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TEST BOOKLET
GENERAL STUDIES
PAPER - II

Test Time Allowed : (02:00PM to 04:00PM) 2 Hours

Maximum Marks : 200

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST 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. **Please note that it is the candidate's responsibility to encode and fill in the Roll Number and Test Booklet Series A, B, C or D carefully and without any omission or discrepancy at the appropriate places in the OMR Answer Sheet. Any omission/ discrepancy will render the Answer Sheet liable for rejection.**
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 the best. 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 directions in the Answer Sheet.
6. **All** items carry equal marks.
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 Sheet as per instructions sent to you with your Admission Certificate.
8. After you have completed filling in all your responses on the Answer Sheet and the examination has concluded, you should hand over to the Invigilator only the Answer Sheet. You are permitted to take this Test Booklet with you.
9. Sheets for rough work are appended in the Test Booklet at the end.
10. **Penalty for wrong answers :**
THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY A CANDIDATE IN ALL THE QUESTIONS.
 - (i) There are four alternatives for the answer to every question. For each question for which a wrong answer is given by the candidate, one-third of the marks assigned to that question will be deducted as penalty.
 - (ii) If a candidate gives more than one answer, it will be treated as a wrong answer even if one of the given answers happens to be correct and there will be same penalty as above to that question.
 - (iii) If a question is left blank, i.e., no answer is given by the candidate, there will be no penalty for that question.

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Directions for the following 10 (ten) items:
Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only

Passage:1

The Parliamentary Standing Committee on Personnel, Public Grievances, Law, and Justice recently submitted a significant report on legal education, making several path-breaking recommendations to strengthen the quality of legal education in India. Since Independence, legal education, unlike medicine and engineering, has not been a top priority for India's policymakers. Things started to change for the better in the 1990s with the advent of the national law universities (NLUs) in India. Buoyed by the winds of liberalisation and globalisation, the Indian economy in the 1990s threw up many new opportunities for lawyers, which, in turn, led to bright young students opting to study law right after school. Several NLU graduates got placed in high-paying law firm jobs while many others went abroad to study at top universities, with quite a few bagging prestigious scholarships such as Rhodes and Chevening.

1. What role did prestigious scholarships such as Rhodes and Chevening play in the positive transformation of legal education in India, as discussed in the paragraph?

1. They were the primary catalysts for the establishment of national law universities (NLUs).
2. They incentivized policymakers to prioritize legal education.

3. They contributed to the migration of Indian law graduates to high-paying law firm jobs.

4. They provided opportunities for NLU graduates to study at top foreign universities.

Select the correct answer using the code given below:

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

2. How did the establishment of high-paying law firm jobs for graduates contribute to the positive transformation of legal education in India during the 1990s, according to the information provided?

1. It prompted the inception of national law universities (NLUs).
2. It discouraged students from pursuing law as a career.
3. It played a role in attracting bright young students to study law.
4. It led to a decline in the quality of legal education.

Select the correct answer using the code given below:

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

Passage:2

The concept of meritocracy, wherein individuals are rewarded and advance based on their abilities, achievements and hard work, rather than their social status or background, has been extensively debated. Proponents and critics of meritocracy offer compelling arguments about its impacts on society, highlighting its virtues and shortcomings. The evolution of meritocracy has witnessed significant transformations, influenced by the critiques and analyses of thinkers such as Michael Young, Michael Sandel, and Adrian Wooldridge. Young, a British sociologist, foresaw a dystopian meritocratic world in his satirical book, *The Rise of the Meritocracy* (1958). He envisioned a future, specifically 2034, as a society where social class and mobility were determined solely by intelligence and effort, as measured through standardised testing and educational achievement. It was a critique of the then-emerging trend towards a merit-based system, which he feared would lead to a new form of social stratification.

3. According to Michael Young's vision in "The Rise of the Meritocracy" (1958), how does the concept of meritocracy, as he critiques it, impact the future social structure, especially concerning social class and mobility?

1. It envisions a future where social class and mobility are determined by a combination of intelligence, effort, and social background.
2. It anticipates a society where standardized testing and educational

achievement become obsolete, leading to a more equitable distribution of resources.

3. It foresees a dystopian future where social class and mobility are solely determined by intelligence and effort, measured through standardized testing and educational achievement.
4. It suggests a utopian society where social class is eradicated, and individuals are rewarded based on their collective contributions to the community.

Select the correct answer using the code given below:

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

Passage:3

Deforestation in India constitutes the pervasive obliteration of significant forested areas within the nation, primarily fueled by environmental degradation propagated by stakeholders like farmers, ranchers, loggers, and plantation corporations. Over the past three decades, India has borne witness to a disconcerting surge in deforestation, notably intensifying between 2015 and 2020. Within this timeframe, the country secured the disquieting second position globally, trailing solely behind Brazil, with an average annual deforestation rate of 668,400 hectares. This extensive deforestation has left an indelible mark on the existence of wildlife and avian species, further impacting the country's water resources and climate. Cattle rearing, oilseed

cultivation, and logging are unequivocally identified as the foremost contributors to this environmental upheaval.

4. Considering the intricate interplay of factors contributing to deforestation in India, what comprehensive strategies could be implemented to address the multifaceted challenges posed to biodiversity and sustainability?

- (a) Implementing stringent regulations on stakeholders, augmenting afforestation initiatives, and fostering sustainable agricultural practices
- (b) Encouraging increased cattle rearing, expanding oilseed cultivation, and intensifying logging activities for economic growth
- (c) Promoting unregulated industrial expansion, minimizing conservation efforts, and emphasizing economic development over ecological concerns
- (d) Relying solely on international collaborations for environmental conservation, disregarding local community engagement and awareness initiatives

Passage:4

Artificial Intelligence (AI), the cognitive prowess exhibited by machines, holds the transformative potential to revolutionize diverse sectors of the Indian economy, spanning agriculture, healthcare, education, manufacturing, and services. Its capacity for reasoned decision-making

and creative prowess positions AI as an instrumental force in propelling India toward inclusive growth, social equity, and sustainable development. The salutary effects of AI manifest in heightened productivity and efficiency across industries, thereby catalyzing economic expansion and augmenting employment prospects. Furthermore, AI's adeptness facilitates the delivery of personalized and tailored solutions in public services, from education to healthcare and governance, thereby elevating their quality and accessibility. In addressing India's formidable challenges such as poverty, malnutrition, climate change, and security, AI emerges as a pioneering force, proffering innovative and scalable solutions with potential mass impact.

5. Examine the nuanced merits of Artificial Cognitive Advancement (ACA) in shaping India's economic fabric:

- 1. ACA's profound metamorphic influence on diverse sectors.
- 2. ACA's intricate capacity to surmount exigent challenges – poverty, malnutrition, climatic vicissitudes, and security intricacies.
- 3. ACA's pivotal contribution to galvanizing a milieu of innovation and instigating entrepreneurial vitality

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

Passage:5

The Save Tigers movement in India, inaugurated in 1973 through Project Tiger, embodies a collaborative endeavor to safeguard the endangered Bengal tiger and its habitats. This governmental initiative established tiger reserves, aiming to curb human-induced threats like poaching and habitat loss while restoring ecological balance. The project integrated rigorous monitoring, research on tiger ecology, and community awareness programs. Evolving over the years, the movement now encompasses various stakeholders—wildlife NGOs, media, corporate entities, celebrities, and citizens—forming a collective front against the imminent decline of these majestic felines.

6. The Save Tigers movement in India, originating from Project Tiger in 1973, revolves around preserving Bengal tigers and habitats. Which statement best summarizes the passage?

- (a) Save Tigers centers on establishing reserves, countering poaching and habitat loss.
- (b) Project Tiger focuses on tiger research, sidelining awareness efforts.
- (c) Save Tigers involves diverse stakeholders, combatting various threats.
- (d) The movement prioritizes celebrity engagement, neglecting monitoring

Passage:6

India hosts an impressive array of approximately 1210 avian species, contributing significantly to 14 percent of the global avian diversity. Regrettably, numerous avifauna confront existential threats precipitated by habitat depletion, relentless hunting, illicit poaching, and contemporary challenges such as encroaching wind farms, power lines, deleterious pesticides, and the ominous impact of climate change. The IUCN Red List starkly designates 168 Indian birds as either Threatened or Near Threatened, signifying a perilous state of affairs. To safeguard this diverse avian tapestry, India has implemented conservation measures encompassing protected areas, identification of Important Bird and Biodiversity Areas (IBAs), and the proscription of bird hunting and trade. Nevertheless, a more concerted effort is imperative to combat existing and emergent threats and secure the avian inhabitants within human-altered landscapes and waterscapes.

7. Based on the provided passage regarding India's avian diversity and conservation efforts, assess the validity of the following assumptions:

- 1. Implementing measures like declaring protected areas, identifying Important Bird and Biodiversity Areas (IBAs), and banning bird hunting universally ensures effective avian species conservation.
- 2. The myriad threats faced by Indian avifauna, spanning habitat

depletion, hunting, poaching, wind farms, power lines, pesticides, and climate change, accurately depict the perilous challenges they confront.

3. The IUCN Red List serves as an infallible barometer, precisely reflecting the authentic conservation status of Indian birds without discrepancies.

4. Despite commendable conservation actions, there remains an insufficiency in addressing the multitude of threats faced by Indian avian inhabitants in human-altered landscapes and waterscapes.

Which assumptions are valid?

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

Passage:7

Moon landings are picking up pace for the second time in history, but now with more countries and novel definitions of success in the mix. Chandrayaan-3's soft-landing conformed that the Indian Space Research Organisation's (ISRO) understanding of the technologies and processes involved and the choices it made as an impressive space research and flight provider emerging from colonial shadows are correct. Similarly, the failure of the Luna 25 mission would have taught Russia's Roscosmos something about what it got wrong, particularly as a space agency whose reputation is on the wane after spectacular highs. On February 22, U.S.-based Intuitive Machines (IM) became the first private company to soft-

land a robotic craft on the moon. The success of many space service providers in the U.S. is rooted in crucial support from NASA in their formative years. This is true in IM's case as well, but with important distinctions.

8. According to the passage, how does the success of Intuitive Machines (IM) differ from other space service providers in the U.S. in terms of landing a robotic craft on the moon?

- 1. IM achieved success without NASA's support.
- 2. IM's success is rooted in its formative years.
- 3. IM's success surpasses that of other U.S. providers.

Select the correct answer using the code given below:

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

9. In the context of the moon landings mentioned in the passage, what potential lessons could Russia's Roscosmos learn from the failure of the Luna 25 mission, and how might it impact their reputation?

- 1. Luna 25's failure signals Roscosmos' decline after highs.
- 2. Luna 25's failure implies a temporary setback for Roscosmos.
- 3. Luna 25's failure is inconsequential to Roscosmos' reputation.

Select the correct answer using the code given below:

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

Passage: 8

In the multifaceted tapestry of India's biodiversity, ichthyic entities assume a paramount role, fostering ecological equilibrium and socioeconomic sustenance. The piscine plethora within Indian waters encompasses a pantheon of species, each wielding intrinsic importance. Indigenous ichthyofauna not only serves as a linchpin in trophic cascades, influencing ecosystem stability, but also augments the piscatorial bounty supporting myriad livelihoods. The piscine milieu, comprising variegated species such as Rohu, Catla, and Hilsa, intricately interlaces with cultural and gastronomic paradigms. Moreover, piscatorial biodiversity safeguards against piscivorous imbalances, thus substantiating the imperativeness of strategic conservation measures to fortify the piscine wealth indispensable for India's ecological resilience and societal sustenance.

10. What is the significance of indigenous ichthyofauna in the context of India's biodiversity, as elucidated in the paragraph?

- (a) It serves as a linchpin in trophic cascades, influencing ecosystem stability.
- (b) It primarily contributes to gastronomic paradigms, neglecting cultural influences.
- (c) It supports economic sustenance through the proliferation of piscatorial bounty.
- (d) It accentuates the importance of strategic conservation measures for piscine wealth.

11. The greatest number that will divide 64, 80 and 111 leaving remainders 4, 5 and 6 respectively is

- (a) 12
- (b) 13
- (c) 14
- (d) 15

12. The Product of two numbers is 5712 and their LCM and HCF are 1428 and 4 respectively. If one of the numbers are 84, then find the other number?

- (a) 72
- (b) 69
- (c) 68
- (d) 70

13. HCF and LCM of 55, 75 and 'x' are 5 and 5775 respectively. The least value of 'x' is

- (a) 39
- (b) 37
- (c) 35
- (d) 34

14. An electronic device makes a beep after every 30 seconds another device makes a beep after 72 seconds. They beeped together at 8 am. When they will make a next beep together at the earliest?

- (a) 8.06 am
- (b) 8.05 am
- (c) 8.09 am
- (d) 8.10 am

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15. What is the least number which when divided by 12, 18, 24 and 30 leaves the same remainder 5 in each case.
- (a) 722
(b) 730
(c) 825
(d) 725
16. Three numbers are in the ratio 6: 8: 10 and their LCM is 1200. Their HCF is
- (a) 40
(b) 80
(c) 10
(d) 200
17. The Product of two numbers is 16,428 and their H.C.F is 74. The larger number is
- (a) 185
(b) 222
(c) 107
(d) 101
18. The greatest number less than 10, 000 which is exactly divisible by 48, 60, 65 is
- (a) 9000
(b) 9600
(c) 4800
(d) 9650
19. Find the LCM of $3(a-1)$, $2(a-1)^2$, (a^2-1)
- (a) $(a+1)^2(a+1)$
(b) $(a-1)^2(a+1)$
(c) $6(a-1)(a+1)^2$
(d) $6(a-1)^2(a+1)$
20. Find the LCM $35a^2c^3b$, $42a^3cb^2$, $30acb^2$
- (a) $215a^3c^3b^3$
(b) $210a^3c^3b^3$
(c) $210a^2c^3b$
(d) $315a^3cb^2$
21. Find the LCM $(a-1)^5(a+3)^2$, $(a-2)^2(a-1)^3(a+3)^4$
- (a) $(a-1)^3(a-3)^4(a-2)^2$
(b) $(a+1)^3(a+2)^4(a+2)^2$
(c) $(a-1)^5(a+3)^4(a-2)^2$
(d) $(a-1)^5(a-3)^2(a+3)^4$
22. The HCF and LCM of two numbers m and n are 6 and 210 respectively. If $m+n=72$ then $1/m+1/n$ is equal to
- (a) $1/35$
(b) $2/35$
(c) $3/35$
(d) $5/37$
23. If m and n are two numbers, then their LCM is _____ (Let $HCF(m, n) = HCF$).
- (a) mn/HCF
(b) mn/LCM
(c) $m+n/HCF$
(d) $m-n/HCF$
24. In a Burj Khalifa consisting of 216 floors, two lifts A & B starting from the ground floor, stop at every 6th and 10th floors respectively. On which floors, will both of them stop together?
- (a) 30, 45, 50, 65, 70, 80, 85
(b) 30, 60, 90, 120, 150, 180, 210
(c) 15, 30, 45, 60, 75, 90, 105
(d) 15, 30, 45, 60, 72, 80, 85

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25. The sum of two numbers is 45. Their difference is $\frac{1}{9}$ of their sum. Their L.C.M is
- (a) 100
(b) 150
(c) 200
(d) 250
26. The HCF of 20 successive even numbers is.....
- (a) 3
(b) 2
(c) 4
(d) 1
27. L.C.M of $\frac{16}{24}$ and $\frac{40}{72}$ is
- (a) $\frac{80}{24}$
(b) $\frac{40}{12}$
(c) $\frac{20}{6}$
(d) $\frac{10}{3}$
28. In a school 782 boys and 646 girls have been divided into the largest possible equal classes. So that there are equal number of boys and girls in each class. What is the number of classes?
- (a) 23 girls classes, 19 boys classes
(b) 34 boys classes, 34 girls classes
(c) 23 boys classes, 19 girls classes
(d) 23 boys classes, 17 girls classes
29. A merchant has three different types of milk: 870 liters, 986 liters and 1102 liters. Find the least number of casks of equal size required to store all the milk without mixing.
- (a) 51
(b) 47
(c) 45
(d) 61
30. The HCF of two numbers is 18. Which one of the following can never be their LCM?
- (a) 36
(b) 108
(c) 198
(d) 380
31. About the number of pairs which have 16 as their HCF and 136 as their LCM, we can definitely say that
- (a) No such pairs exist
(b) Only one such pair exists
(c) Only two such pair exists
(d) Many such pair exist
32. Find the smallest number by which 10985 should be divided so that the quotient is a perfect cube
- (a) 5
(b) 9
(c) 15
(d) 25
33. A room has its length, breath and height as 1650cm, 1350cm and 900cm respectively. Find the maximum length to measure all these measurements?
- (a) 160cm
(b) 150cm
(c) 150cm
(d) 140cm
34. If Z is a prime number. What is the LCM of Z and Z+1?
- (a) Z^2+Z
(b) $Z(Z+1)/2$
(c) $(Z+1)^2$
(d) $Z(Z+1)$

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35. What is the maximum length of scale which is placed in $10\text{m} \times 10\text{m} \times 5\text{m}$ room?
- (a) 15.00 m
(b) 13.75 m
(c) 14.35 m
(d) 12.55 m
36. Three planets revolve round the Sun once in 200, 250 and 300 days, respectively in their own orbits. When do they all come relatively to the same position as at a certain point of time in their orbits?
- (a) After 3000 days
(b) After 2000 days
(c) After 1500 days
(d) After 1200 days
37. The maximum number of students among whom 3003 pens and 2730 pencils can be distributed in such a way that each student gets same number of pens and same number of pencils, is :
- (a) 273
(b) 910
(c) 300
(d) 293
38. The greatest number that divides 411, 684, 821 and leaves 3, 4 and 5 as remainders, respectively, is
- (a) 254
(b) 146
(c) 136
(d) 204
39. Find the greatest number which will exactly divide 200 and 320.
- (a) 10
(b) 20
(c) 16
(d) 40
40. What is the least number of square tiles required to pave the floor of a room 15 m 17 cm long and 9m 2cm broad?
- (a) 840
(b) 841
(c) 820
(d) 814
41. The LCM and the HCF of the numbers 28 and 42 are in the ratio:
- (a) 6 : 1
(b) 2 : 3
(c) 3 : 2
(d) 7 : 2
42. Two numbers are in the ratio 3:4. Their L.C.M. is 84. The greater number is
- (a) 21
(b) 24
(c) 28
(d) 84
43. The ratio of two numbers is 4: 5 and their H.C.F. is 8. Then their L.C.M. is
- (a) 130
(b) 140
(c) 150
(d) 160

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44. The number between 4000 and 5000 that is divisible by each of 12, 18, 21 and 32 is

- (a) 4023
- (b) 4032
- (c) 4302
- (d) 4203

45. The LCM of two multiples of 12 is 1056. If one of the number is 132, the other number is

- (a) 12
- (b) 72
- (c) 96
- (d) 132

46. The smallest square number divisible by 10, 16 and 24 is

- (a) 900
- (b) 1600
- (c) 2500
- (d) 3600

47. What is the smallest number which leaves remainder 3 when divided by any of the numbers 5, 6 or 8 but leaves no remainder when it is divided by 9?

- (a) 123
- (b) 603
- (c) 723
- (d) 363

48. The least multiple of 7, which leaves the remainder 4, when divided by any of 6, 9, 15 and 18, is

- (a) 76
- (b) 94
- (c) 184
- (d) 364

49. Some equations are solved on the basis of certain system. Find the correct answer for the unsolved equation on that basis.

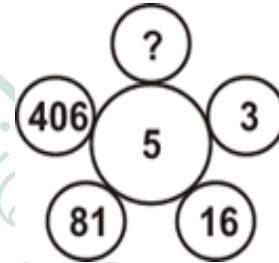
$$5 \times 4 \times 3 = 70,$$

$$6 \times 5 \times 4 = 140$$

$$7 \times 6 \times 5 = ?$$

- (a) 210
- (b) 220
- (c) 230
- (d) 240

50. Find the missing character in each of the following questions.



- (a) 201
- (b) 731
- (c) 1625
- (d) 2031

51. In each of the following questions, a matrix of certain characters is given. These characters follow a certain trend, row wise or column wise. Find out this trend and choose the missing character accordingly.

3	6	8
5	8	4
4	7	?

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

52. In each of the following questions, a matrix of certain characters is given. These characters follow a certain trend, row wise or column wise. Find out this trend and choose the missing character accordingly.

963	2	844
464	?	903

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

53. Three sets of English, Mathematics and Science books containing 336, 240, 96 books respectively have to be stacked in such a way that all the books are stored subject-wise and the height of each stack is the same. Total number of stacks will be

- (a) 14
- (b) 21
- (c) 22
- (d) 48

54. Find the HCF of $1/2$, $3/4$, $5/6$, $7/8$, $9/10$ and $1/12$

- (a) $1/2$
- (b) $1/10$
- (c) $9/120$
- (d) $1/120$

Directions for the following 5 (five) items: Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only

Passage: 1

The Indian Space Research Organisation (ISRO) is unequivocally dedicated to the harnessing, sustainable progression, and amplification of space technology for comprehensive national development, concurrently engaging in avant-garde space science research and planetary exploration endeavours. Its overarching mission encapsulates the intricate design and sophisticated development of launch vehicles, coupled with associated technologies, facilitating seamless access to the cosmic domain. Simultaneously, ISRO undertakes the intricate design and development of satellites meticulously tailored for earth observation, communication, navigation, meteorology, and cutting-edge space science initiatives. A pivotal facet of ISRO's strategy involves the strategic encouragement and authorization of private entities, empowering them to assume a pivotal role within the expansive global space market. Through these multifaceted initiatives, ISRO endeavours to judiciously exploit space technology to effectively address diverse societal imperatives and thereby significantly contribute to the holistic development of the nation.

55. Given ISRO's commitment to sustainable development, which strategies can be considered in furthering its mission while engaging private entities in the global space market?

1. Initiating stringent regulations to control the environmental impact of private space ventures.
2. Encouraging and authorizing private entities to play a pivotal role in space technology development.
3. Establishing a dedicated task force to monitor the ecological practices of private entities in the space sector.
4. Collaborating with international organizations to bolster ISRO's space exploration initiatives.

Select the correct answer using the code given below:

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

Passage: 2

Geology, as an academic discipline, plays a crucial role in understanding the Earth's composition, structure, and history. It encompasses the study of minerals, rocks, Earth's structure, volcanic phenomena, landforms, and geologic history. Geologists contribute to natural resource exploration, environmental protection, and climate change research. They help locate minerals, oil, and gas, which are vital for industrial development and the economy. Geologists

also aid in understanding the processes that shape the Earth's surface, contributing to environmental protection. Furthermore, their research on climate change helps in predicting future trends. Thus, Geology is a key discipline that contributes significantly to our understanding of the Earth and its processes.

56. In the context of the paragraph highlighting the importance of Geology, which of the following statements accurately reflects the role of geologists in relation to industrial development, economy, and environmental protection?

- (a) Geologists primarily focus on industrial development and contribute minimally to environmental protection.
- (b) Geologists play a key role in locating minerals and oil, but their impact on environmental protection is negligible.
- (c) Geologists contribute significantly to both industrial development and environmental protection, making them integral to sustainable practices.
- (d) Geologists' research on climate change is unrelated to their contributions to natural resource exploration and industrial development.

Passage: 3

Domestic manufacturing of semiconductors is the next big space and many companies are expected to venture into this segment, S. Krishnan, Secretary, Ministry of Electronics & Information Technology said on Wednesday, adding that a \$2 billion digital economy is what India seriously needs. 'Faster pace' Speaking virtually at the India Digital Summit (IDS) 2024, Mr. Krishnan said the digital economy was expected to grow at a faster pace in the next few years. "Semiconductors is the other big space. More companies are likely to come into the space... Our interest in semiconductors is open," he said adding that in the next 5-10 years semi-conductor manufacturing in the country was expected to come up in a big way

57. In the context of the paragraph discussing domestic semiconductor manufacturing and the digital economy, what does Secretary S. Krishnan foresee as a significant development in the next 5-10 years, and how does he emphasize the importance of this development for India's economic growth?

- (a) The growth of the digital economy is expected to slow down in the next few years, according to Mr. Krishnan, due to challenges in domestic semiconductor manufacturing.
- (b) Secretary S. Krishnan envisions a surge in domestic semiconductor manufacturing in the next 5-10 years, anticipating a major contribution to a \$2 billion digital

economy.

- (c) Mr. Krishnan suggests that the digital economy's growth will primarily depend on international companies entering the semiconductor manufacturing sector in India.
- (d) The Secretary of MeitY emphasizes the irrelevance of semiconductor manufacturing to India's digital economy, highlighting other sectors as more critical for growth.

Passage: 4

The cannabis plant (*Cannabis sativa*) has long been of interest to psychiatrists for its perceived effects on mood and cognition. There is currently significant research interest in using cannabis-based compounds to manage and/or treat schizophrenia and cannabis-use and heroin-use disorders. Recently, researchers at the University of British Columbia in Canada floated a new clinical trial to examine whether cannabidiol could be used to treat bipolar depression. Given the paucity of agents to treat depressive episodes in bipolar disorder, this trial has the potential to uncover a novel treatment to treat the debilitating depression associated with the condition. The major psychotomimetic agent in *C. sativa* is a compound called delta-9-tetrahydrocannabinol (THC). There is growing interest in another cannabinoid, cannabidiol (CBD), which may have antipsychotic, anti-inflammatory, and neuroprotective properties. The plant's flowering parts are more potent than its leaves. Marijuana is a combination of buds

and leaves of pollinated female plants, and is usually cultivated outdoors.

58. In the context of the paragraph discussing the potential use of cannabis-based compounds in psychiatric treatment, what specific mental health conditions are currently under research consideration, and what novel treatment does the clinical trial at the University of British Columbia aim to explore?

1. Researchers are primarily focused on using cannabis-based compounds for managing anxiety disorders and opioid addiction.
2. The clinical trial at the University of British Columbia aims to investigate the potential of cannabidiol in treating bipolar depression.
3. The major psychotomimetic agent in Cannabis sativa is cannabidiol, known for its antipsychotic properties.
4. Marijuana cultivation is more effective when the plant's leaves are used rather than its flowering parts.

Select the correct answer using the code given below:

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

59. In the context of the paragraph discussing cannabinoids from the cannabis plant, what are the perceived effects of cannabidiol (CBD), and why is the University of British Columbia's clinical trial particularly significant in

the realm of psychiatric research?

1. CBD is primarily known for its psychotomimetic properties, contributing to mood and cognition enhancement.
2. The clinical trial at the University of British Columbia aims to explore the use of THC in treating bipolar depression.
3. Cannabidiol (CBD) is gaining interest due to its potential antipsychotic, anti-inflammatory, and neuroprotective properties.
4. The flowering parts of the cannabis plant are less potent than its leaves, impacting the efficacy of psychiatric treatments.

Select the correct answer using the code given below:

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

60. In the following question, select the missing number from the given series.

49, 46, 43, 40, ?, 34

- (a) 38
- (b) 37
- (c) 36
- (d) 39

61. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series. I, L, O, R, ?

- (a) S
- (b) T
- (c) U
- (d) V

62. The least number which when divided by 16, 18, 20 and 25 leaves 4 as remainder in each case but when divided by 7 leaves no remainder is

- (a) 17004
- (b) 18000
- (c) 18002
- (d) 18004

63. The least number which when divided by 5, 6, 7 and 8 leaves a remainder 3, but when divided by 9 leaves no remainder is

- (a) 1677
- (b) 1683
- (c) 2523
- (d) 3363

64. Which is the least number of square tiles required to pave the floor of a room 15 m 17 cm long and 9 m 2 cm broad?

- (a) 840
- (b) 841
- (c) 820
- (d) 814

65. 84 Maths books, 90 Physics books and 120 Chemistry books have to be stacked topic wise. How many books will be there in each stack so that each stack will have the same height too?

- (a) 12
- (b) 18
- (c) 6
- (d) 21

66. The LCM of two numbers is 864 and their HCF is 144. If one of the number is 288, the other number is:

- (a) 576
- (b) 1296
- (c) 432
- (d) 144

67. LCM of two numbers is 225 and their HCF is 5. If one number is 25, the other number will be:

- (a) 5
- (b) 45
- (c) 25
- (d) 225

Directions for the following 10 (ten) items:
Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.

Passage:1

The design lexicon of India epitomizes an opulent amalgamation of cultural heterogeneity, historical opulence, and artistic finesse. Traditional motifs, often an ode to nature's splendour, are steeped in profound symbolism, diverging across regions. Rajasthan stands distinguished for its exquisite block printing, while Bihar's Madhubani art showcases intricate geometric opulence. In the realm of textile design, the resplendent Bandhani and Ikat exemplify unparalleled mastery in dyeing and weaving techniques. These patterns, be it in architectural marvels, textile opulence, or ceramic elegance, transcend mere aesthetics, becoming custodians of

India's artistic heritage. Their endurance in shaping contemporary design underscores the enduring allure of India's design tapestry.

68. Which facets of India's design heritage, intricately interwoven with profound symbolic meanings, epitomize regional diversity and bear testimony to the nation's artistic legacy?

1. Block printing in Rajasthan.
2. Madhubani art from Bihar.
3. Bandhani and Ikat textile designs.
4. The enduring impact of design patterns on contemporary design sensibilities.

Select the correct answer using the code given below:

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

Passage: 2

Design patents in India, as per the Patents Act 1970, shield avant-garde and unique designs implemented in articles fabricated through industrial processes. These patents explicitly safeguard the aesthetic facets of objects, divorcing them from functional considerations. For eligibility, a design must exhibit novelty, eschewing any prior publication or utilization globally, and manifest a substantial departure from established designs or their amalgamations. The temporal purview of a design patent spans a formidable 15 years, commencing from the registration date. This juridical framework not only propels ingenuity and inventiveness within the industrial

milieu but also serves as a bulwark against unauthorized utilization of duly registered designs, endowing legal fortification to the progenitors of such innovative creations.

69. In the realm of design patents under the Patents Act 1970 in India, which criteria are imperative for patent eligibility, ensuring the safeguarding of innovative and distinct designs applied to industrially manufactured articles?

1. Novelty, excluding any prior global publication or utilization.
2. Functional considerations, emphasizing the practical utility of the design.
3. Conspicuous deviation from established designs or their amalgamations.

Select the correct answer using the code given below:

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

Passage:3

The three newly-enacted criminal laws, the Bharatiya Nyaya Sanhita (to replace the Indian Penal Code), the Bharatiya Nagarik Suraksha Sanhita (to replace the Code of Criminal Procedure) and the Bharatiya Sakshya Adhinyam (to replace the Indian Evidence Act) are to come into force on July 1, 2024. At the same time, Section 106(2) of the Bharatiya Nyaya Sanhita (BNS), which prescribes 10 years imprisonment for fatal accidents if they are not immediately reported to the police, has been put on hold, as noticed by the Central government. The

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Ministry of Home Affairs (MHA) and State governments are preparing for a smooth transition. While some changes have been made in the Bharatiya Nagarik Suraksha Sanhita (BNSS) in connection with investigation and police functioning, a few new offences and some changes introduced in the BNS, the contents of the Indian Evidence Act, 1872 have changed little as far as the Bharatiya Sakshya Adhiniyam (BSA) is concerned.

70. What role did Section 106(2) of the Bharatiya Nyaya Sanhita (BNS) play in the implementation of the newly-enacted criminal laws, as mentioned in the passage?

1. It delayed the enforcement of the Bharatiya Nyaya Sanhita.
2. It introduced new offences in the Bharatiya Nagarik Suraksha Sanhita.
3. It mandated the immediate reporting of fatal accidents to the police.
4. It remained unchanged in the Bharatiya Sakshya Adhiniyam.

Select the correct answer using the code given below:

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

71. According to the passage, what action has been taken regarding Section 106(2) of the Bharatiya Nyaya Sanhita (BNS)?

1. It has been fully implemented by the Central government.
2. It has been modified by the Ministry of Home Affairs (MHA).

3. It has been put on hold by the Central government.

4. It has been replaced by the Bharatiya Nagarik Suraksha Sanhita.

Select the correct answer using the code given below:

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

Passage:4

On March 1, International Waste Pickers Day, waste pickers across the world will pay homage to fellow pickers who were murdered in Colombia in 1992. The world of the informal waste picker, who is an often-forgotten, hyper-marginalised worker cohort in the waste value chain ecosystem, and an indispensable but invisible part of waste management systems in India — needs to be understood. The International Labour Organization dence the informal sector in waste management as ‘individuals or small and micro-enterprises that intervene in waste management without being registered and without being formally charged with providing waste management services. These workers are the primary collectors of recyclable waste, playing a critical role in waste management and resource efficiency by collecting, sorting, trading and sometimes even reinserting discarded waste back into the economy. Yet, they face systemic marginalisation due to non-recognition, non-representation,

and exclusion from social security schemes and legal protection frameworks.

72. In the context of waste management, how do prestigious scholarships such as Rhodes and Chevening, as discussed in the previous passage pattern, relate to the issues faced by informal waste pickers, as mentioned in the provided passage?

1. They serve as a catalyst for the formalization of waste picker cooperatives.
2. They contribute to the systemic marginalization of informal waste pickers.
3. They provide opportunities for waste pickers to study waste management abroad.
4. They incentivize policymakers to address the challenges faced by waste pickers.

Select the correct answer using the code given below:

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

73. According to the passage, what critical role do informal waste pickers play in the waste management system, and how does their systemic marginalization impact the efficiency of waste management in India?

1. They primarily collect and sort recyclable waste, contributing to

resource efficiency.

2. Their exclusion from social security schemes improves the economic viability of waste management.
3. Their involvement leads to a decline in the overall quality of waste management.
4. Non-recognition of waste pickers has no significant impact on waste management systems.

Select the correct answer using the code given below:

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

Passage: 5

A midst the climate crisis, shifting to sustainable practices across every sphere of human activity has become inevitable and urgent. In August 2023, ahead of the Assembly elections in five States, the Election Commission of India (ECI) voiced its concern over the environmental risks associated with the use of non-biodegradable materials in elections (it has been urging 'parties and candidates to avoid the use of plastic/polythene for preparation of election material during an election campaign, since 1999'). Given that the conduct of every election result in an avoidable carbon footprint, there is a need for eco-friendly elections, which would

be a boost to environmental stewardship alongside civic participation. Sri Lanka and Estonia, for instance, have conducted environmentally-conscious elections. As India, the world's most populous democracy, gears up for the next general election, environmental considerations must be prioritised, paving the way for 'green elections'.

74. In the context of environmental considerations for elections, how could the Election Commission of India (ECI) play a more active role in promoting eco-friendly practices?

1. Encouraging political parties to adopt sustainable materials for election campaigns.
2. Implementing penalties for the use of non-biodegradable materials in electoral processes.
3. Collaborating with international organizations to develop green election guidelines.
4. Providing financial incentives to parties and candidates for eco-friendly initiatives.

Select the correct answer using the code given below:

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

75. Considering the challenges involved in transitioning to "green elections," propose two innovative solutions that could effectively reduce the carbon footprint associated with electoral processes in India.

1. Implementing a nationwide ban on the use of plastic/polythene in election materials.
2. Introducing a government-led campaign to raise awareness about the environmental impact of elections.
3. Establishing a dedicated environmental task force within the ECI to monitor and enforce eco-friendly practices.
4. Collaborating with eco-friendly businesses to sponsor election materials and reduce costs for political parties.

Select the correct answer using the code given below:

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

Passage: 6

The burgeoning crisis of electronic waste (e-waste) in India is exacerbated by the swift expansion of the Information and Communication Technology (ICT) sector and the escalating obsolescence of electronic devices. As the world's third-largest e-waste producer, India churns out a staggering 2 million tons annually, with computer devices constituting a substantial 70%. Despite the inherent potential for reuse, refurbishment, or recycling, an alarming 95% of e-waste undergoes illicit recycling orchestrated by informal waste pickers. This clandestine recycling employs rudimentary methods, unleashing toxic pollutants and thereby imposing severe health and environmental hazards. While the government has enacted e-waste management regulations, their effective implementation remains a formidable challenge.

76. What is the primary concern highlighted in the passage regarding e-waste in India?

- (a) The inefficiency of government regulations in managing e-waste.
- (b) The overwhelming volume of e-waste generated by the ICT sector.
- (c) The insufficient potential for reuse and recycling of electronic devices.
- (d) The adverse health and environmental consequences of informal e-waste recycling.

Passage: 7

A cloudburst epitomizes an extraordinary meteorological phenomenon characterized by the abrupt and copious precipitation, often accompanied by thunderous tumult and hailstorm activity. Primarily manifesting in elevated terrains, these atmospheric convulsions precipitate flash floods and landslides, engendering substantial devastation to both life and property. Despite the conspicuous potential for cataclysm, prognosticating a cloudburst remains an arduous undertaking due to its capricious onset and the intricacies inherent in simulating high-resolution cloud dynamics.

Comprehending and ameliorating the ramifications of cloudbursts assume paramount importance in the realm of disaster management and preparedness, necessitating a comprehensive grasp of the event's capricious nature and its attendant complexities.

77. In the context of the paragraph describing cloudbursts, how does the capricious onset and high-resolution cloud dynamics contribute to the difficulty in predicting this meteorological phenomenon?

1. The unpredictability of cloudbursts is mitigated by the intricate simulation of low-resolution clouds.
2. High-resolution cloud dynamics simplify the prediction of cloudbursts, making it less challenging.
3. The capricious onset of cloudbursts is irrelevant to the complexities involved in simulating cloud dynamics.
4. The unpredictable nature of cloudbursts is intensified by the complexities in simulating high-resolution cloud dynamics.

Select the correct answer using the code given below:

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

78. The least number which when divided by 4, 6, 8, 12 and 16 leaves a remainder of 2 in each case is.

- (a) 46
- (b) 50
- (c) 48
- (d) 56

79. The LCM and the HCF of the numbers 28 and 42 are in the ratio:

- (a) 5
- (b) 15
- (c) 45
- (d) 270

80. The product of two co-prime numbers is 117. Then their LCM is

- (a) 117
- (b) 9
- (c) 13
- (d) 39

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