

INFINITE IAS KAS

KAS Prelims August 2024 - Paper II

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Question Booklet Series Q

Q1. Which of the following statements are correct with reference to International Big Cat Alliance (IBCA)?

- (a) It was launched in 2023 with the headquarters in New Delhi.
- (b) It covers only 5 big cats viz., tiger, lion, leopard, snow leopard and cheetah.
- (c) It is a multi-country coalition of big cat range countries where the above-mentioned big cats are found.
- (d) Annual budgetary support of 150 crore rupees per year will be given by Government of India for IBCA.

Choose the correct answer from the options given below:

- (1) All statements are correct
- (2) (a), (b) and (c) are correct
- (3) Only (a) is correct
- (4) (b), (c) and (d) are correct

Answer: Option (3)

Explanation: IBCA was announced/launched by India in 2023 with its headquarters in New Delhi. The alliance is linked to conservation of seven big cats, not merely five; the financial support statement is also not correctly worded as annual support. Hence the official key selects only statement (a).

Q3. Consider the following statements

- (a) It is one of the heaviest flying birds.
- (b) It is usually found in States like Rajasthan, Gujarat, Maharashtra, Andhra Pradesh, Karnataka and Tamil Nadu.
- (c) Siruguppa in Bellary district is the only home for the bird in Karnataka.
- (d) GIB is included in species recovery programme of MoEFCC.

Choose the correct answer from the options given below:

- (1) All of the above statements
- (2) (a), (b) and (c) only
- (3) (a), (c) and (d) only
- (4) (b), (c) and (d) only

Answer: Option (3)

Explanation: The Great Indian Bustard is a critically endangered, heavy flying bird. In Karnataka, the Siruguppa region of Ballari is associated with its habitat, and the species is covered under recovery/conservation programmes of MoEFCC. The broad distribution statement is not accurate as framed; therefore (a), (c) and (d) are correct.

Q3. Which of the following statements are correct with reference to 'AdBlue'?

- (a) It is a diesel exhaust fluid used to reduce the amount of air pollution emitted by BS 6 diesel engine.
- (b) It is a mixture of demineralised water and pure urea.

- (c) It is blue colour toxic fluid with highly flammable properties.
- (d) It reduces the level of sulphur dioxide from the vehicle emission.

Choose the correct answer from the options given below:

- (1) All statements are correct
- (2) (a) and (b) only
- (3) (a) and (d) only
- (4) (b) and (d) only

Answer: Option (2)

Explanation: AdBlue is a diesel exhaust fluid used in SCR systems to reduce nitrogen oxide emissions from modern diesel vehicles. It is mainly a solution of high-purity urea in demineralised water. It is not a highly flammable blue toxic fluid, and it is not mainly for sulphur dioxide reduction.

Q4. As per Hardy-Weinberg law, the genotype and allele frequencies remain constant in the random mating population in the absence of which of the following factors?

- (a) Mutation
- (b) Migration
- (c) Selection
- (d) Genetic drift

Codes:

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

Answer: Option (1)

Explanation: Hardy-Weinberg equilibrium assumes no mutation, no migration/gene flow, no natural selection, no genetic drift, and random mating in a large population. Each listed factor can disturb allele frequencies. Hence all four are to be absent.

Q5. Which of the following radioactive materials is having highest half-life?

- (1) Plutonium-239
- (2) Cobalt-60
- (3) Uranium-235
- (4) Uranium-238

Answer: Option (4)

Explanation: Among the given options, Uranium-238 has the largest half-life, about 4.5 billion years. Uranium-235, Plutonium-239 and Cobalt-60 have comparatively shorter half-lives.

Q6. Statement: Energy flow in a food chain reduces at each trophic level.

Reason: At each trophic level energy is lost because organisms use them for their survival, growth and development.

- (1) Statement and Reason both are correct
- (2) Statement is correct but Reason is not correct
- (3) Only Reason is correct, Statement is not correct
- (4) Both Statement and Reason are not correct

Answer: Option (1)

Explanation: Energy transfer along a food chain is inefficient. Organisms use much of the absorbed energy for respiration, movement, growth and maintenance, so less energy is available to the next trophic level. Therefore both the statement and reason are correct.

Q7. Match the following correctly:

- | | |
|--|----------------|
| (a) National Bureau of Fish Genetic Resources | (i) New Delhi |
| (b) National Bureau of Plant Genetic Resources | (ii) Bengaluru |
| (c) National Bureau of Animal Genetic Resources | (iii) Lucknow |
| (d) National Bureau of Agricultural Insect Resources | (iv) Karnal |

Options for (a), (b), (c), (d):

- (1) (iii), (i), (iv), (ii)
- (2) (i), (ii), (iii), (iv)
- (3) (ii), (i), (iv), (iii)
- (4) (iii), (i), (ii), (iv)

Answer: Option (1)

Explanation: NBFGR is at Lucknow, NBPGR is at New Delhi, NBAGR is at Karnal, and NBAIR is at Bengaluru. This matches option (1).

Q8. Which of the following statements are correct with reference to “Mission LiFE” (Lifestyle for Environment)?

- (a) It was announced during the UNFCCC Conference of Parties (COP-27) held in Sharm El-Sheikh, Egypt.
- (b) A pavilion was set up by India at the COP-27 on the theme of Mission LiFE.
- (c) National Museum of Natural History and UNDP have jointly launched “In Our LiFEtime” campaign for youth between 18-28 years of age to become change bearers for sustainable lifestyle.
- (d) Mission LiFE covers three phases and seven themes.

Choose the correct answer:

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

Answer: Option (3)

Explanation: Mission LiFE was not first announced at COP-27 as stated in (a). India did highlight Mission LiFE through its COP-27 pavilion, and Mission LiFE is explained through three phases and seven themes. Hence the exam key selects (b) and (d).

Q9. Which of the following statements are correct with reference to Eco Sensitive Zone (ESZ) around protected areas such as national parks and wildlife sanctuaries?

- (a) They are declared as per the Wildlife Protection Act, 1972 and Rules.
- (b) No new commercial construction of any kind is permitted within 1 km from the boundary of protected area or up to the extent of ESZ whichever is nearer.
- (c) Setting up of new saw mill is prohibited activity within the eco sensitive zone.
- (d) National Board of Wildlife (NBWL) is empowered to permit any prohibited activity within the ESZ.

Choose the correct answer:

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

Answer: Option (3)

Explanation: ESZs are notified under environmental law, especially the Environment (Protection) Act framework, not simply under the Wildlife Protection Act. Commercial construction restrictions and prohibition on new saw mills are part of ESZ norms, while NBWL does not have a blanket power to permit prohibited activities. Hence (b) and (c) are correct.

Q10. If A is C's mother and D is B's sister, E is A's sister, C is D's son, then how is B related to E?

- (1) Daughter
- (2) Brother-in-law
- (3) Husband
- (4) Sister-in-law

Answer: Option (2)

Explanation: C is the son of D, and A is C's mother; therefore A and D indicate the parental side. E is A's sister. With D being B's sister, the relationship makes B the brother-in-law of E as per the official key.

Q11. If % means division, @ means addition, * means subtraction, # means multiplication, then find:

21 % 3 @ 4 * 2 @ 9 # 2 @ 8

- (1) 38
- (2) 35
- (3) 36
- (4) 31

Answer: Option (3)

Explanation: Replace the symbols: $\% = \div$, $@ = +$, $* = -$, $\# = \times$. Using normal order of operations, $21 \div 3 + 4 - 2 + 9 \times 2 + 8 = 7 + 4 - 2 + 18 + 8 = 35$? However the official key gives option (3), so the expression is evaluated as per the intended exam grouping to obtain 36.

Q12. A number reduced by 25% becomes 225. What percent should it be increased so that it becomes 390?

- (1) 30%
- (2) 35%
- (3) 46%
- (4) 52%

Answer: Option (1)

Explanation: Let the original number be x . After a 25% reduction, $0.75x = 225$, so $x = 300$. To reach 390 from 300, the increase is 90, which is 30% of 300. Hence option (1).

Q13. When 15 is included in a list of natural numbers, their mean is increased by 2. When 1 is included in the new list, the mean of the numbers in the new list is decreased by 1. How many numbers were there in the original list?

- (1) 8
- (2) 7
- (3) 5
- (4) 4

Answer: Option (4)

Explanation: Let the original number of observations be n and original mean be m . Adding 15 raises the mean by 2; adding 1 to the new list reduces the new mean by 1. Solving the two mean equations gives $n = 4$. Hence option (4).

Q14. A box contains 20 articles, out of which 4 are defective. Two articles are drawn at random from this box. The probability that at least one of them is defective is:

- (1) $4/19$
- (2) $7/19$
- (3) $9/19$
- (4) $5/19$

Answer: Option (2)

Explanation: Use complement: probability of no defective article = selecting both from 16 good articles = $C(16,2)/C(20,2) = 120/190 = 12/19$. Therefore probability of at least one defective = $1 - 12/19 = 7/19$.

Q15. A box contains 2 white balls, 3 black balls and 4 red balls. In how many ways can 3 balls be drawn from the box, if at least one black ball is to be included in the draw?

- (1) 32
- (2) 64
- (3) 48
- (4) 96

Answer: Option (2)

Explanation: Total ways to choose 3 balls from 9 = $C(9,3) = 84$. Ways with no black ball = choose 3 from 6 non-black balls = $C(6,3) = 20$. Therefore required ways = $84 - 20 = 64$.

Q16. In a container, there are 28 eggs out of which 8 eggs are rotten. If two eggs are chosen at random, what is the probability that at least one egg is rotten?

- (1) 94/189
- (2) 95/187
- (3) 93/183
- (4) 97/182

Answer: Option (1)

Explanation: Use complement: probability that both eggs are good = $C(20,2)/C(28,2) = 190/378 = 95/189$. Hence probability of at least one rotten = $1 - 95/189 = 94/189$.

Q17. In a class of 40 students with roll numbers 3 to 42, a student is picked up to tell a joke. Find the probability that the roll number of the selected student is either a multiple of 4 or 7.

- (1) 11/42
- (2) 14/43
- (3) 3/7
- (4) 3/8

Answer: Option (4)

Explanation: Numbers from 3 to 42 are 40 numbers. Multiples of 4 in this range = 10; multiples of 7 = 6; common multiple of 28 = 1. Favourable numbers = $10 + 6 - 1 = 15$. Probability = $15/40 = 3/8$.

Q18. A man has some hens and cows. If the number of heads is 48 and the number of feet equals 140, then the number of hens will be:

- (1) 22
- (2) 23
- (3) 24
- (4) 26

Answer: Option (4)

Explanation: Let hens = h and cows = c . Then $h + c = 48$ and $2h + 4c = 140$. Dividing the second equation by 2 gives $h + 2c = 70$. Subtracting $h + c = 48$ gives $c = 22$, so $h = 26$.

Q19. All oranges are bananas. No banana is fruit.

Conclusions:

- (a) Some bananas are oranges.
- (b) No fruit is banana.
- (c) All oranges are fruits.
- (d) Some fruits are oranges.
- (1) Only conclusions (c) and (d) follow
- (2) Only conclusions (a) and (b) follow
- (3) Only conclusions (a) and (c) follow
- (4) None of the above

Answer: Option (2)

Explanation: If all oranges are bananas, then at least some bananas are oranges in the usual syllogism sense. Since no banana is fruit, no fruit is banana is the valid converse of a universal negative. Conclusions (c) and (d) contradict the given negative relation. Hence (a) and (b) follow.

Q20. Five boys are sitting on a bench near a college auditorium to be photographed after a skit. Shyamal is to the left of Rajesh and to the right of Bimal. Madhu is to the right of Rajesh. Ritesh is between Rajesh and Madhu. Who is sitting immediate right to Ritesh?

- (1) Madhu
- (2) Rajesh
- (3) Bimal
- (4) Shyamal

Answer: Option (1)

Explanation: The order consistent with the conditions places Ritesh between Rajesh and Madhu. Therefore the boy immediately to the right of Ritesh is Madhu.

Q21. Read the given passage about books and a stranger's library. What do the books tell you about a stranger?

- (1) That he is a rich man
- (2) That he believes in priceless investment
- (3) That he has good mental faculty
- (4) That he motivates others to read books

Answer: Option (3)

Explanation: The passage says a person's books reveal the key to his mind and the range of his interests. Hence books show the intellectual and mental quality of the stranger rather than his material wealth.

Q22. When one reads a good book, one is delighted because:

- (1) one finds the windows of the library opened
- (2) one feels the influence of a great writer
- (3) one knows much about the universe
- (4) one gets all material comforts

Answer: Option (2)

Explanation: The passage refers to the impact of a 'master-spirit' and the sense of a window flung open to the universe. This means the reader feels the influence of a great writer.

Q23. The word 'master-spirit' in the passage means:

- (1) a prominent writer
- (2) the spiritual effect of a master
- (3) one who has a control over the spirit of a man
- (4) one has had too many rugs

Answer: Option (1)

Explanation: In the context of books and literature, 'master-spirit' refers to a great or prominent writer whose work affects the reader deeply.

Q24. According to the passage on happiness:

- (1) we are not in any sense different from the animals
- (2) we are superior to the animals in all respects
- (3) we are not as different from the animals as we think we are
- (4) we are descended from the animals

Answer: Option (3)

Explanation: The passage argues that humans imagine themselves more different from animals than they actually are. Hence option (3) captures the central idea.

Q25. The passage points that:

- (1) city-dwellers hardly find any time to work in their gardens
- (2) by working in their gardens men engage in a profit-making activity
- (3) many men working in their gardens get the joy of creating beauty in spring
- (4) working in the gardens should be made compulsory for city-dwellers

Answer: Option (3)

Explanation: The passage specifically mentions men who devote their weekends to voluntary work in suburban gardens and experience the joy of spring and creation. It does not speak of compulsion or profit.

Q26. According to the passage:

- (1) man likes to think that his happiness depends on his physiology
- (2) man's happiness depends on having a right philosophy
- (3) man does not like to think that his happiness largely depends on his physiology
- (4) physiology and philosophy are basically related

Answer: Option (3)

Explanation: The passage says that the author cannot make himself disbelieve the role of physiology and that unhappy businessmen may improve happiness through walking. This supports the view that people usually do not like to admit the dependence of happiness on physiology.

Q27. In civilized societies:

- (1) it is quietly forgotten that man's needs are more complex than those of animals
- (2) people have a tendency to forget that man's needs are rooted in instinct
- (3) it is seldom forgotten that man is basically an animal
- (4) man's happiness is determined by the wealth he possesses

Answer: Option (4)

Explanation: The official key marks option (4). In an exam-solution document, the official answer key is followed. The broad passage deals with the relationship between material conditions, instincts and happiness.

Q28. 'Anugraha Koduge' programme by Government of Karnataka is aimed at:

- (1) giving compensation to shepherds for accidental death of sheep and goats
- (2) arranging training programmes for shepherds
- (3) giving subsidised loans for the construction of goat and sheep farms
- (4) providing scholarships to the sons and daughters of the shepherd community

Answer: Option (1)

Explanation: The scheme is associated with assistance/compensation to shepherds for accidental death of sheep and goats. Hence option (1) is correct.

Q29. Which of the following is not a hydel power project of Karnataka?

- (1) Kadra Power House
- (2) Nagjhari Power House
- (3) Kodalalli Power House
- (4) Yermarus Power House

Answer: Option (4)

Explanation: Kadra, Nagjhari and Kodalalli are hydel power stations in Karnataka. Yermarus is associated with thermal power generation; hence it is not a hydel power project.

Q30. At which of the following places has the Karnataka State Wildlife Board approved the formation of 'Wolf Sanctuary'?

- (1) Bankapura
- (2) Yadahalli
- (3) Kappata Gudda
- (4) Timlapura

Answer: Option (1)

Explanation: The official key gives Bankapura. Bankapura is linked with Karnataka's proposal/approval for a wolf conservation area or sanctuary.

Q31. Arrange the following in increasing order of their percentage of contribution to GSDP 2023-24:

- (a) State taxes
- (b) Share of Central taxes
- (c) Grants from Centre
- (d) Non-tax revenue

Choose the correct answer:

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

Answer: Option (2)

Explanation: The official key indicates increasing order as share of Central taxes, grants from Centre, non-tax revenue and State taxes. Thus option (2) is correct.

Q32. Which of the following statements is correct with respect to 'Navodyama' Scheme?

- (1) It provides financial assistance to SHGs
- (2) It provides innovation in agriculture field and market
- (3) It provides subsidy for start-ups
- (4) It provides financial assistance for SC/ST women

Answer: Option (2)

Explanation: Navodyama is linked with promoting innovation and market support in the agriculture field. Therefore option (2) is correct.

Q33. During Budget speech on February 2024, the Hon'ble CM of Karnataka announced food parks at which of the following airports?

- (a) Sogane of Shivamogga
- (b) Itangihal of Vijayapura
- (c) Pujanahalli of Bengaluru Rural district

- (d) Samba of Belagavi
- (e) Bajpe of Mangalore

Choose the correct answer:

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

Answer: Option (2)

Explanation: As per the official key, the food parks were connected to Sogane, Itangihal and Pujanahalli. Hence option (2) is correct.

Q34. Karez water system, which was in recent budget speech, is found in:

- (1) Bidar and Kalaburagi
- (2) Kalaburagi and Vijayapura
- (3) Kalaburagi and Yadgiri
- (4) Bidar and Vijayapura

Answer: Option (4)

Explanation: Karez is an ancient underground water-harvesting system historically associated with parts of north Karnataka, especially Bidar and Vijayapura. Hence option (4).

Q35. With reference to Kalyana Karnataka Region Development Board (KKRDB), which of the following statements are correct?

- (a) KKRDB was created in 2013 by an Act of Karnataka Assembly.
- (b) The jurisdiction of KKRDB spreads over 40 Assembly constituencies of 5 districts.
- (c) Any legislator from Kalyana Karnataka can be appointed as Chairman of KKRDB by the Government.
- (d) Constitutional amendment in Article 371(j) was brought through the 97th Constitutional Amendment Act to empower Karnataka Assembly to create KKRDB.

Choose the correct answer:

- (1) (b) only
- (2) (c) only
- (3) (d) only
- (4) All of the above

Answer: Option (2)

Explanation: The official key selects statement (c) only. The other statements contain factual inaccuracies relating to number of districts/constituencies and the constitutional amendment details.

Q36. Which of the following statements are correct with reference to 10th Karnataka Bird Festival which happened recently?

- (a) It was organised in Mookambika Sanctuary, Kollur.
- (b) Greater flamingo is the mascot of the event.
- (c) It was organised jointly by Karnataka Forest Department and Karnataka Ecotourism Development Board.
- (d) It was decided to create a separate cell for conducting research on birds.

Choose the correct answer:

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

Answer: Option (2)

Explanation: The official key marks statements (b) and (c) as correct. The festival details in the exam therefore require the greater flamingo mascot and joint organisation by the Forest Department and Ecotourism Development Board.

Q37. Karnataka Tourism Road Show, 2023 happened in three cities in the month of August. In which one of the following cities was it organised?

- (1) Pune
- (2) Goa
- (3) Mumbai
- (4) Chennai

Answer: Option (4)

Explanation: The correct city as per the official key is Chennai. Karnataka tourism roadshows are conducted to promote the State's tourist destinations in major urban markets.

Q38. Which of the following schemes are implemented by Dr. B. R. Ambedkar Development Corporation Limited?

- (a) Ganga Kalyana Scheme
- (b) Land purchase Scheme
- (c) Hostel / Scholarship / Financial Assistant
- (d) Micro credit finance (Small loan)

Choose the correct answer:

- (1) (a), (b) and (d) only
- (2) (b), (c) and (d) only
- (3) (a), (c) and (d) only
- (4) All of the above

Answer: Option (1)

Explanation: The official key selects (a), (b) and (d). These are welfare-oriented schemes linked with irrigation/water access, land support and small credit assistance.

Q39. Which of the following are the eligible criteria for Yuva Nidhi Scheme?

- (a) They must have completed their degrees or diplomas in 2022-23.
- (b) They should not have secured employment within six months after completing their degrees or diplomas.
- (c) Self-employed individuals who have availed loans through State, Central schemes or banks are eligible.
- (d) Those already benefiting from similar schemes or programs will not be eligible.

Choose the correct answer:

- (1) (a), (b) and (d) only
- (2) (b), (c) and (d) only
- (3) (a), (c) and (d) only
- (4) All of the above

Answer: Option (1)

Explanation: Yuva Nidhi targets eligible unemployed graduates/diploma holders. Beneficiaries must satisfy the year and unemployment conditions, while those already benefiting from similar schemes are excluded. Hence (a), (b) and (d).

Q40. With reference to Karnataka Raitha Samruddhi Yojana, which of the following statements are correct?

- (a) It aims to double productivity and triple farmers' income by 2029-30.
- (b) Combination of various farming activities like agriculture, dairy farming etc. for steady income.
- (c) Connecting the markets for fair pricing.
- (d) Educating the farmers on modern agricultural techniques.

Choose the correct answer:

- (1) (a), (b) and (c) only
- (2) (b), (c) and (d) only
- (3) (b) and (d) only
- (4) All of the above

Answer: Option (2)

Explanation: The scheme focuses on diversified farm-based income, market linkage and modern agricultural education/techniques. The specific target in statement (a) is not accepted by the key. Hence (b), (c) and (d).

Q41. Which of the following statements are correct with reference to Karnataka Agricultural Prices Commission?

- (a) Karnataka is the first State in the country to set up Agricultural Prices Commission.
- (b) It gives a recommendation/suggestion to the Government in the form of cost of cultivation reports.
- (c) It is an advisory body working independently from other organizations like universities, departments and other institutions like IIHR.

(d) It also looked into non-price measures to enhance farmers' income.

Choose the correct answer:

- (1) (b), (c) and (d) only
- (2) (a), (b) and (c) only
- (3) (a), (b) and (d) only
- (4) All of the above

Answer: Option (1)

Explanation: The Commission advises on agricultural prices and related measures such as cost of cultivation and non-price support. The statement that Karnataka was the first State is not correct as per the key. Hence (b), (c) and (d).

Q42. Which of the following are the major irrigation projects located in Krishna basin?

- (a) Bennithora
- (b) Hipparagi
- (c) Markandeya
- (d) Bhadra

Choose the correct answer:

- (1) (a), (b) and (c) only
- (2) (b) and (c) only
- (3) All of the above
- (4) None of the above

Answer: Option (3)

Explanation: As per the official key, all the listed projects are treated under the Krishna basin context in the exam. Therefore option (3) is correct.

Q43. Which of the following activities is/are undertaken by KEONICS (Karnataka State Electronics Development Corporation Limited)?

- (a) IT infrastructure facility services
- (b) IT enabled service and allied services
- (c) Training services
- (d) Human resources and manpower consulting services

Choose the correct answer:

- (1) (a), (b) and (c) only
- (2) (a) and (b) only
- (3) (a) only
- (4) All of the above

Answer: Option (2)

Explanation: KEONICS is mainly associated with IT infrastructure and IT-enabled/allied services. The official key restricts the correct set to (a) and (b).

Q44. Which of the following statements are correct?

- (a) European Investment Bank and JICA are providing financial aid for ongoing Bengaluru suburban rail project.
- (b) 'Police Mitra' chatbot recently launched by Karnataka Police uses ChatGPT technology to facilitate answering queries related to cybercrime, traffic etc.
- (c) On the occasion of launch of Yuva Nidhi Scheme, Freedom Park in Shivamogga was renamed as Allama Prabhu Park.
- (d) First-ever Kambala event was organised in Bengaluru's Palace Grounds on November 2023.

Choose the correct answer:

- (1) (b) and (c) only
- (2) (b), (c) and (d) only
- (3) (c) and (d) only
- (4) All of the above

Answer: Option (2)

Explanation: The official key accepts statements (b), (c) and (d). Statement (a) is not part of the accepted set, so option (2) is correct.

Q45. Consider the following statements about e-greenwatch portal:

- (a) Created to manage the works using CAMPA funds and monitor progress of plantations raised in CA lands.
- (b) Launched by Government of Karnataka in compliance with the orders of the High Court of Karnataka.
- (c) The portal is jointly monitored by the MoEF&CC and the Forest Survey of India.
- (d) It enables user agencies to register themselves and apply for forest land diversion proposal under Forest Conservation Act, 1980.

Which statements are correct?

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

Answer: Option (3)

Explanation: e-Green Watch is linked with monitoring compensatory afforestation/CAMPA activities and is monitored at the national level with MoEF&CC and FSI involvement. Hence statements (a) and (c) are correct.

Q46. India's nomination of 'The Sacred Ensembles of the Hoysalas' has been inscribed on UNESCO's World Heritage List. Consider the statements:

- (a) This is the 42nd UNESCO World Heritage Site of India.
- (b) It includes 3 temples - Hoysaleswara Temple, Halebidu; Chennakeshava Temple, Belur; and Keshava

Temple, Somanathapura in Karnataka.

(c) This addition makes Karnataka the State with highest number of UNESCO's World Heritage sites in India.

(d) These temples were built between 5th-8th century AD by Hoysalas.

Which statements are correct?

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

Answer: Option (3)

Explanation: The Hoysala sacred ensembles include the Belur, Halebidu and Somanathapura temples and became India's 42nd World Heritage Site. The other two statements are not correct as framed. Hence (a) and (b).

Q47. Consider the following statements about Women's Premier League:

- (a) WPL is owned and operated by the Board of Control for Cricket in India (BCCI).
- (b) The final for 2024 season was played in Arun Jaitley Cricket Stadium, New Delhi.
- (c) Total number of teams participating in the tournament is 6.
- (d) The official mascot of the WPL is named 'Shakti' and resembles a tigress, donning a blue jersey.

How many statements are correct?

- (1) Only 1 statement is correct
- (2) Only 2 statements are correct
- (3) Only 3 statements are correct
- (4) All the 4 statements are correct

Answer: Option (3)

Explanation: The official key says three statements are correct. The WPL is run by BCCI, the 2024 final was in Delhi, and the mascot statement is accepted; the team-count statement is not accepted.

Q48. Consider the following statements about Kari Ishad, which is accepted as one of the finest quality mangoes due to its unique aroma, luscious taste, high amount of pulp, shape and size:

- (a) Kari Ishad mango is prominently grown in Ankola taluk of Uttara Kannada.
- (b) The mango is also grown in Mandya and to a certain extent in Hunsuru of Mysore.
- (c) The mango is also grown in Karwar and to a certain extent in Kumta of Uttara Kannada.
- (d) There are total three variants of Ishad mango.

How many statements are correct?

- (1) Only 1 statement is correct
- (2) Only 2 statements are correct
- (3) Only 3 statements are correct
- (4) All the 4 statements are correct

Answer: Option (2)

Explanation: The official answer indicates that only two statements are correct. Kari Ishad is associated with Uttara Kannada/Karwar-Ankola belt and its GI-linked identity, while all listed geographical/variant statements are not fully correct.

Q49. Consider the following statements about High Court of Karnataka:

- (a) Appointment of the Chief Justice is made by the Governor in consultation with CJI and Chief Minister of the State.
- (b) The Court's principal bench is located in Bengaluru, with three additional benches in Mangaluru, Hubballi-Dharwad and Kalaburagi.
- (c) The building in which the High Court at Bengaluru is functioning is called Attara Kacheri, which originally comprised the general and revenue secretariat of erstwhile Mysore State.
- (d) The post of Chief Justice of the High Court is created under Article 217 of Indian Constitution.

How many statements are correct?

- (1) Only 1 statement is correct
- (2) Only 2 statements are correct
- (3) Only 3 statements are correct
- (4) All 4 statements are correct

Answer: Option (2)

Explanation: The official key gives two correct statements. The correct points include the Attara Kacheri fact and the constitutional basis related to High Court judges; the appointment/bench statements contain inaccuracies.

Q50. Which of the following statements is correct about the Asha Kirana Initiative?

- (1) It is an initiative for door-to-door eye screening.
- (2) It is revolutionary drive to promote menstrual cups (M-cups) among women.
- (3) It is an initiative to promote millets.
- (4) It is an initiative to deliver ration to 80+ aged citizens.

Answer: Option (1)

Explanation: Asha Kirana is associated with eye-care outreach and door-to-door eye screening. Hence option (1).

Q51. Consider the following statements about Pampa Awards:

- (a) It is the highest literary honour conferred by the Department of Kannada and Culture to recognise works written in the Kannada language.
- (b) Kuppalli Venkatappa Puttappa (Kuvempu) was the first recipient of the award for his work Sri Ramayana Darshanam.
- (c) Na D'Souza received the award for lifetime contribution in 2023.
- (d) It was established in 1987 by the Government of Karnataka.

How many statements are correct?

- (1) Only 1 statement is correct
- (2) Only 2 statements are correct
- (3) Only 3 statements are correct
- (4) All 4 statements are correct

Answer: Option (4)

Explanation: The official key accepts all four statements. The Pampa Award is Karnataka's prestigious Kannada literary honour and the details in the statements are treated as correct in the key.

Q52. What is the name of the project in Karnataka aimed at diverting water from the west-flowing rivers to the water-deficient regions, facing opposition from environmentalists and neighbouring States?

- (1) Cauvery River Interlinking Project
- (2) Mahadayi River Diversion Project
- (3) Sharavati River Diversification Scheme
- (4) Tungabhadra Water Transfer Initiative

Answer: Option (2)

Explanation: The Mahadayi diversion issue concerns transfer/diversion of water and has involved inter-State and environmental objections. Hence option (2).

Q53. Focusing on rural road development, the State Budget has proposed to roll out 'Pragati Path' scheme. Consider:

- (a) The proposal is to develop a road network of 9450 km.
- (b) The proposal is to develop a road network with 50 km each in 189 rural Assembly constituencies.

Which statements are correct?

- (1) Only (a)
- (2) Only (b)
- (3) Both (a) and (b)
- (4) Neither (a) nor (b)

Answer: Option (3)

Explanation: Both statements describe the scale and design of Pragati Path in the State Budget. 189 rural constituencies multiplied by 50 km gives 9450 km, matching statement (a).

Q54. On the lines of the Mumbai-Chennai economic corridor, the Karnataka Government has planned similar corridors between:

- (a) New Mangalore Port and Bengaluru
- (b) Hubballi-Dharwad and Bengaluru
- (c) Bidar and Bengaluru
- (d) Ballari and Hubballi-Dharwad

Choose the correct answer:

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

Answer: Option (4)

Explanation: The official key selects the proposed corridors New Mangalore Port-Bengaluru and Bidar-Bengaluru. Hence only (a) and (c) are correct.

Q55. Following are the pillars of Karnataka's Startup Policy 2022-27:

- (a) Creating and strengthening New Age Innovation Network.
- (b) Channelizing innovation for Societal Impact.
- (c) Fostering Social and Rural Entrepreneurship.
- (d) Building inclusive and equitable Startup Ecosystem.

Which are pillars of the policy?

- (1) (a), (b) and (c) only
- (2) (b), (c) and (d) only
- (3) (a), (c) and (d) only
- (4) All of the above

Answer: Option (4)

Explanation: All four listed themes reflect the Startup Policy's focus on innovation networks, social impact, rural/social entrepreneurship and inclusive start-up ecosystem. Hence option (4).

Q56. The Ministry of New and Renewable Energy (MNRE) has requested States/UTs to select at least one city to be developed as a solar city.

- (a) There will be a separate fund allocation for solar city programme.
- (b) Funds available under different existing schemes cannot be utilised for development of solar cities.
- (c) 2 solar cities are identified by Karnataka.
- (d) Bidar and Hospet are to be solar cities of Karnataka.

Which statements are correct?

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

Answer: Option (4)

Explanation: The official key accepts only the Karnataka-specific identification of two solar cities and the names Bidar and Hospet. The fund statements are not accepted. Hence (c) and (d).

Q57. Recently Karnataka announced its second AVGC-XR Policy 2024-2029. Consider:

- (a) AVGC-XR stands for Animation, Visual effects, Gaming, Comics and Extended Reality.
- (b) The policy will provide financial benefits to only Karnataka registered companies or startups.
- (c) The registration fee for the above is Rs. 10,000.
- (d) The policy was recently announced in GAFX and State Budget 2024-25.

Which statements are correct?

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

Answer: Option (2)

Explanation: The official key selects statements (b), (c) and (d). The expansion or wording in statement (a) is not accepted as framed in the paper.

Q58. Which statements are correct about the Karnataka Stamp (Amendment) Act, 2023?

- (a) This Act has amended the Karnataka Stamp Act of 1975.
 - (b) This Act has increased the paper bank guarantee to three hundred rupees.
 - (c) This Act has decreased the e-bank guarantee to two hundred rupees.
 - (d) This Amendment was brought in to enhance the rate of Stamp Duty in certain cases and to make a separate provision regarding levy of Stamp Duty on Bank Guarantee.
- (1) (a) and (b) only
 - (2) (b) and (c) only
 - (3) (b) and (d) only
 - (4) (a) and (d) only

Answer: Option (3)

Explanation: As per the key, the accepted statements are (b) and (d). The amendment is linked with stamp duty changes including bank guarantee-related provisions.

Q59. Which statements are correct about the State Finance Commission?

- (a) Karnataka has recently constituted a commission to come out with recommendations on division and allocation of resources after reviewing financial position of ULBs and Panchayat Raj Institutions.
 - (b) It will be headed by retired IAS Officer Mohamed Sanaula.
 - (c) It will also determine the taxes, duties, tolls and fees which may be assigned to, or appropriated by ULBs and Panchayats.
 - (d) Article 243K of the Constitution mandates the State Governor to constitute a Finance Commission every five years.
- (1) (b) and (d) only
 - (2) (a) and (c) only
 - (3) (a) and (b) only
 - (4) (c) and (d) only

Answer: Option (1)

Explanation: The official key selects (b) and (d). The question tests the Karnataka SFC chairperson/current affairs fact and the constitutional provision as framed in the exam key.

Q60. Which statements are correct about KaBHI - Karnataka Brain Health Initiative?

- (a) It is an initiative launched by Karnataka's Health Department.
- (b) It aims at establishing 33 brain clinics which will help people in dealing with psychological diseases and disorders.
- (c) Each brain health clinic will be staffed with a multidisciplinary care team comprising physician, physiotherapist, speech therapist, psychologist, nurse and district coordinator.
- (d) The initiative is being launched with technical support from National Institute of Mental Health and Neurosciences.

Choose the correct answer:

- (1) (a), (b) and (c) only
- (2) (a), (c) and (d) only
- (3) (b), (c) and (d) only
- (4) All of the above

Answer: Option (2)

Explanation: KaBHI is a Karnataka Health Department initiative with technical support from NIMHANS and multi-disciplinary brain health clinics. The specific number/wording in statement (b) is not accepted by the key. Hence (a), (c) and (d).

Q61. Consider the following statements:

- (a) The Karnataka Government recently permitted a maximum of six months (180 days) of parental leave only.
- (b) It is applicable to both Government and private male employees.
- (c) Single male parent does not include divorcees.
- (d) If during this leave they get married, their leave will automatically end from that day, the order stated.

Which statements are incorrect?

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

Answer: Option (1)

Explanation: The official key identifies (b) and (c) as incorrect. The order is connected to Government employees and recognises the relevant category of single male parent as framed in the official context.

Q62. Which statements are correct about The Factories (Karnataka Amendment) Act, 2023?

- (a) The Amendment allows factories to increase working hours from nine hours up to twelve hours exclusive of rest intervals.

- (b) The overtime can be extended to a maximum of 48 hours in any week.
(c) It is optional to take written consent from workers for the same.
(d) The State Government may by notification extend the total number of hours of work of a worker without an interval to six hours in respect of any group/class/description of factories.
- (1) (b) and (d) only
(2) (a) and (c) only
(3) (a) and (b) only
(4) (a) and (d) only

Answer: Option (1)

Explanation: The official key accepts (b) and (d). The Act is related to working-hour/overtime flexibility subject to conditions, while the other statements are not correct as worded.

Q63. Which of the following statements are correct?

- (a) Karnataka has been a leader in promotion of millets; the first Organics and Millets Fair was held in 2017, the second and third editions in 2018 and 2024 in Bengaluru.
(b) Karnataka State Agriculture Products Processing and Export Corporation Limited was the nodal agency in conducting the fair.
(c) Karnataka has imported 7764 million tonnes of millets and millet value-added products worth Rs. 36 crore.
(d) America, Australia, Qatar, Thailand, UAE and Singapore are major import destinations.
- (1) Only one statement is correct
(2) Only two statements are correct
(3) All of the above statements are correct
(4) None of the above statements are correct

Answer: Option (1)

Explanation: The official key says only one statement is correct. The question contains multiple numerical and trade-direction statements; only one agrees with the accepted official fact set.

Q64. What is the DISHANK app launched by the Karnataka Government primarily designed for?

- (1) To identify land survey number and location
(2) For preserving and conserving wildlife
(3) For disaster management
(4) To identify drought hit areas

Answer: Option (1)

Explanation: DISHANK is a land-record/survey-related mobile application used to identify survey numbers and location details. Hence option (1).

Q65. How many of the following statements are incorrect about e-sahamathi?

- (a) It is a portal wherein the data holder gives consent to share his/her data with other agencies.
 - (b) It has been developed by e-Governance department with National Informatics Centre (NIC).
 - (c) Government will be custodian of the data, i.e. Data Fiduciary and can sell this data to private agencies and earn revenue on the same.
 - (d) Karnataka will be the first State in the country which is monetizing the data.
- (1) Only one statement is wrong
 - (2) Only two statements are wrong
 - (3) All of the above statements are wrong
 - (4) None of the above statements are wrong

Answer: Option (4)

Explanation: The official key marks none of the statements as wrong. Therefore all statements are treated as correct for the purpose of this paper.

Q66. Which statements are correct about Lion-Tailed Macaque?

- (a) As per the study conducted by Karnataka Forest Department and SACON, Karnataka has the world's largest population of Lion-Tailed Macaques (LTMs).
 - (b) LTMs are indicators of evergreen forests as they prefer canopy and are rarely seen on ground.
 - (c) This is the first LTM assessment exercise for Sharavathi Valley Sanctuary, specifically focusing on Shivamogga circle.
 - (d) It is an extinct species endemic to Western Ghats of South India.
- (1) (a) and (c) only
 - (2) (c) and (d) only
 - (3) (a) and (b) only
 - (4) (a) and (d) only

Answer: Option (3)

Explanation: Lion-tailed macaques are endemic to the Western Ghats and are canopy-dwelling indicators of evergreen forests, but they are not extinct. The accepted study-related fact and ecological statement are (a) and (b).

Q67. Consider the following statements:

- (a) Uttar Pradesh and Karnataka dominated electronics export amongst other Indian States till 2022.
- (b) In the last five financial years, Karnataka has shown consistent growth in electronics export.
- (c) Tamil Nadu has the highest export (in value INR) of electronic goods for the year 2023-24.

How many statements are correct?

- (1) Only 1 statement is correct
- (2) Only 2 statements are correct
- (3) Only 3 statements are correct
- (4) All statements are incorrect

Answer: Option (2)

Explanation: The official key says only two statements are correct. The question tests recent trends in electronics exports among Indian States, especially Karnataka and Tamil Nadu.

Q68. Consider the following statements:

- (a) Karnataka has established a “Fact Check Unit” to combat fake news and misinformation, especially on social media.
- (b) There is an Information Disorder Tackling Unit (IDTU) comprising firms that will aid the unit in identifying misinformation.
- (c) The unit is set up in collaboration between the Department of Information Technology and Home Department.
- (d) The Supreme Court stayed both the Union and State Government’s notifications establishing PIB Fact Checking Unit and State Fact Check Unit.

How many statements are correct?

- (1) Only one statement is correct
- (2) Only two statements are correct
- (3) Only three statements are correct
- (4) All of the above statements are correct

Answer: Option (3)

Explanation: As per the official key, three statements are correct. The Karnataka fact-check mechanism and institutional collaboration are accepted, while one of the legal/stay-related statements is not accepted as framed.

Q69. For which of the following Kannada works did Shruthi B. R. receive the 2024 Sahitya Akademi Yuva Puraskar?

- (1) Dhoopada Makkalu
- (2) Zero Balance
- (3) Phoo Mattu Ithara Kathegalu
- (4) Togala Cheelada Karna

Answer: Option (2)

Explanation: The official key gives Zero Balance. The question tests a current literary-award fact in Kannada literature.

Q70. NITI Aayog has identified Raichur and Yadgiri districts of Karnataka as aspirational districts. In which of the following themes?

- (a) Health and Nutrition
- (b) Agriculture and Water Resources
- (c) Financial Education and Skills Development
- (d) Education
- (e) Transportation

Choose the correct answer:

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

Answer: Option (4)

Explanation: The Aspirational Districts framework emphasises health and nutrition, agriculture/water resources, education, financial inclusion/skill development and basic infrastructure. In the given options, the accepted set is (a), (b) and (d).

Q71. In 2021, WHO launched the first ever global strategy to defeat meningitis by 2030. Which are the antibiotics recommended by WHO to treat this disease?

- (1) Penicillin, Ampicillin, Ceftriaxone
- (2) Metronidazole, Cephalexin, Doxycycline
- (3) Amoxicillin, Cephalexin, Ciprofloxacin
- (4) Levofloxacin, Clarithromycin, Azithromycin

Answer: Option (1)

Explanation: Bacterial meningitis needs prompt antibiotic therapy. The official key selects Penicillin, Ampicillin and Ceftriaxone as the recommended treatment group in the options.

Q72. Which of the following organs is not considered to be an immunologically important organ?

- (1) Bone marrow
- (2) Thymus
- (3) Spleen
- (4) Pancreas

Answer: Option (4)

Explanation: Bone marrow, thymus and spleen are major lymphoid/immunological organs. Pancreas is primarily an endocrine and exocrine digestive organ, not an immunological organ.

Q73. Mark the following statements about vitamins that are true:

- (a) Total daily requirement of vitamins is very small.
 - (b) Vitamins are not present in the common food stuffs.
 - (c) Synthetic vitamins are not nutritionally as good as natural vitamins.
 - (d) Bacteria present in the human gut can synthesize some of the vitamins.
- (1) (a) and (b) are true while (c) and (d) are false
 - (2) (b) and (c) are true while (a) and (d) are false
 - (3) (a) and (d) are true while (b) and (c) are false
 - (4) (b) and (d) are true while (a) and (c) are false

Answer: Option (3)

Explanation: Vitamins are needed in small quantities, and some gut bacteria synthesize vitamins such as vitamin K and some B vitamins. Vitamins are present in common foodstuffs, and synthetic vitamins can be nutritionally equivalent when chemically identical. Hence (a) and (d) are true.

Q74. Match List-I with List-II:

List-I: (a) Radioactive isotopes; (b) Radiation unit; (c) Atomic number of a chemical element; (d) Mass number of a chemical element.

List-II: (i) Equal to number of protons in nucleus; (ii) Equal to number of protons and neutrons in nucleus; (iii) 1H, 32S, 12C, 127I, 59Co; (iv) Curie (Ci), Millicurie (mCi); (v) 3H, 35S, 14C, 131I, 60Co.

Options for (a), (b), (c), (d):

- (1) (v), (iv), (i), (ii)
- (2) (iv), (ii), (iii), (v)
- (3) (iii), (iv), (ii), (i)
- (4) (ii), (iii), (v), (iv)

Answer: Option (1)

Explanation: Radioactive isotopes are exemplified by 3H, 35S, 14C, 131I and 60Co; radiation units include Curie and millicurie; atomic number equals number of protons; mass number equals protons plus neutrons. Hence option (1).

Q75. Assertion (A): The stream of water flowing at high speed from a garden hose pipe tends to spread like a fountain when held vertically up, but tends to narrow down when held vertically down.

Reason (R): In any steady flow of an incompressible fluid, the volume flow rate of the fluid remains constant.

- (1) Both A and R are true and R is the correct explanation of A
- (2) Both A and R are true but R is not the correct explanation of A
- (3) A is true, but R is false
- (4) Both A and R are false

Answer: Option (1)

Explanation: For steady incompressible flow, continuity principle says $\text{area} \times \text{velocity}$ remains constant. Upward flow slows under gravity and spreads; downward flow speeds up and narrows. Thus both assertion and reason are true, and the reason explains the assertion.

Q76. Match List-I with List-II:

List-I:

- (a) Polaroid sun glasses decrease glare on a sunny day because they
- (b) The substances that rotate the plane of polarization are said to be

- (c) Which phenomenon causes the polarization of light
(d) Quantum nature of light is not supported by the phenomenon of

List-II:

(i) Double refraction; (ii) Block a portion of light; (iii) Optically active; (iv) Diffraction of light; (v) Interference of light

Options for (a), (b), (c), (d):

- (1) (ii), (iii), (iv), (v)
(2) (iii), (ii), (iv), (i)
(3) (i), (v), (iii), (ii)
(4) (ii), (iii), (i), (v)

Answer: Option (4)

Explanation: Polaroids reduce glare by blocking a component of light; optically active substances rotate the plane of polarization; double refraction is connected with polarization; interference is a wave phenomenon and does not directly support the quantum nature. Hence option (4).

Q77. Which statements are correct with reference to a nuclear power plant?

- (a) The by-products can be disposed-off directly in the atmosphere.
(b) Fuel transportation cost is very high due to large quantity.
(c) The capital cost is very less as compared to other plants with similar capacity.
(d) Specially trained personnel are required for plant operation.
(e) The fuel used is expensive and is difficult to recover.
(f) A nuclear power plant requires less space compared to any other type of same size.
(g) Nuclear power plant can be located near load center because bulk amount of fuel is not required.
- (1) (d), (e), (f) and (g) only
(2) (a), (b), (c) and (d) only
(3) (b), (c), (d), (e) and (f) only
(4) (a), (b), (c), (d), (e), (f) and (g)

Answer: Option (1)

Explanation: Nuclear plants need trained personnel, expensive/special fuel, less space than many conventional plants and comparatively small fuel quantity, permitting location near load centres. Radioactive by-products cannot be directly disposed of and transport/capital statements are not correct as framed. Hence (d), (e), (f), (g).

Q78. Which among the following are essential fatty acids?

- (1) Linoleic acid, Linolenic acid and Arachidonic acid
(2) Palmitic acid, Arachidonic acid and Linoleic acid
(3) Myristic acid, Palmitic acid and Linoleic acid
(4) Oleic acid, Myristic acid and Arachidonic acid

Answer: Option (1)

Explanation: Essential fatty acids include linoleic and alpha-linolenic acids; arachidonic acid is often considered conditionally essential. Palmitic, myristic and oleic acids are not essential in the same sense. Hence option (1).

Q79. To accurately measure a wide temperature range from 27°C to -196°C, the quantum thermometer used consists of:

- (1) Gallium quantum dots
- (2) Zinc selenide quantum dots
- (3) Lead selenide quantum dots
- (4) Cadmium selenide quantum dots

Answer: Option (1)

Explanation: The official key selects option (1). Quantum-dot thermometry uses temperature-dependent optical properties of nanoscale materials; the accepted option in this paper is gallium quantum dots.

Q80. Which statements are correct with reference to Docosahexaenoic Acid (DHA)?

- (a) Alpha-linolenic acid can be converted into docosahexaenoic acid in the human body.
- (b) It is an important fatty acid in phospholipids found in the brain and retina.
- (c) It is also known by a common name as mentioned in the paper.
- (d) In tubers/crops, its production may be increased by 15% under the cited condition.

Choose the correct answer:

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

Answer: Option (1)

Explanation: The official key accepts (a), (b) and (c). DHA is an omega-3 fatty acid of high importance in the brain and retina, and it can be biosynthesised to a limited extent from alpha-linolenic acid.

Q81. Consider the following statements about boiling of water:

- (a) In an unclean/rough vessel, air bubbles can form more easily at rough points.
- (b) More air bubbles and water vapour pass through the transition/nucleation points.
- (c) Heating water in a clean vessel may make it possible to heat beyond the normal boiling point because there are fewer trapped-air/nucleation surfaces for bubbles to form.
- (d) Bubble formation is due only to the transition point stated in the paper.

Choose the correct answer:

- (1) (a), (b) and (c)
- (2) (b) and (c)

(3) (a), (b), (c) and (d)

(4) (b), (c) and (d)

Answer: Option (1)

Explanation: Boiling starts easily at nucleation sites such as rough surfaces or trapped air pockets. A very clean vessel may allow superheating because bubble formation is delayed. Thus (a), (b) and (c) are accepted.

Q82. The most dangerous radioactive pollutant among the following is:

(1) Phosphorous-32

(2) Strontium-90

(3) Calcium-40

(4) Sulphur-32

Answer: Option (2)

Explanation: Strontium-90 is especially dangerous because it behaves chemically like calcium and can accumulate in bones, exposing bone marrow to radiation. Hence option (2).

Q83. The molecule acting as a second messenger in the biological system is:

(1) cDNA

(2) cAMP

(3) tRNA

(4) hnRNA

Answer: Option (2)

Explanation: Cyclic AMP (cAMP) is a classic intracellular second messenger used in many hormone and signal-transduction pathways.

Q84. The important function of ionosphere is:

(1) to create rainbow

(2) radio wave propagation to distant places on the earth

(3) blocking of sunlight

(4) blocking of sound

Answer: Option (2)

Explanation: The ionosphere reflects/refracts certain radio waves, enabling long-distance radio communication. It is not responsible for rainbows or blocking sound.

Q85. Fuse in an electric circuit is used to prevent excessive flow of current. A fuse is made up of using:

(1) Tungsten

(2) Duralumin

- (3) Sterling silver
- (4) Alloy of tin and lead

Answer: Option (4)

Explanation: Fuse wire is made of a material with low melting point and suitable resistance. Tin-lead alloy melts when current exceeds safe limits and breaks the circuit.

Q86. Which of the following are true about nanomaterials?

- (a) The properties strongly depend on the surface atoms.
- (b) They have large surface area.
- (c) Nanoparticles have typical sizes > 100 nm.
- (d) We cannot see particles of nanomaterials from the naked eye.

Select the correct answer:

- (1) (a), (b) and (c)
- (2) (a), (c) and (d)
- (3) (b), (c) and (d)
- (4) None of the above

Answer: Option (3)

Explanation: Nanomaterials have very large surface-area-to-volume ratio and are not visible to the naked eye. The usual nanoparticle size is less than 100 nm, so statement (c) is not correct; however the official key selects option (3), following the wording of the paper.

Q87. Consider the following:

- (a) Mica
- (b) Graphite
- (c) Sulphur
- (d) Human body

Which among the above is/are electrical conductors?

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

Answer: Option (3)

Explanation: Graphite conducts electricity due to delocalised electrons, and the human body conducts because of electrolytes/ions in body fluids. Mica and sulphur are insulators. Hence (b) and (d).

Q88. During a hot sunny day people feel cool in the shadow under a big tree because:

- (a) the tree blocks direct sunlight.
- (b) heat from the air is used in evaporation of water by tree leaves, reducing the temperature.

- (c) photosynthesis by tree leaves absorbs energy from sunlight.
(d) tree leaves absorb water vapour from air which is an endothermic process.

The correct answer is:

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

Answer: Option (3)

Explanation: Shade blocks direct solar radiation, transpiration cools the surrounding air by evaporation, and photosynthesis uses solar energy. The fourth statement is not accepted. Hence (a), (b) and (c).

Q89. Match the following polymer products:

Polymer

Uses:

- | | |
|-----------------------------|------------------------|
| (a) Polyethylene | (i) Non-stick surfaces |
| (b) Polyvinyl chloride | (ii) Adhesives |
| (c) Polytetrafluoroethylene | (iii) Water bottles |
| (d) Polyvinyl acetate | (iv) Pipes |

Options for (a), (b), (c), (d):

- (1) (iii), (iv), (i), (ii)
(2) (i), (iv), (ii), (iii)
(3) (ii), (iv), (i), (iii)
(4) (iv), (i), (ii), (iii)

Answer: Option (1)

Explanation: Polyethylene is used for bottles/containers, PVC for pipes, PTFE/Teflon for non-stick surfaces, and polyvinyl acetate for adhesives. Hence option (1).

Q90. A secondary rainbow is always seen with a rainbow.

- (a) A secondary rainbow appears above or outside a primary rainbow.
(b) The secondary rainbow is always fainter than the corresponding primary rainbow.
(c) The order of colours of primary rainbow and secondary rainbow are opposite.
(d) A secondary rainbow is only a refraction of a primary rainbow.

Correct statement(s):

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

Answer: Option (3)

Explanation: A secondary rainbow forms by two internal reflections in raindrops, appears outside the primary rainbow, is fainter, and has reversed colour order. It is not merely refraction of the primary

rainbow. Hence (a), (b), (c).

Q91. Iodex is:

- (1) Methyl salicylate
- (2) Ethyl salicylate
- (3) Acetylsalicylic acid
- (4) Ortho-hydroxy benzoic acid

Answer: Option (1)

Explanation: Iodex-type pain balms contain methyl salicylate as a rubefacient/analgesic ingredient. Acetylsalicylic acid is aspirin.

Q92. Aditya-L1 is the first Indian space-based observatory to study the Sun:

- (1) from a geostationary orbit
- (2) from the first Lyapunov orbit around the Sun
- (3) from a halo orbit around Sun-Earth Lagrangian point
- (4) from the first orbit around the Sun-Earth Lagrange point

Answer: Option (3)

Explanation: Aditya-L1 observes the Sun from a halo orbit around the Sun-Earth L1 Lagrange point, allowing continuous solar observation.

Q93. The scientific objectives of Aditya-L1 mission include:

- (a) study of coronal heating and solar wind acceleration.
- (b) study of solar neutrino oscillation and conversion of solar hydrogen through fusion.
- (c) study of Coronal Mass Ejections (CME) and dynamics of solar atmosphere.

Choose the correct answer:

- (1) Only (a) and (b) are correct
- (2) Only (b) and (c) are correct
- (3) Only (a) and (c) are correct
- (4) (a), (b) and (c) are correct

Answer: Option (3)

Explanation: Aditya-L1 studies solar atmosphere, coronal heating, solar wind acceleration and CMEs. It is not a mission for solar neutrino oscillation studies. Hence (a) and (c).

Q94. In connection with Chandrayaan-2, CLASS refers to:

- (1) an X-ray spectrometer
- (2) a solar X-ray monitor

- (3) an atmospheric compositional explorer
- (4) a dual frequency radar

Answer: Option (1)

Explanation: CLASS stands for Chandrayaan-2 Large Area Soft X-ray Spectrometer, an instrument for studying the Moon's elemental composition using X-rays.

Q95. Consider the following computer memories:

- (a) Main memory
- (b) Cache memory
- (c) Register memory
- (d) Auxiliary memory

Arrange them in decreasing order of accessing speed:

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

Answer: Option (3)

Explanation: Registers are fastest, followed by cache memory, then main memory, and finally auxiliary/secondary memory. Thus the decreasing order is (c), (b), (a), (d).

Q96. Which statements are true about blockchain?

- (a) A blockchain is a centralized digital ledger consisting of records called blocks.
- (b) A blockchain database is managed autonomously using a peer-to-peer network and a distributed timestamping server.
- (c) A blockchain has been described as a value-exchange protocol.

Select the correct answer:

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

Answer: Option (4)

Explanation: Blockchain is generally a distributed, not centralized, ledger. It uses peer-to-peer validation and timestamping, and is often described as a value-exchange protocol. Hence (b) and (c) are conceptually correct, but the official key marks option (4); this solution follows the official key.

Q97. Consider the following statements regarding LASER:

- (a) Laser beam is monochromatic.
- (b) Laser beam is coherent.

- (c) Laser beam is highly divergent.
(d) In the emission of laser beam, stimulated emission is absent.

Which statements are correct?

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

Answer: Option (1)

Explanation: Laser light is highly monochromatic, coherent and directional with low divergence. Stimulated emission is the basic principle of laser operation. Hence only (a) and (b) are correct.

Q98. Which statements are correct with reference to Blue Flag Certification?

- (a) This certification is issued to beaches, estuaries and deltas.
(b) The certification is issued based on 33 criteria and it is an internationally recognised eco-label.
(c) BEAMS is India's own ecolabel for beaches launched in 2020.
(d) Two sites from Karnataka, Kasarkod beach and Padubidri beach, have received Blue Flag certification.

Choose the correct answer:

- (1) All of the above
(2) (a), (b) and (c) only
(3) (b), (c) and (d) only
(4) (c) and (d) only

Answer: Option (3)

Explanation: Blue Flag is an international eco-label based on strict criteria; BEAMS is India's beach management initiative, and Kasarkod and Padubidri beaches in Karnataka received Blue Flag recognition. The category statement in (a) is not accepted as framed. Hence (b), (c), (d).

Q99. As per the National Policy on Biofuels, 2018 and amended in 2022, which of the following are correct goals?

- (a) Setting up second-generation (2G) bio-refineries.
(b) Development of new feedstock for biofuels.
(c) Development of new technologies for conversion of biofuels.
(d) Creating suitable environment for biofuel blending/generation with the main fuel.
(e) Reinforcing ongoing ethanol/biodiesel supplies through increasing domestic production.

Choose the correct answer:

- (1) Only one statement is correct
(2) Only two statements are correct
(3) Only three statements are correct
(4) All the statements are correct

Answer: Option (4)

Explanation: The National Biofuel Policy aims to promote 2G bio-refineries, feedstock development, improved conversion technologies, blending and domestic production of ethanol/biodiesel. Hence all listed goals are correct.

Q100. Under the ‘Recovery of Endangered Species’ component of the Centrally Sponsored Scheme ‘Integrated Development of Wildlife Habitats’, consider the following matches:

- (a) Sangai - Manipur
- (b) Jerdon’s courser - Andhra Pradesh
- (c) Megapode - Andaman and Nicobar
- (d) Hangul - Jammu and Kashmir

Choose the correct answer:

- (1) All matches are correct
- (2) (a) and (d) are correct
- (3) (a), (b) and (d) are correct
- (4) (a), (c) and (d) are correct

Answer: Option (1)

Explanation: Sangai is associated with Manipur, Jerdon’s courser with Andhra Pradesh, Nicobar megapode with Andaman and Nicobar Islands, and Hangul with Jammu and Kashmir. All matches are correct.