed regions, a third of whom live in water-scare areas. Climate change, the demands of rising population and the need for agriculture to keep pace, and increased rate of urbanization and industralization will exacerbate water stress. According to the Constitution of India, water is a State subject and not that of the Union, except for regulation of inter-State rivers. Key to ensuring balance between competing demands of various stakeholders is a basin-based approach to allocate water amongst constituent regions and States. Allocating fair share of water to them requires assessments based on objective criteria, such as specificities of the river basin, size of dependent population, existing water use and demand, efficiency of use, projected future use, etc. while ensuring the environmental needs of the river and aquifers.*

Q31. Which one of the following statements best reflects the most rational, practical and immediate action required to ensure fair and equitable allocation of water to different stakeholders?

(a) A national, pragmatic, legal and policy framework for water allocation should be made.
(b) All river systems of the country should be linked and huge aquifers created.
(c) Water channels between regions of water surplus and regions of water deficit should be created.
(d) To mitigate water crisis, water demand of sectors such as agriculture and industry should be reduced.

Passage: *More than half of Indian women and almost a quarter of Indian men of working age suffer from anaemia. According to studies, they are anywhere from 5-15% less productive than they could be, as a result thereof. India also has the largest tuberculosis burden in the world, costing 170 million workdays to the country annually. But what is just as important as lost productivity now is lost potential in the future. It is becoming increasingly clear that on many measures of cognitive ability, malnourished Indian children perform, two or three times worse than their adequately nourished peers. For an economy that will be more dependent on highly skilled workers, this poses a significant challenge. And it is one that really should be addressed given India's demographic outlook. 23 ©Vision IAS*

Q32. Which one the following statements best reflects what is implied by the passage?

(a) Education system must be strengthened in rural areas.
(b) Large scale and effective implementation of skill development programme is the need of the hour.
(c) For economic development, health and nutrition of only skilled workers needs special attention.
(d) For rapid economic growth as envisaged by us, attention should be paid to health and nutrition of the people.

Passage: *In India, a majority of farmers are marginal and small, less educated and possess low adaptive capabilities to climate change, perhaps because of credit and other constraints. So, one cannot expect autonomous adaptation to climate change. Even if it was possible, it would not be sufficient to offset losses from climate change. To deal with this, adaptation to climate change is paramount, alongside a fast mitigation response. Another solution is to have a planned or policy-driven adaptation, which would require the government to come up with policy recommendations. Perception is a necessary pre-requisite for adaptation. Whether farmers are adapting agricultural practices to climate change depends on whether they perceive it or not. However, this is not always enough for adaptation. It is important how a farmer perceives the risks associated with climate change.*

Q33. Which one of the following statements best reflects the most logical and rational message conveyed by the author of the passage?

(a) Adaptation to climate change and mitigation response are basically the responsibilities of the government.
(b) Climate change causes a change in government policies regarding land use patterns in the country.
(c) Risk perceptions of farmers are important for motivating them for taking adaptation decisions.
(d) Since mitigation is not possible, governments should come up with policies for quick response to climate change.

Q34. Raj has ten pairs of red, nine pairs of white and eight pairs of black shoes in a box. If he randomly picks shoes one by one (without replacement) from the box to get a red pair of shoes to wear, what is the maximum number of attempts he has to make?

(a) 27
(b) 36
(c) 44
(d) 45

Q35. In how many ways can a batsman score exactly 25 runs by scoring single runs, fours and sixes only, irrespective of the sequence of scoring shots?

(a) 18
(b) 19
(c) 20
(d) 21

Q36. There are four letters and four envelopes and exactly one letter is to be put in exactly one envelope with the correct address. If the letters are randomly inserted into the envelopes, then consider the following statements: Which of the statements given above is/are correct?

1. It is possible that exactly one letter goes into an incorrect envelope.
2. There are only six ways in which only two letters can go into the correct envelopes.

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

Q37. What is the remainder when 85 × 87 × 89 × 91 × 95 × 96 is divided by 100?

(a) 0
(b) 1
(c) 2
(d) 4

Q38. What is the unit digit in the expansion of (57242)9×7×5×3×1 ?

(a) 2
(b) 4
(c) 6
(d) 8

Q39. If ABC and DEF are both 3-digit numbers such that A, B, C, D, E, and F are distinct non-zero digits such that ABC+ DEF= 1111, then what is the value of A+B+C+D+E+F ?

(a) 28
(b) 29
(c) 30
(d) 31

Q40. D is a 3-digit number such that the ratio of the number to the sum of its digits is least. What is the difference between the digit at the hundred's place and the digit at the unit's place of D?

(a) 0
(b) 7
(c) 8
(d) 9

Passage: *In India, while the unemployment rate is a frequently used measure of poor performance of the economy, under conditions of rising school and college enrolment, it paints an inaccurate picture. The reported unemployment rate is dominated by the experience of younger Indians who face higher employment challenges and exhibit greater willingness to wait for the right job than their older peers. The unemployment challenge is greater for people with secondary or higher education, and rising education levels inflate unemployment challenges.*

Q41. Which one of the following statements most likely reflects as to what the author of the passage intends to say?

(a) Enrolment in schools and colleges is high but there is no quality education.
(b) Unemployment must be seen as a function of rising education and aspirations of young Indians.
(c) There are no labour-intensive industries to accommodate the huge number of unemployed people.
(d) The education system should be properly designed so as to enable the educated people to be self-employed.

Passage: *"Science by itself is not enough, there must be a force and discipline outside the sciences to coordinate them and point to a goal. It is not possible to run a course aright when the goal itself has not been rightly placed. What science needs is*

philosophy – the analysis of scientific method and the coordination of scientific purposes and results; without this, any science must be superficial. Government suffers, precisely like science, for lack of philosophy. Philosophy bears to science the same relationship which statesmanship bears to politics: movement guided by total knowledge and perspective, as against aimless and individual seeking. Just as the pursuit of knowledge becomes scholasticism when divorced from the actual needs of men and life, so the pursuit of politics becomes a destructive bedlam when divorced from science and philosophy."

Q42. Which one of the following statements best reflects the most rational, logical and practical message conveyed by the passage?

(a) Modern statesmen need to be well trained in scientific methods and philosophical thinking to enable them to have a better perspective of their roles, responsibilities and goals.

(b) It is not desirable to have Governments managed by empirical statesmen unless well mixed with others who are grounded in learning and reflect wisdom.

(c) As the statesmen/bureaucrats are the products of a society, it is desirable to have a system of education in a society that focuses on training its citizens in scientific method and philosophical thinking from a very early age.

(d) It is desirable that all scientists need to be philosophers as well to make their work goal- oriented and thus purposeful and useful to the society.

Passage: *"The last end of the state is not to dominate men, nor to restrain them by fear; rather it is so to free each man from fear that he may live and act with full security and without injury to himself or his neighbour. The end of the state, I repeat, is not to make rational beings into brute beasts and machines. It is to enable their bodies and their minds to function safely. It is to lead men to live by, and to exercise, a free reason; that they may not waste their strength in hatred, anger and guile, nor act unfairly toward one another."*

Q43. Based on the above passage, which one of the following terms expresses the ultimate goal of the state?

(a) Personal safety

(b) Health of body and mind

(c) Communal harmony

(d) Liberty

Q44. What is the remainder if 2192 is divided by 6?

(a) 0

(b) 1

(c) 2

(d) 4

Q45. Consider the sequence ABC_ _ABC_DABBCD_ABCD that follows a certain pattern. Which of the following completes the sequence?

(a) DACB

(b) CDAB

(c) DCCA

(d) DDCA

Q46. AB and CD are 2-digit numbers. Multiplying AB with CD results in a 3-digit number DEF. Adding DEF to another 3-digit number GHI results in 975. Further A, B, C, D. E, F, G, H, I are distinct digits. If E= 0, F=8, then what is A+B+C equal to?

(a) 6

(b) 7

(c) 8

(d) 9

Q47. Consider the following statements in respect of five candidates P, Q, R, S, and T. Two statements are true and one statement is false. True Statement: One of P and Q was selected for the job. False Statement: At least one of R and S was selected for the job. True Statement: At most two of R, S and T were selected for the job. Which of the following conclusions can be drawn? Select the correct answer using the code given below:

1. At least four were selected for the job.
2. S was selected for the job.

(a) 1 only

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

Q48. Let P, Q, R, S and T be five statements such that: I. If P is true, then both Q and S are true. II. If R and S are true, then T is false. Which of the following can be concluded? Select the correct answer using the code given below:

1. If T is true, then at least one of P and R must be false.
2. If Q is true, then P is true.

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

Q49. A cuboid of dimensions 7cm × 5cm × 3cm is painted red, green and blue colour on each pair of opposite faces of dimensions 7cm × 5cm × 5cm, 5cm × 3cm, 7cm × 3cm respectively. Then the cuboid is cut and separated into various cubes each of side length 1cm. Which of the following statements is/are correct? Select the correct answer using the code given below:

1. There are exactly 15 small cubes with no paint on any face.
2. There are exactly 6 small cubes with exactly two faces, one painted with blue and the other with green.

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

Q50. The letters of the word "INCOMPREHENSIBILITIES" are arranged alphabetically in reverse order. How many positions of the letter/letters will remain unchanged?

(a) None
(b) One
(c) Two
(d) Three

Passage: *The paradox of choice is illustrated by the story of Buridan's ass. Jean Buridan, the 14th century philosopher, wrote about free will and the inability to choose due to numerous choices and uncertainties. In the story, a donkey stands between two equally appealing stacks of hay. Unable to decide which to eat, it starves to death. Changes in technology and innovations such as smart phones and tablets only exacerbate our glut of choices. Constant connectivity and overconsumption of real-time data and social media can leave little room for self-reflection and rest, making decisions more difficult. Life is about choices. Many people are overwhelmed with attractive life choices, yet find themselves unhappy and anxious.*

Q51. Which one of the following statements best reflects the most logical message implied by the above passage?

(a) Modern technology enfeebles societal structure and makes life difficult.
(b) Modern life is full of uncertainties and endless difficult choices.
(c) We are influenced by the opinion of others and have no courage to follow our own convictions.
(d) In our lives, having too few choices may not be a good thing, but having too many can be equally as difficult.

Passage: *Household finance in India is unique. We have a tendency to invest heavily in physical assets such as gold and property. Steps to encourage the financialization of savings are critical. A populace accustomed to traditional processes will not simply jump into financialization. Hurdles to change include onerous bureaucracy, a scepticism of organized financial institutions, a lack of basic information about which of the myriad services and providers is best for each family, and how (and even if) one can make the transition between them if necessary.*

Q52. Regarding the financialization of household savings, which of the following statements best reflect the solutions that are implied by the passage? Select the correct answer using the code given below:

1. A flexible environment is needed to develop solutions.
2. Households need customized solutions.
3. Innovations in financial technology are required. 39 ©Vision IAS

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

Passage: *Pharmaceutical patents grant protection to the patentee for the duration of the patent term. The patentees enjoy the liberty to determine the price of medicines, which is time-limited to the period of monopoly, but could be unaffordable to the public. Such patent protection offered to the patentees is believed to benefit the public over the longer term through innovations and research and development (R&D), although it comes at a cost, in the nature of higher prices for patented medicine. The patent—provide the patentee with a legitimate mechanism to get returns on the costs incurred in innovation and research.*

Q53. Based on the above passage, the following assumptions have been made: Which of the above assumptions are valid?

1. Patent protection given to patentees puts a huge burden on public's purchasing power in accessing patented medicines.
2. Dependence on other countries for pharmaceutical products is a huge burden for developing and poor countries.
3. Providing medicines to the public at affordable prices is a key goal during the public health policy design in many countries.
4. Governments need to find and appropriate balance between the rights of patentees and the requirements of the patients.

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

Passage: *India should ensure the growth of the digital economy while keeping personal data of citizens secure and protected. No one will innovate in a surveillance-oriented environment or in a place where an individual's personal information is compromised. The ultimate control of data must reside with the individuals who generate it; they should be enabled to use, restrict or monetize it as they wish. Therefore, data protection laws should enable the right kind of innovation–one that is user-centric and privacy protecting.*

Q54. Based on the above passage, the following assumptions have been made: Which of the above assumptions is/are valid?

1. Protection of privacy is not just a right, but it has value to the economy.
2. There is a fundamental link between privacy and innovation.

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

Q55. In an examination, the maximum marks for each of the four papers namely P, Q, R and S are 100. Marks scored by the students are in integers. A student can score 99% in n different ways. What is the value of n?

(a) 16
(b) 17
(c) 23
(d) 35

Q56. A flag has to be designed with 4 horizontal strips using some or all of the colours red, green and yellow. What is the number of different ways in which this can be done so that no two adjacent stripes have the same colour?

(a) 12
(b) 18
(c) 24
(d) 36

Q57. A rectangular floor measures 4 m in length and 2.2m in breadth. Tiles of size 140 cm by 60 cm have to be laid such that the tiles do not overlap. A tile can be placed in any orientation so long as its edges are parallel to the edges of the floor. What is the maximum number of tiles that can be accommodated on the floor?

(a) 6

(b) 7
(c) 8
(d) 9

Q58. There are five persons, P, Q, R, S and T each one of whom has to be assigned one task. Neither P nor Q can be assigned Task-1. Task-2 must be assigned to either R or S. In how many ways can the assignment be done?

(a) 6
(b) 12
(c) 18
(d) 24

Q59. There are large number of silver coins weighing 2gm, 5gm, 10gm, 25gm, 50gm each. Consider the following statements: Which of the statements given above is/are correct?

1. To buy 78 gm of coins one must buy at least 7 coins.
2. To weigh 78 gm using these coins one can use less than 7 coins.

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

Q60. Consider the following:

I. A + B means A is neither smaller nor equal to B.
II. A – B means A is not greater than B. III A × B means A is not smaller than B.
IV. A ÷ B means A is neither greater nor equal to B.
V. A ± B means A is neither smaller nor greater than B. Statement: P × Q, P – T, T ÷ R, R ± S Conclusion-1: Q±T Conclusion-2: S+Q Which one of the following is correct in respect of the above Statement and the Conclusions?

(a) Only Conclusion-1 follows from the Statement.
(b) Only Conclusion-2 follows from the Statement.
(c) Both Conclusion-1 and Conclusion-2 follow from the Statement.
(d) Neither Conclusion-1 nor Conclusion-2 follows from the Statement.

Passage: *Sourcing food from non-agricultural lands (uncultivated systems such as forests, wetlands, pastures, etc) in addition to agricultural lands enables a systemic approach to food consumption. It allows rural and tribal communities to sustain themselves for the whole year and steer clear of natural disasters and season-inducted shortfalls of agricultural food. Since the productivity of trees is often more resilient to adverse weather conditions than annual crops, forest foods often provide a safety net during periods of food shortages caused by crop failure; forest foods also make important contributions during seasonal crop production gaps. 46 ©Vision IAS*

Q61. Which one of the following statements best reflects the most logical and rational massage conveyed by the author of the passage?

(a) Food yielding trees should replace other trees in rural and tribal areas and community owned lands.
(b) Food security cannot be ensured in India with the present practice of conventional agriculture.
(c) Wastelands and degraded areas in India should be converted into agroforestry systems to help the poor.
(d) Agroecosystems should be developed in addition to or along with conventional agriculture.

Passage: *While awareness on use/misuse and abuse of antibiotics is common knowledge, as is the impact of dosing poultry with antibiotics, the environmental impact of antibiotics-manufacturing companies not treating their waste has scarcely been discussed at any length or seriousness thus far. Pollution from antibiotics factories is fuelling the rise of drug-resistant infections. The occurrence of drug-resistant bacteria surrounding the pharma manufacturing plants is well known.*

Q62. Which one of the following statements best reflects the most logical and practical message conveyed by the passage?

(a) It is necessary to put proper effluent treatment protocols in place.
(b) It is necessary to promote environmental awareness among people.
(c) Spread of drug-resistant bacteria cannot be done away with, as it is inherent in modern medical care.
(d) Pharma-manufacturing companies should be set up in remote rural areas, away from crowded towns and cities.

Passage: *Benefits of good quality school education accrue only when students complete and leave school after having acquired the gateway skills. Like one learns to walk before running, similarly one picks up advanced skills only after picking*

the basic foundational skills. The advent of the knowledge economy poses new challenges, and one of the severe consequences of having an uneducated workforce will be our inability to keep pace with the global economy. Without a strong learning foundation at the primary level, there can be no improvement in higher education or skill development.

Q63. Which one of the following statements best reflects the crux of the passage?

(a) To become a global power, India needs to invest in universal quality education.
(b) India is unable to become a global power because it is not focusing or promoting knowledge economy.
(c) Our education system should focus more on imparting skills during higher education.
(d) Parents of many school children are illiterate and are unaware of the benefits of quality education.

Q64. 40 children are standing in a circle and one of them (say child-1) has a ring. The ring is passed clockwise. Child-1passes on the child-2, child-2 passes on to child-4, child-4 passes on to child- 7 and so on. After how many such changes (including child-1) will the ring be in the hands of child-1 again?

(a) 14
(b) 15
(c) 16
(d) 17

Q65. What is the middle terms of the sequence Z, Z, Y, Y, Y, X, X, X, X, W, W, W, W, W,……,A?

(a) H
(b) I
(c) J
(d) M

Q66. Questions: Is p greater than q? Statement-1: p × q is greater than zero. Statement-2: p2 is greater than q2. Which one of the following is correct in respect of the above Question and the Statements?

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

Q67. Questions: Is (p + q- r) greater than (p – q + r), where p, q and r are integers? Statement-1: (p - q) is positive. Statement-2: (p-r) is negative. Which one of the following is correct in respect of the above Question and the Statements?

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

Q68. In a party, 75 persons took tea, 60 persons took coffee and 15 persons took both tea and coffee. No one taking milk takes tea. Each person takes at least one drink. Question: how many persons attended the party? Statement-1: 50 persons took milk. Statement-2: Number of persons who attended the party is five times the number of persons who took milk only. Which one of the following is correct in respect of the above Question and the Statements?

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

Q69. Consider a 3-digit number. Question: What is the number? Statement-1: The sum of the digits of the number is equal to the product of the digits. Statement-2: The number is divisible by the sum of the digits of the

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

(a) The Question can be answered by using one of the Statements alone, but cannot be answered using the other Statement alone.

(b) The Question can be answered by using either Statement alone.

(c) The Question can be answered by using both the Statements together, but cannot be answered using either Statement alone.

(d) The Question cannot be answered even by using both the Statements together.

Q70. For five children with ages a < b < c < d < e; any two successive ages differs by 2 years. Question: What is the age of the youngest child? Statement-1: The age of the eldest is 3 times the youngest. Statement-2: The average age of the children is 8 years Which one of the following is correct in respect of the above Question and the Statements?

(a) The Question can be answered by using one of the Statement alone.

(b) The Question can be answered by using either Statement alone.

(c) The Question can be answered by using both the Statement together, but cannot be answered using either Statement alone.

(d) The Question cannot be answered even by using both the Statements together.

Passage: *Scientist studied the vernal window – transition period from winter to the growing season. They found that warmer winters with less snow resulted in a longer lag time between spring events and a more protracted vernal window. This change in the spring timetable has ecological, social and economic consequences – for agriculture, fisheries and tourism. As the ice melts earlier, the birds don't return, causing a delay, or lengthening in springtime ecological events.*

Q71. With reference to the above passage, the following assumptions have been made: Which of the above assumptions is/are correct?

1. Global warming is causing spring to come early and for longer durations.
2. Early spring and longer period of spring is not good for bird populations.

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

Passage: *A global analysis of nitrogen use efficiency–measure of the amount of nitrogen a plant takes in to grow versus what is left behind as pollution–says that using too much fertilizers will lead to increased pollution of waterways and the air. Currently, the global average for nitrogen use efficiency is approximately 0.4, meaning 40 per cent of the total nitrogen added to cropland goes into the harvested crop while 60 per cent is lost to the environment, says a study. More than half of the world's population is nourished by food grown with fertilizers containing synthetic nitrogen, which is needed to produce high crop yields. Plants take the nitrogen they need to grow, and the excess is left in the ground, water and air. This results in significant emissions of nitrous oxide, a potent greenhouse and ozone depleting gas, and other forms of nitrogen pollution, including eutrophication of lakes and rivers and contamination of river water.*

Q72. Which one of the following statements best reflects the most logical, rational and crucial message implied by the passage?

(a) An enhanced efficiency of use of nitrogen is imperative for both food production and environment.

(b) Production of synthetic nitrogen fertilizers cannot be stopped as it will adversely affect global food security.

(c) Alternatives to crops that require excess of nitrogen should be identified and cultivated.

(d) Conventional agriculture using synthetic fertilizers should be replaced with agroforestry, agroecosystems and organic farming.

Passage: *Along with sustainable lifestyles, climate justice is regarded as a significant principle in environmental parlance. Both the principles have bearings on political and economic choices of the nation. So far, in our climate change summits or compacts, both the principles have eluded consensus among nations. Justice, in the judicial sense, is well defined. However, in the context of climate change, it has scientific as well as socio-political connotations. The crucial question in the next few years will be how resources, technologies and regulations are used to support the victims of climate change. Justice in climate is not confined to actions relating to mitigation, but includes the wider notion of support for adaptation to climate change and compensation for loss and damage. 57 ©Vision IAS*

Q73. Which one of the following statements best reflects the most logical, rational and crucial message conveyed by the passage?

(a) Climate justice should be ingrained in detail in the rules of all the new climate compacts/agreements.

(b) Environmental resources are unevenly distributed and exploited across the globe.
(c) There is an impending issue of dealing with a huge number of climate change victims/climate refugees.
(d) Climate changes in all its connotations is mostly due to developed countries and therefore their share of burden should be more.

Q74. A principal P becomes Q in 1 year when compounded half-yearly with R% annual rate of interest. If the same principal P becomes Q in 1 year when compounded annually with S% annual rate of interest, then which one of the following is correct?

(a) R = S
(b) R > S
(c) R < S
(d) R ≤ S

Q75. How many natural numbers are there which given a remainder of 31 when 1186 is divided by these natural numbers?

(a) 6
(b) 7
(c) 8
(d) 9

Q76. Let pp, qq and rr be 2 digit numbers where p < q < r. If pp + qq + rr =tt0, where tt0 is a 3-digit number ending with zero, consider the following statements: Which of the above statements is/are correct?

1. The number of possible values of p is
5.
2. The number of possible values of q is 6

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

Q77. What is the sum of all 4-digit numbers less than 2000 formed by the digits 1, 2, 3 and 4, where none of the digits is repeated?

(a) 7998
(b) 8028
(c) 8878
(d) 9238

Q78. What is the number of selections of 10 consecutive things out of 12 things in a circle taken in the clockwise direction?

(a) 3
(b) 11
(c) 12
(d) 66

Q79. If today is Sunday, then which day is it exactly on 1010th day?

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

Q80. There are three traffic signals. Each signal changes colour from green to red and then from red to green. The first signal takes 25 seconds, the second signal takes 39 seconds and the third signal takes 60 seconds to change the colour from green to red. The durations for green and red colours are same. At 2:00 p.m, they together turn green. At what time will they change to green next, simultaneously?

(a) 4:00 p.m.
(b) 4:10 p.m.

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(c) 4:20 p.m.
(d) 4:30 p.m.

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Verified Answer Key — UPSC CSE Prelims 2023 — CSAT (GS Paper 2)

For full step-by-step explanations and topic-wise tests, visit **preplord.com/upsc-pyq/csat/2023** or join **t.me/UPSC_PREVIOUS_YEAR_TOPICWISE_PYQ**.

Q1: (D)	**Q17: (A)**	**Q33: (C)**	**Q49: (A)**	**Q65: (B)**
Q2: (C)	**Q18: (C)**	**Q34: (D)**	**Q50: (C)**	**Q66: (D)**
Q3: (B)	**Q19: (B)**	**Q35: (B)**	**Q51: (D)**	**Q67: (C)**
Q4: (C)	**Q20: (C)**	**Q36: (B)**	**Q52: (A)**	**Q68: (A)**
Q5: (B)	**Q21: (C)**	**Q37: (A)**	**Q53: (B)**	**Q69: (D)**
Q6: (C)	**Q22: (A)**	**Q38: (A)**	**Q54: (C)**	**Q70: (B)**
Q7: (D)	**Q23: (B)**	**Q39: (D)**	**Q55: (D)**	**Q71: (A)**
Q8: (D)	**Q24: (A)**	**Q40: (C)**	**Q56: (C)**	**Q72: (A)**
Q9: (C)	**Q25: (D)**	**Q41: (B)**	**Q57: (C)**	**Q73: (A)**
Q10: (D)	**Q26: (A)**	**Q42: (B)**	**Q58: (D)**	**Q74: (C)**
Q11: (B)	**Q27: (D)**	**Q43: (D)**	**Q59: (C)**	**Q75: (D)**
Q12: (B)	**Q28: (A)**	**Q44: (D)**	**Q60: (B)**	**Q76: (C)**
Q13: (B)	**Q29: (C)**	**Q45: (D)**	**Q61: (D)**	**Q77: (A)**
Q14: (A)	**Q30: (A)**	**Q46: (A)**	**Q62: (A)**	**Q78: (C)**
Q15: (C)	**Q31: (A)**	**Q47: (D)**	**Q63: (A)**	**Q79: (B)**
Q16: (B)	**Q32: (D)**	**Q48: (A)**	**Q64: (B)**	**Q80: (B)**

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