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# BIHAR DAROGA

## 1799 MAINS QUESTION PAPER

## WITH EXPLANATION

**ENGLISH MEDIUM** | (27.05.2026)

[ Memory Based ]

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# BPSSC BIHAR SI 1799 MAINS QUESTION ANSWER

## Exam Date- 27.05.2026 Memory Based [English Medium]

**1. Identify the incorrect pair:**

A. Dr. B.R. Ambedkar — Chairman of the Drafting Committee of the Indian Constitution

B. Maulana Abul Kalam Azad — First Education Minister of India

C. Rajkumari Amrit Kaur — First Health Minister of India

D. Acharya Narendra Dev — Founding President of the Communist Party of India

**Answer: D**

**2. Which of the following statements regarding the provisions related to a Money Bill are correct?**

a. It can be introduced only by a minister, either in the Lok Sabha or the Rajya Sabha.

b. It can be introduced only on the recommendation of the President, and requires the Speaker's certification when transmitted to the Rajya Sabha.

c. It can be detained by the Rajya Sabha for a maximum of 14 days.

d. There is a provision for a joint sitting.

e. Defeat of the Money Bill in the Lok Sabha requires the government to resign.

A. b, c and e

B. a, b and c

C. c, d and e

D. a, d and e

**Answer: A**

**3. Which of the following are federal features of the Indian Constitution?**

a. Dual government

b. Single Constitution

c. Supremacy of the Constitution

d. Division of powers

e. Integrated judiciary

f. Bicameral legislature

A. a, b, c and d

B. a, c, d and f

C. b, c, d and e

D. b, d, e and f

**Answer: B**

**4. Which of the following are discretionary powers of the Governor?**

a. Reserving a bill for the consideration of the President.

b. Acting as the administrator of a Union Territory.

c. Power under Schedule IV.

d. Appointment of the Chief Minister and dismissal of the government.

e. Reporting to the President regarding the failure of constitutional machinery in the state.

A. a, b, d and e

B. a, c, d and e

C. b, c, d and e

D. b, d and e

**Answer: A**

**5. Which Article of the Constitution provides that the Prime Minister shall communicate to the President all decisions of the Council of Ministers?**

A. Article 74(1)(a)

B. Article 75(2)

C. Article 78

D. Article 81

**Answer: C**



**6. Match the following: Iron Ore Regions and States**

| List-I (Iron Ore Region) | List-II (State) |
|---|---|
| 1. Gua and Noamundi | i. Chhattisgarh |
| 2. Bailadila | ii. Jharkhand |
| 3. Bellary-Chitradurga | iii. Maharashtra |
| 4. Ratnagiri | iv. Karnataka |

A. 1-ii, 2-i, 3-iv, 4-iii
B. 1-i, 2-ii, 3-iii, 4-iv
C. 1-iv, 2-iii, 3-ii, 4-i
D. 1-iii, 2-iv, 3-i, 4-ii

**Answer: A**

**7. Which of the following statement(s) is/are correct regarding wheat crop in India?**

I. It is the main food crop of the eastern part of the country.
II. It requires bright sunshine during early growth and cool weather at the time of ripening.
III. It requires 50–75 cm of annual rainfall evenly distributed during its growing season.

A. I and II
B. Only II
C. Only III
D. II and III

**Answer: C**

**8. Which of the following statements is not true about the Brahmaputra River?**

A. It originates in Arunachal Pradesh.
B. It is slightly longer than the Indus River.
C. It takes a 'U' turn near Namcha Barwa.
D. Dibang and Lohit rivers join it.

**Answer: A**

**9. Match Column-I (Drought Severity) with Column-II (Indian Region):**

| Column-I (Drought Severity) | Column-II (Indian Region) |
|---|---|
| 1. Extremely drought affected | a. Western coastal region |
| 2. Severely drought affected | b. Coimbatore Plateau |
| 3. Moderately drought affected | c. Western region of Aravalli Hills |
| 4. Drought free | d. Eastern part of Maharashtra |

A. 1-a, 2-b, 3-c, 4-d
B. 1-b, 2-a, 3-d, 4-c
C. 1-d, 2-c, 3-a, 4-b
D. 1-c, 2-d, 3-b, 4-a

**Answer: D**

**10. A group of students was conducting research on the level of water pollution in Delhi. Which institution should the students visit to obtain information about water quality?**

A. Delhi Pollution Control Committee (DPCC)
B. Indian Council of Environmental Research (ICER)
C. National Water Development Agency (NWDA)
D. Central Pollution Control Board (CPCB)

**Answer: A**

**11. Who among the following is responsible for the establishment of Judicial Activism in India?**

I. Justice P. N. Bhagwati
II. Justice V. R. Krishna Iyer
III. Justice Hidayatullah

A. I and III
B. II and III
C. III and I
D. I and II

**Answer: D**

**12. Which Act provides the framework for biodiversity conservation in India?**

A. Forest Conservation Act, 1980
B. Biological Diversity Act, 2002
C. Environment Protection Act, 1986
D. Wild Birds and Animals Protection Act, 1912

**Answer: B**

**13. Which of the following is not a presentation program?**

A. Impress
B. Keynote
C. PowerPoint
D. KSpread

**Answer: D**

**14. Which day is observed as 'National Space Day' in India?**

A. 23 August
B. 25 August
C. 23 September
D. 25 September

**Answer: A**

**15. The Indian scientist who won the 2024 Tata Transformation Fellowship for research in health and agricultural technologies is —**

A. Dr. R. Srinivasan
B. Dr. K. M. Ramaswamy
C. Prof. C. Anandharankrishna
D. Prof. Rajendra Mukhopadhyay

**Answer: C**

**16. Which famous writer from Bihar wrote the novel "Maila Aanchal"?**

A. Ramdhari Singh Dinkar
B. Phanishwar Nath 'Renu'
C. Shivpujan Sahay
D. Devki Nandan Khatri

**Answer: B**

**17. Statement: A Firewall acts as a network filter.**

Conclusions:

I. A firewall is placed on a computer.
II. A firewall works as a wall that provides protection against worms.
A. Only conclusion I is correct.
B. Only conclusion II is correct.
C. Both conclusions I and II are correct.
D. Neither conclusion I nor conclusion II is correct.
**Answer: B**

**18. Udwa Lake, which recently received the status of a 'Ramsar Site', is located in which state?**
A. Bihar
B. Sikkim
C. Tamil Nadu
D. Jharkhand
**Answer: D**

**19. Young mountaineer Nitish Singh hoisted the Indian tricolour on 'Mount Kinabalu', the highest peak of which country?**
A. India
B. Myanmar
C. Nepal
D. Malaysia
**Answer: D**

**20. In 2024, a commemorative postage stamp was issued on the occasion of the 100th birth anniversary of which legendary singer?**
A. Mohammed Rafi
B. Mukesh
C. Mahendra Kapoor
D. Kishore Kumar
**Answer: B**

**21. What is the most common route of administration of Activated Charcoal in clinical settings?**
A. Intravenous (IV)
B. Oral Suspension
C. Subcutaneous Injection
D. Topical Application
**Answer: B**

**22. Match Column-I with Column-II:**

| Column-I | Column-II |
|---|---|
| P. Most electronegative element | I. Nitrogen |
| Q. Element of Group-14 having minimum atomic radius | II. Boron |
| R. Element of Group-13 which is a semiconductor | III. Carbon |
| S. Element of Group-15 which forms triple bond | IV. Fluorine |

A. P-I, Q-III, R-II, S-IV
B. P-IV, Q-III, R-I, S-II
C. P-IV, Q-III, R-II, S-I
D. P-IV, Q-II, R-III, S-I
**Answer: C**

**23. Match the following chemical equations with the types of chemical reactions:**

| Chemical Equation | Type of Chemical Reaction |
|---|---|
| a. $C(s) + O_2(g) \rightarrow CO_2(g)$ | 1. Displacement Reaction |
| b. $CaCO_3(s) \longrightarrow CaO(s) + CO_2(g)$ | 2. Double Displacement Reaction |
| c. $Pb(s) + CuCl_2(aq) \rightarrow PbCl_2(aq) + Cu(s)$ | 3. Decomposition Reaction |
| d. $Na_2SO_4(aq) + BaCl_2(aq) \rightarrow BaSO_4(s) + 2NaCl(aq)$ | 4. Combination Reaction |

A. a-4, b-3, c-1, d-2
B. a-1, b-2, c-3, d-4
C. a-4, b-1, c-2, d-3
D. a-3, b-4, c-1, d-2
**Answer: A**

**24. During the electrolytic refining of copper, the anode, cathode and electrolyte used respectively are —**
A. Impure copper, pure copper, acidified copper sulphate solution
B. Pure copper, impure copper, sulphuric acid
C. Pure copper, impure copper, acidified copper sulphate solution
D. Impure copper, pure copper, distilled water
**Answer: A**

**25. Match the elements given in Column-I with their electronic configuration given in Column-II:**

| Column-I | Column-II |
|---|---|
| 1. Oxygen | a. 2,8,5 |
| 2. Neon | b. 2,6 |
| 3. Aluminium | c. 2,8 |
| 4. Phosphorus | d. 2,8,3 |

A. 1-a, 2-c, 3-b, 4-d
B. 1-b, 2-a, 3-c, 4-d
C. 1-b, 2-c, 3-d, 4-a
D. 1-d, 2-c, 3-b, 4-a
**Answer: C**

**26. Match the physical quantities given in Column-I with the appropriate expressions given in Column-II:**

| Column-I | Column-II |
|---|---|
| i. Work | a. W/t |
| ii. Potential Energy | b. ½mv$^2$ |
| iii. Kinetic Energy | c. F × s |
| iv. Power | d. mgh |

A. i-c, ii-d, iii-b, iv-a
B. i-d, ii-c, iii-c, iv-b
C. i-d, ii-c, iii-b, iv-a
D. i-c, ii-a, iii-b, iv-d

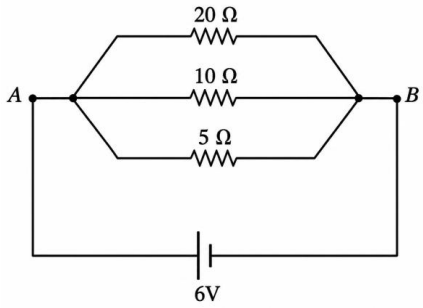
**Answer: A**

**27. A porter lifts a luggage of 15 kg from the ground and places it on his head at a height of 2 m in 5 seconds. Another porter lifts the same luggage to the same height in 10 seconds. Choose the correct option for the above situation.**

A. The first porter did more work
B. The second porter did more work
C. Both porters did equal work
D. The second porter exerted more power than the first porter

**Answer: C**

**28. The current flowing through the 10 Ω resistor in the following circuit is —**




A. 1.2 A
B. 0.6 A
C. 0.2 A
D. 2.0 A

**Answer: B**

**29. Consider the following statements and choose the correct option.**

Assertion (A): $\frac{7a}{2+b} \neq \frac{7a}{2} + \frac{7a}{b}$

Reason (R): The Distributive Law applies to multiplication over addition, not to division over addition.

A. Both (A) and (R) are true and (R) is the correct explanation of (A).
B. Both (A) and (R) are true but (R) is not the correct explanation of (A).
C. (A) is true but (R) is false.
D. (A) is false but (R) is true.

**Answer: A**



**30. Consider the following statements and choose the correct option:**

Statement ($S_1$): If tanθ + cotθ = 2, then $\tan^2\theta + \cot^2\theta = 4$

Statement ($S_2$): If cosec A = √2, then $\frac{2sin^2A + 3cot^2A}{4tan^2A - 2cos^2A} = \frac{4}{3}$

A. Both statements $S_1$ and $S_2$ are true.
B. Statement $S_1$ is true while statement $S_2$ is false.
C. Statement $S_2$ is true while statement $S_1$ is false.
D. Both statements $S_1$ and $S_2$ are false.

**Answer: C**

**31. An urn contains tickets numbered from 13, 14, 15, ..., 40. One ticket is drawn at random. The probability that the number on the drawn ticket is greater than 18 and a multiple of 6 is:**

A. 1/14
B. 3/28
C. 5/28
D. 1/7

**Answer: B**

**32. if $x = \frac{\sqrt{2}+1}{\sqrt{2}-1}$ and $y = \frac{\sqrt{2}-1}{\sqrt{2}+1}$, find the value of $x^2 + y^2 + xy$**

A. 3 + 2√2
B. 3 − 2√2
C. 6
D. 35

**Answer: D**

**33. The total number of terms in the arithmetic progression 213, 205, 197, ....., 37 is:**

A. 21
B. 22
C. 23
D. 24

**Answer: C**

**34. Match List-I related to Articles of the Constitution with List-II related to their provisions and choose the correct answer using the code given below:**

| List-I (Articles of the Constitution) | List-II (Provisions) |
|---|---|
| a. Article 14 | I. The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth or any of them. |
| b. Article 15 | II. The State shall not deny to any person equality before the law or equal protection of the laws within the territory of India. |
| c. Article 16 | III. Untouchability is abolished and its practice in any form is forbidden. |
| d. Article 17 | IV. Equality of opportunity in matters of public employment and appointment to any office under the State. |

A. a-II, b-IV, c-I, d-III
B. a-II, b-I, c-IV, d-III
C. a-II, b-I, c-III, d-IV
D. a-III, b-IV, c-I, d-II

**Answer: B**

**35. Who among the following described democracy as the 'Tyranny of the Majority'?**

A. Rousseau
B. John Dunning
C. De Tocqueville
D. Mark Twain

**Answer: C**

**36. Consider the following statements and choose the correct option from the options given below:**

I. François Bernier had close relations with Prince Dara Shikoh.
II. Bernier travelled to many parts of the country and wrote detailed accounts.
III. He dedicated his major writings to the King of France and Aurangzeb.

A. II and III
B. Only III
C. I and II
D. I, II and III

**Answer: D**

**37. Consider the following statements and choose the correct answer.**

Statement I: By the 1870s, cartoons and caricatures commenting on social and political issues began to appear in Indian magazines and newspapers.
Statement II: Some cartoons praised the attraction of educated Indians towards Western tastes and dresses, while others hoped for social change.

A. Statement I is correct and II is incorrect.
B. Statement I is incorrect and II is correct.
C. Both I and II are incorrect.
D. Both I and II are correct.

**Answer: D**

**38. Faizal wanted to become a follower of Sufism. Identify the qualities from the following that are in accordance with the principles of Sufism and are expected to be adopted by Faizal.**

1. Compassion towards companions
2. Desire for greater power
3. Desire to live a luxurious life
4. Detachment from worldly affairs

A. 1 and 2
B. 2 and 3
C. 3 and 4
D. 1 and 4

**Answer: D**

**39. The _____ and _____ dynasties rose after the Chalukyas.**

A. Cholas and Yadavas
B. Pandyas and Hoysalas
C. Yadavas and Kakatiyas
D. Cholas and Pandyas

**Answer: C**

**40. Which of the following places was not an important trading centre during the Mughal period?**

A. Agra
B. Burhanpur
C. Lahore
D. Golconda

**Answer: D**

**41. Which of the following mentions the irrigation system?**

A. Arthashastra
B. Nitisara
C. Ashtadhyayi
D. Shaddarshana

**Answer: A**

**42. Here are two statements marked as Assertion (A) and Reason (R). Choose the correct answer according to the code given below.**

Assertion (A): Most of the deserts of the world are located on the western margins of continents in the subtropical regions.
Reason (R): Oceanic currents (trade winds) bring moisture from the sea to the eastern coasts, and by the time they reach the western coasts, the moisture content decreases.
A. Both (A) and (R) are correct, but (R) is not the correct explanation of (A).
B. Both (A) and (R) are correct and (R) is the correct explanation of (A).
C. (A) is correct, but (R) is incorrect.
D. (A) is incorrect, but (R) is correct.
**Answer: B**

**43. Match Column I with Column II:**

| Column I (Known As) | Column II (Characteristics) |
|---|---|
| a. Pura | I. Indicates a place where an earlier settlement existed and the main settlement is found around it |
| b. Kalan | II. Used at the end of a village name to describe a larger settlement |
| c. Khurd | III. Used to indicate a smaller settlement |
| d. Kheda | IV. Indicates elevated village land along with small colonies |

A. a-III, b-I, c-IV, d-II
B. a-IV, b-I, c-III, d-II
C. a-II, b-IV, c-I, d-III
D. a-I, b-II, c-III, d-IV
**Answer: D**

**44. Who wrote the book 'Poverty and Un-British Rule in India'?**
A. Gopal Krishna Gokhale
B. R. C. Dutt
C. Dadabhai Naoroji
D. Chittaranjan Das
**Answer: C**

**45. Siachen Glacier, the world's highest battlefield, is part of which mountain range?**
A. Karakoram Range
B. Pir Panjal Range
C. Zanskar Range
D. Dhauladhar Range
**Answer: A**

**46. Which rank in the Indian Navy is equivalent to the rank of Major General in the Indian Army?**
A. Rear Admiral
B. Commodore
C. Vice Admiral
D. Captain
**Answer: A**

**47. In which year did the 'Lota Rebellion' begin in Muzaffarpur district?**
A. 1856
B. 1857
C. 1855
D. 1860
**Answer: A**

**48. Which of the following is not a founder of Airbnb?**
A. Joe Gebbia
B. Amanpreet Singh Bajaj
C. Nathan Blecharczyk
D. Brian Chesky
**Answer: B**

**49. 'Itanagar' is the capital of which of the following states?**
A. Meghalaya
B. Arunachal Pradesh
C. Manipur
D. Mizoram
**Answer: B**

**50. Which state recorded the third highest growth in the transport and communication sector between 2011 and 2024?**
A. Bihar
B. Uttar Pradesh
C. Karnataka
D. Maharashtra
**Answer: A**

**51. Which of the following is not a commonly used DBMS?**
A. Oracle
B. MySQL
C. Microsoft Excel
D. PostgreSQL
**Answer: C**

**52. World Health Day is observed on which day?**
A. 4 April
B. 7 April
C. 10 April
D. 15 April
**Answer: B**

**53. Who is known for the book "Untouchable"?**
A. Mulk Raj Anand
B. Ismat Chughtai
C. R.K. Narayan
D. Kamala Das

**Answer: A**

**54. M is 2 years older than P. L is 2 years older than O. O's age is the average of the ages of L and N, and P's age is the average of the ages of L and M. Also, L's age is the average of the ages of P and O. Who is the youngest?**

A. L
B. M
C. N
D. O

**Answer: C**

**55. In a certain code language, '3a, 2b, 7c' means 'good and tasty', '7c, 9a, 8b' means 'see good pictures' and '9a, 4d, 2b' means 'pictures and faint'. Which of the following codes represents the word 'see'?**

A. 3a
B. 7c
C. 8b
D. 9a

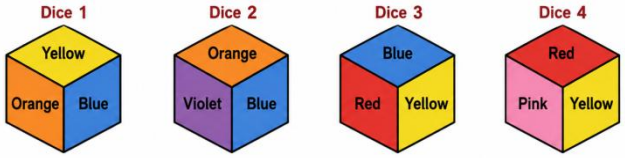
**Answer: C**

**56. If M means 'division', N means 'addition', P means 'subtraction' and B means 'multiplication', then what is the value of the expression 13P13B36M9N17?**

A. −9
B. 21
C. −22
D. 245

**Answer: C**

**57. Four positions of the same dice are shown. Which colour will be opposite to the yellow colour in this dice?**




A. Red
B. Blue
C. Pink
D. Purple

**Answer: D**

**58. Two different positions of the same dice are shown. If the number 5 is on the bottom face of the dice, then which number will appear on the top face?**


A. 6
B. 4
C. 2
D. 3

**Answer: B**

**59. A clock seen in a mirror shows the time as 9:30. What is the correct time?**

A. 2:30
B. 3:30
C. 6:30
D. 5:30

**Answer: A**

**60. Choose the related term from the given options.**

AG : ? :: EK : MS
A. OI
B. JO
C. IO
D. JP

**Answer: C**

**Directions: (61 & 62)**

(i) P + Q means P is the father of Q.
(ii) P − Q means P is the mother of Q.
(iii) P × Q means P is the brother of Q.
(iv) P ÷ Q means P is the sister of Q.
(v) P * Q means P is the son of Q.
(vi) P # Q means P is the daughter of Q.



**61. In the given expression, how is A related to F?**

A + B × C ÷ D * E # F
A. Son
B. Son-in-law
C. Brother
D. Father-in-law

**Answer: B**

**62. In the given expression, how is F related to A?**

A # B − C * D + E ÷ F
A. Brother
B. Sister
C. Brother or Sister
D. Cousin

**Answer: C**

**63. Anuj borrowed ₹8,000 for 2 years at the rate of 10% per annum. The amount will be —**

i. If compound interest is calculated annually.
ii. If compound interest is calculated half-yearly.

A. i. 9,680, ii. 9,746.15
B. i. 9,680, ii. 9,724.05
C. i. 9,860, ii. 9,724.05
D. i. 9,860, ii. 9,764.15

**Answer: B**

**64. A circus motorcyclist performs inside a hollow sphere whose external diameter is 15 m. If the thickness of the sphere is 0.5 m, then the area available to the motorcyclist for performing stunts is:**

A. 308
B. 462
C. 616
D. 2464

**Answer: C**

**65. When two dice are thrown together at random, what is the probability that the sum of the numbers on both dice is 9?**

A. 1/12
B. 1/18
C. 1/9
D. 5/36

**Answer: C**

**66. The factorization of $4x^2 + 9y^2 + 16z^2 - 12xy + 16xz - 24yz$**

A. $(-2x + 3y - 4z)^2$
B. $(2x - 3y - 4z)^2$
C. $(-2x - 3y + 4z)^2$
D. $(2x + 3y - 4z)^2$

**Answer: A**

**67. In the following question, an Assertion (A) is followed by a Reason (R). Choose the correct option:**

**Assertion (A):** A cylinder and a right circular cone have the same base and the same height. The volume of the cylinder is three times the volume of the cone.

**Reason (R):** If the radius of a cylinder is doubled and its height is halved, then its volume becomes double.

A. Both (A) and (R) are true and (R) is the correct explanation of (A).
B. Both (A) and (R) are true but (R) is not the correct explanation of (A).
C. (A) is true but (R) is false.
D. (A) is false but (R) is true.

**Answer: B**

**68. According to Laski, equality means —**

I. Absence of special privileges.
II. Availability of adequate opportunities for all.
III. Everyone should have access to social benefits and no one should be restricted on any ground.
IV. Absence of economic and social exploitation.

A. I, II and III
B. I, II and IV
C. II, III and IV
D. I, II, III and IV

**Answer: D**

**69. Arrange the following events of peasant uprisings in chronological order from earlier to later and choose the correct option.**

1. Barasat Peasant Revolt
2. Sanyasi Rebellion
3. Rangpur Peasant Revolt
4. Pagal Panthi Revolt

A. 3, 4, 1, 2
B. 2, 3, 1, 4
C. 2, 3, 4, 1
D. 4, 1, 2, 3

**Answer: C**

**70. Consider the following statements regarding Buddhism and choose the correct option.**

I. The concept of Bodhisattva is the central feature of the Hinayana sect of Buddhism.
II. A Bodhisattva is a compassionate being on the path to enlightenment.
III. Bodhisattvas attain Nirvana for personal salvation.

A. Only II and III
B. Only II
C. Only I and II
D. I, II and III

**Answer: B**

**71. Which of the following shows the correct chronological order of events related to agricultural development in India?**

I. Permanent Settlement in Bengal
II. Deccan Riots Commission
III. Santhal Revolt
IV. Fifth Report of the Select Committee

A. I, II, III and IV
B. II, III, IV and I
C. III, II, I and IV
D. I, IV, III and II

**Answer: D**

**72. In the context of the role of British officials in India, match Column-II with Column-I using the codes given below:**

| Column-I | Column-II |
|---|---|
| a. Lord Cornwallis | 1. Supervisor |
| b. Augustus Cleveland | 2. Economist |
| c. Francis Buchanan | 3. Governor-General of Bengal |
| d. David Ricardo | 4. Policy of Pacification |

A. a-2, b-1, c-4, d-3
B. a-3, b-1, c-2, d-4

C. a-3, b-4, c-1, d-2
D. a-2, b-3, c-4, d-1
**Answer: C**

**73. Match the following and choose the correct option:**

| List-I (Harappan Site) | List-II (Famous For) |
|---|---|
| 1. Lothal | a. Specialized centre for shell objects |
| 2. Kalibangan | b. Nearby source of carnelian |
| 3. Dholavira | c. Evidence of ploughed field |
| 4. Nageshwar | d. Reservoirs found |

A. 1-b, 2-c, 3-d, 4-a
B. 1-a, 2-d, 3-c, 4-b
C. 1-c, 2-b, 3-d, 4-a
D. 1-d, 2-a, 3-b, 4-c
**Answer: A**

**74. Identify the correct chronological order of the 'Chishti Silsila' from the following options:**
I. Sheikh Nizamuddin Auliya
II. Sheikh Fariduddin Ganj-e-Shakar
III. Sheikh Nasiruddin Chirag-e-Delhi
IV. Sheikh Moinuddin Chishti
A. I, II, III and IV
B. II, III, IV and I
C. III, II, I and IV
D. IV, II, I and III
**Answer: D**

**75. Who received the Pulitzer Prize for Editorial Writing in the year 2024?**
A. Kathleen Kingsbury
B. David E. Hoffman
C. Nikole Hannah-Jones
D. Bret Stephens
**Answer: B**

**76. Who is the author of the "Harry Potter" series?**
A. J.R.R. Tolkien
B. C.S. Lewis
C. J.K. Rowling
D. Roald Dahl
**Answer: C**

**77. The full form of UNSC is:**
A. United Nations Security Council
B. Unified National Saving Certificate
C. Untitled National Search Certificate
D. United National Search Council
**Answer: A**

**78. IFC-IOR stands for:**
A. Information Fusion Centre – Indian Ocean Region
B. Internal Function Centre – Indian Ocean Region
C. International File Centre – Indian Ocean Region
D. Intelligence Function Centre – Indian Ocean Region
**Answer: A**

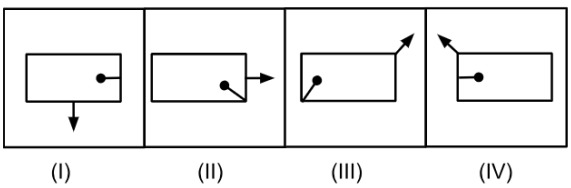
**79. If α means 'greater than', ß means 'equal to', θ means 'not less than', γ means 'less than', δ means 'not equal to' and η means 'not greater than', then choose the correct option for the given statement: C α 2d and 2d θ s**
A. C η s
B. C α s
C. C ß s
D. C γ s
**Answer: B**

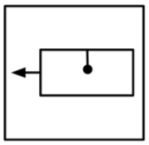
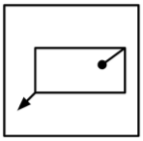
**80. In a certain code language, 'MIKE' is written as '2%#$' and 'KOAL' is written as '#@75'. How will 'AIM' be written in that code language?**
A. 7%2
B. 2%5
C. @25
D. 7#2
**Answer: A**

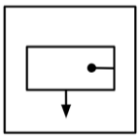
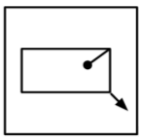
**81. If 'TEACHER' is written as 'KAELRAS' in a coded language, then how will 'CHEATER' be written in the same language?**
A. LAREKAS
B. LRAEKSA
C. LAABRRT
D. LRAEKAS
**Answer: D**

**82. If 'DIAMOND' is coded as 'VQYMKLV', then how can 'FEMALE' be coded?**
A. TUMYNU
B. UVNZOV
C. UVNYNV
D. TVNYNV
**Answer: A**

**83. Choose the figure from the answer figures that will continue the series of the question figure.**

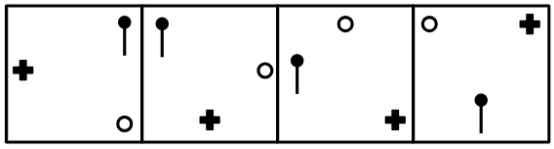


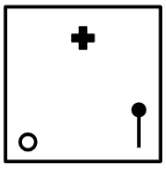
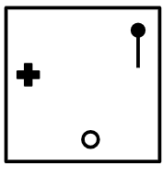

A. 
B. 

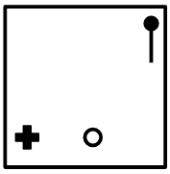
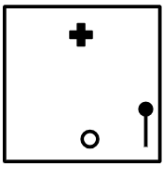
C.  D. 

**Answer: B**

**84. Choose the figure that appropriately completes the series.**



A.  B. 

C.  D. 

**Answer: A**

**85. Here are two statements marked as Assertion (A) and Reason (R). Choose the correct answer according to the code given below.**

Assertion (A): In domestic electric circuits, appliances are connected in parallel rather than in series.

Reason (R): Parallel connection ensures that each appliance receives the same voltage as the main supply and each appliance can operate independently.

A. Both (A) and (R) are true and (R) is the correct explanation of (A).

B. Both (A) and (R) are true, but (R) is not the correct explanation of (A).

C. (A) is true, but (R) is false.

D. (A) is false, but (R) is true.

**Answer: A**

**86. Which of the following is the correct explanation for the bending of a plant towards light?**

I. Production of auxin in the region exposed to light.

II. Production of auxin in the shaded region.

III. Diffusion of auxin into the cells of the shaded region causes cell division.

IV. Diffusion of auxin into the cells of the shaded region causes those cells to elongate.

A. Only I and IV

B. Only II and III

C. Only II and IV

D. Only I and III

**Answer: C**

**87. Here are two statements marked as Assertion (A) and Reason (R). Choose the correct answer according to the code given below.**

**Assertion (A):** The binomial nomenclature system was developed to identify the enormous diversity of organisms around us in a uniform manner.

**Reason (R):** A binomial name consists of two words — the generic name and the specific name.

A. Both (A) and (R) are true and (R) is the correct explanation of (A).

B. Both (A) and (R) are true but (R) is not the correct explanation of (A).

C. (A) is true but (R) is false.

D. (A) is false while (R) is true.

**Answer: A**

**88. Which of the following are functions of ribosomes?**

I. Protein synthesis

II. Formation of enzymes

III. Formation of fats (lipids)

IV. Formation of starch

A. (I) and (IV)

B. (I) and (III)

C. (III) and (IV)

D. (I) and (II)

**Answer: D**

**89. In plants, tendrils are sensitive to which stimulus?**

A. Chemical stimulus

B. Electrical stimulus

C. Touch stimulus

D. Magnetic stimulus

**Answer: C**

**90. Prateek purchased an article for ₹8,400 and sold it for ₹6,384. What is the percentage of loss incurred by him?**

A. 24%

B. 26%

C. 28%

D. 33%

**Answer: A**

**91. A cone of height 12 cm and slant height 13 cm is mounted on a hemisphere having the same radius as that of the cone. The volume of the solid in $cm^3$ is:**

A. 260π

B. 550π/3

C. 486π
D. 320π/3
**Answer: B**

**92. Match the terms given in Column-I with their meanings given in Column-II and choose the correct code as the answer.**

| Column-I | Column-II |
|---|---|
| a. Confidence Building Measures | i. Giving up certain types of weapons |
| b. Arms Control | ii. A process of exchanging information on defence matters between nations on a regular basis |
| c. Alliance Military Attack | iii. A coalition of nations meant to deter or defend against |
| d. Disarmament | iv. Regulates the acquisition or development of weapons |

A. a-ii, b-iv, c-iii, d-i
B. a-ii, b-i, c-iii, d-iv
C. a-ii, b-i, c-iv, d-iii
D. a-iv, b-ii, c-iii, d-i
**Answer: A**

**93. Which of the following statements accurately distinguishes between Majoritarianism and Power Sharing?**

A. Majoritarianism emphasizes the dominance of the majority community, while Power Sharing emphasizes the sharing of power among different groups.
B. Majoritarianism emphasizes the need for consensus building, while Power Sharing emphasizes the exclusion of minority groups.
C. Majoritarianism emphasizes the importance of accommodating minority interests, while Power Sharing emphasizes the need for majority rule.
D. Majoritarianism emphasizes the need for peaceful resolution of conflicts, while Power Sharing emphasizes the use of force to impose the majority's will.
**Answer: A**

**94. Considering the requirement for government formation, which of the following statements is correct?**

Statement I: It is possible for independent candidates to form a government.
Statement II: Government formation is reserved only for political parties.
Statement III: Government formation is limited only to elected political parties.
Statement IV: Government can only be formed by elected political parties having majority support.
A. Statements I and II are correct.
B. Statements I, II and III are correct.
C. Statement III is correct.
D. Statement IV is correct.
**Answer: D**

**95. Two statements are given below, marked as Assertion (A) and Reason (R). Read the statements and choose the correct option.**

Assertion (A): Power sharing can help in preventing conflict in society.
Reason (R): Power sharing ensures that different social groups are included in decision-making processes, reducing marginalization and promoting inclusiveness.
A. (A) is true but (R) is false.
B. (A) is false but (R) is true.
C. Both (A) and (R) are true and (R) explains (A).
D. Both (A) and (R) are true but (R) does not explain (A).
**Answer: C**

**96. Arrange the following in the correct sequence. The process of generating geothermal energy is as follows:**

(i) It becomes so hot that when it rises to the Earth's surface, it turns into steam.
(ii) In such regions (where the geothermal gradient is high), groundwater absorbs heat from rocks and becomes hot.
(iii) This steam is used to drive turbines and generate electricity.
(iv) Geothermal energy exists because the Earth becomes progressively hotter with increasing depth.
A. (iv) → (ii) → (i) → (iii)
B. (ii) → (iv) → (i) → (iii)
C. (i) → (iv) → (iii) → (ii)
D. (iii) → (i) → (iv) → (ii)
**Answer: A**

**97. Mahesh gave his friend clues about the type of soil suitable for growing cotton. Which of the following clues given by Mahesh would be most useful in identifying the ideal type of soil?**

Clues:
i. It is known for its capacity to retain moisture.
ii. It turns yellow after hydration.
iii. It is rich in kankar and bhangar nodules.
iv. It is a well-drained loamy soil.
A. Clue i
B. Clues i and iii

C. Clues i and ii
D. Clue iv
**Answer: A**

**98. Match Column-I with Column-II:**

| Column-I (Types of Clouds) | Column-II (Characteristics) |
|---|---|
| a. Cirrus (Ci), Cirro cumulus (Cc), Cirro stratus (Cs) | I. Layered or puffy, made of liquid water |
| b. Alto cumulus (Ac), Alto stratus (As) | II. Gloomy skies, light drizzle, generally overcast |
| c. Stratus (St), Strato cumulus (Sc), Nimbo stratus (Ns) | III. Thin, white and icy, no rainfall |
| d. Cumulus (Cu), Cumulonimbus | IV. Tall, narrow and puffy |

A. a-I, b-II, c-III, d-IV
B. a-II, b-IV, c-III, d-I
C. a-III, b-I, c-II, d-IV
D. a-IV, b-III, c-II, d-I
**Answer: C**

**99. Which of the following statements are correct about the radial drainage pattern?**

a. Tributaries originating from a peak flow downward following the slope and drain water in all directions.
b. Rivers originating from the Amarkantak Plateau provide a good example of radial drainage pattern.
c. Radial drainage patterns are also found in the Nilgiri Hills.

A. a and c
B. b and c
C. a and b
D. a, b and c
**Answer: D**

**100. Arrange the wetland areas in descending order according to their approximate area in square kilometres.**

a. Vembanad Wetland
b. Chilika Lake
c. Ashtamudi Wetland
d. Sambhar Lake
e. Sundarban

A. a, b, c, d, e
B. e, b, d, c, a
C. a, e, c, b, d
D. e, a, b, d, c
**Answer: D**



**Explanation**

**1.**

Dr. Bhimrao Ramji Ambedkar was one of the most important personalities in the process of framing the Indian Constitution. He was appointed as the Chairman of the Drafting Committee of the Constituent Assembly on **29 August 1947**. Due to his extraordinary contribution to the making of the Indian Constitution, he is widely known as the **"Architect of the Indian Constitution."**

Maulana Abul Kalam Azad was the first Education Minister of independent India. He played a significant role in the development of modern education, scientific thinking, and higher educational institutions in India. During his tenure, institutions such as the **University Grants Commission (UGC)**, **Sahitya Akademi**, **Sangeet Natak Akademi**, and the **Indian Institutes of Technology (IITs)** were established. Every year, **11 November** is celebrated as **National Education Day** in India on the occasion of his birth anniversary.

Rajkumari Amrit Kaur was the first Health Minister of independent India. She made remarkable contributions in the fields of public health, women's health, maternal and child welfare, and medical education. Due to her efforts, the establishment of the **All India Institute of Medical Sciences (AIIMS), New Delhi** became possible.

Acharya Narendra Dev was a prominent socialist thinker, educationist, and freedom fighter of India. He was among the leading figures of the **Congress Socialist Party**. He was associated with the socialist movement in India, not with the foundation of the **Communist Party of India (CPI)**. The Communist Party of India was established in **1925**, and its founding leadership included personalities such as **M.N. Roy**, **S.A. Dange**, and **Muzaffar Ahmed**. Therefore, option D is the incorrect pair.

**2.**

The provisions related to the **Money Bill** are mentioned under **Article 110** of the Indian Constitution. A Money Bill is a bill related to taxation, government expenditure, the Consolidated Fund of India, borrowing of money, or other financial matters. In the Indian parliamentary system, the Money Bill holds special significance because it is directly connected with the government's financial policies and parliamentary responsibility.

Statement (a) is incorrect because a Money Bill can be introduced only in the **Lok Sabha**. There is no provision for introducing it in the Rajya Sabha.

Statement (b) is correct. According to the Constitution, prior recommendation of the **President** is necessary before introducing a Money Bill in the Lok Sabha. Moreover, when it is transmitted to the Rajya Sabha, the **Speaker of the Lok Sabha** certifies that the bill is a Money Bill. The Speaker's decision in this regard is final.

Statement (c) is also correct. The Rajya Sabha can withhold a Money Bill for a maximum period of **14 days**. It can only make recommendations, which may either be accepted or rejected by the Lok Sabha. If the Rajya Sabha does not return the bill within 14 days, it is deemed to have been passed automatically.

Statement (d) is incorrect because there is no provision for a **Joint Sitting** in the case of a Money Bill. Joint Sitting is provided under **Article 108** for ordinary bills.

Statement (e) is correct. In a parliamentary form of government, a Money Bill is associated with the confidence of the government. If the Lok Sabha rejects a Money Bill, it is treated as equivalent to a vote of no confidence, and the government may have to resign.

**3.**

The Indian Constitution is generally described as a Constitution with a **"federal system with a unitary bias."** The framers of the Constitution incorporated both federal and unitary features while considering India's vast geographical size, cultural diversity, and the need for national unity.

The major federal features of the Indian Constitution include **dual government**, **supremacy of the Constitution**, **division of powers**, and **bicameral legislature**.

Dual Government means that governance operates at two levels — the **Central Government** and the **State Governments**. The powers of both are defined by the Constitution.

The **Supremacy of the Constitution** is a fundamental feature of federalism. In India, the Constitution is the supreme law of the land, and both the Union and State Governments function under it. Any law contrary to the Constitution can be declared unconstitutional by the judiciary.

The **Division of Powers** is one of the most important features of Indian federalism. Under the **Seventh Schedule**, powers are divided into the **Union List**,

**State List**, and **Concurrent List**. This arrangement maintains a balance of authority between the Centre and the States.

The **Bicameral Legislature** is also a federal feature. The Parliament consists of two Houses — the **Lok Sabha** and the **Rajya Sabha**. The Rajya Sabha represents the states and strengthens the federal structure.

On the other hand, a **single Constitution** and an **integrated judiciary** are considered unitary features of the Indian Constitution. Unlike countries such as the United States, where states have separate constitutions, India has a single Constitution for most states. Similarly, India follows an integrated judicial system under the leadership of the **Supreme Court of India**.

**4.**

In the Indian Constitution, the Governor is the constitutional head of a state. Generally, the Governor acts on the advice of the Council of Ministers, but in certain situations, he also enjoys **Discretionary Powers**. These powers are mainly mentioned under **Article 163** of the Constitution.

Reserving a bill for the consideration of the President is an important discretionary power of the Governor. If a bill appears to be unconstitutional, affects the powers of the High Court, or involves matters of national importance, the Governor may reserve it for the President's consideration.

In some cases, Governors are also assigned the additional responsibility of serving as the administrator of a **Union Territory**. For example, the Governor of Punjab has often been appointed as the Administrator of Chandigarh. In such situations, the Governor performs a discretionary role.

The appointment of the **Chief Minister** can also become a discretionary function, especially when no political party secures a clear majority in the Legislative Assembly. In such cases, the Governor appoints the leader who is most likely to command the confidence of the House. If the government loses majority support, the Governor may ask the Chief Minister to resign.

In the event of failure of constitutional machinery in a state, the Governor can send a report to the President. This provision is related to **Article 356**, under which **President's Rule** can be imposed. This is also considered an important discretionary power of the Governor.

Statement (c) is incorrect because the **Fourth Schedule** of the Constitution relates to the allocation of seats in the Rajya Sabha among states and Union Territories. It is not related to the discretionary powers of the Governor.

**5.**

**Article 78** of the Indian Constitution deals with the duties of the Prime Minister. According to this Article, it is the duty of the Prime Minister to keep the President informed about all decisions of the Council of Ministers, administrative affairs, and legislative proposals.

India follows a **parliamentary system of government**, in which the President is the constitutional head, while the real executive authority rests with the Council of Ministers. As the head of the Council of Ministers, the Prime Minister acts as the principal link between the President and the Council of Ministers.

The major duties of the Prime Minister under Article 78 include:

• Communicating all decisions of the Council of Ministers to the President.

• Providing information sought by the President.

• Placing before the Council of Ministers any matter decided by an individual minister but not yet considered by the Council.

**Article 74** deals with the advice of the Council of Ministers to the President.

**Article 75** relates to the appointment, tenure, and collective responsibility of ministers.

**Article 81** provides provisions regarding the composition and representation of the Lok Sabha.

**6.**

India is extremely rich in natural resources, and vast reserves of **iron ore** are found in different parts of the country. Iron ore is considered the foundation of the modern industrial economy because it is used in the production of **steel**. The steel industry is regarded as an indicator of industrial development in any country.

In India, iron ore mainly occurs in the form of **hematite** and **magnetite**, among which hematite is the most important.

The major iron ore regions of India are mainly located in **Jharkhand, Odisha, Chhattisgarh, Karnataka, Maharashtra, and Goa**. The development of these regions is closely linked with industrial centres, railway networks, and steel plants.

| Iron Ore Region | Related State | Major Feature |
|---|---|---|

| Iron Ore Region | Related State | Major Feature |
|---|---|---|
| Gua and Noamundi | Jharkhand | High-quality hematite ore |
| Bailadila | Chhattisgarh | Major iron ore exporting region of India |
| Bellary-Chitradurga | Karnataka | Major iron ore region of South India |
| Ratnagiri | Maharashtra | Mineral-rich region of the Konkan coast |

Gua and Noamundi are famous iron ore regions located in the **West Singhbhum district of Jharkhand**. This region forms part of the **Chotanagpur Plateau**, which is considered one of the most important mineral belts of India. High-quality hematite ore is found here, and much of it is used in the **Tata Steel Plant at Jamshedpur**.

The **Bailadila** iron ore region is located in the **Dantewada district of Chhattisgarh**. It is globally famous for its excellent quality iron ore. The mines in this region have mainly been developed by the **National Mineral Development Corporation (NMDC)**. Iron ore from Bailadila is exported to countries such as **Japan** and **South Korea**. The region lies in the **Bastar area** and is one of India's major mineral projects.

The **Bellary-Chitradurga** region in Karnataka is regarded as one of the major iron ore producing regions of South India. Karnataka is among the leading iron ore producing states of India. The Bellary region is well known for iron ore mining and the steel industry. The ore extracted here is used in industries including the **Bhadravati Steel Plant**.

**Ratnagiri**, located in the **Konkan region of Maharashtra**, is also known for iron ore production. Besides mineral resources, the region is important for its ports and maritime trade.

Major iron and steel plants of India such as **Bhilai**, **Bokaro**, **Rourkela**, **Durgapur**, and **Jamshedpur** were established near iron ore producing regions to reduce transportation costs and ensure continuous supply of raw materials.

The iron ore industry plays a vital role in India's economy, export trade, employment generation, and infrastructure development.

**7.**

Wheat is one of the major **Rabi crops** of India and is considered the second most important food crop after rice. India is among the largest wheat-producing countries in the world. Wheat occupies a very important place in the Indian agricultural economy because it serves as a staple food for millions of people and is directly linked with food security.

Wheat cultivation in India is mainly concentrated in **Uttar Pradesh, Punjab, Haryana, Madhya Pradesh, Rajasthan, and Bihar**. Punjab and Haryana are often referred to as the **"Wheat Bowl of India."** After the **Green Revolution**, wheat production increased tremendously, helping India achieve self-sufficiency in food grain production.

| Statement | Status | Explanation |
|---|---|---|
| I | Incorrect | Rice, not wheat, is the main food crop of eastern India. |
| II | Incorrect | Wheat requires cool weather during growth and dry sunny weather during ripening. |
| III | Correct | Annual rainfall of 50–75 cm is considered suitable for wheat cultivation. |

The first statement is incorrect because eastern India — including **West Bengal, Assam, Odisha, and humid regions of Bihar** — receives high rainfall, making rice cultivation more suitable. Rice is the principal food crop of eastern India, whereas wheat is mainly grown in northwestern and semi-arid regions.

The second statement is also incorrect. Wheat requires a **cool and moist climate** during sowing and early growth stages. A temperature of about **10°C to 15°C** is considered suitable for germination and initial growth. During ripening, however, bright sunshine and dry weather are essential. Excess rainfall or humidity at the time of ripening may lead to crop diseases and reduce grain quality.

The third statement is correct. Wheat cultivation generally requires about **50 to 75 cm of annual rainfall**. In areas with lower rainfall, irrigation facilities are used. Canal irrigation, tube wells, and groundwater development have played a significant role in increasing wheat production in India.

The **Green Revolution** in India began during the **1960s**. The introduction of **High Yielding Variety (HYV) seeds**, chemical fertilizers, irrigation facilities, and agricultural machinery led to an unprecedented rise in wheat production. **Dr. M.S. Swaminathan** is regarded as the **Father of the Green Revolution in India**.

Today, India is also emerging as a major exporter of wheat, and wheat production remains extremely important for India's food security, Public Distribution System (PDS), and national economy.

**8.**

The **Brahmaputra River** is one of the major Himalayan rivers of India. In terms of water volume and drainage area, it is among the most significant rivers of the country. The Brahmaputra does not originate in India; rather, its source is considered to be near the **Angsi Glacier** in Tibet. In Tibet, it is known as the **Yarlung Tsangpo**. Therefore, the statement that it originates in Arunachal Pradesh is incorrect.

Flowing eastward across Tibet, the river reaches the eastern end of the Himalayas near the **Namcha Barwa peak**, where it suddenly takes a sharp southward turn. This bend is famous as a **U-shaped turn (Hairpin Bend)** and forms one of the deepest gorges in the world.

After entering India, the river is known as the **Siang** or **Dihang** in Arunachal Pradesh. Further downstream, the **Dibang** and **Lohit** rivers join it, after which it is called the Brahmaputra.

The total length of the Brahmaputra River is approximately **2900 km**, while the **Indus River** is about **2880 km** long. Thus, the Brahmaputra is slightly longer than the Indus.

In the Assam Valley, the river forms extensive alluvial plains and numerous river islands. The **Majuli Island**, the world's largest river island, is situated in the Brahmaputra. After entering Bangladesh, the river is known as the **Jamuna** and eventually joins the **Ganga (Padma)** and **Meghna** rivers before draining into the **Bay of Bengal**.

The Brahmaputra River is extremely important for transportation, agriculture, irrigation, hydroelectric power, and ecology. However, it is also known for causing devastating floods in Assam.

**9.**

India mainly experiences a **monsoon climate**, due to which the distribution of rainfall is highly uneven. Some regions receive excessive rainfall, while others frequently face drought conditions because of inadequate precipitation. Drought severely affects agriculture, water resources, livestock, and the rural economy.

| Drought Category | Related Region | Major Feature |
|---|---|---|
| Extremely drought-prone | Western region of the Aravalli Hills | Low rainfall and desert climate |
| Severely drought-prone | Eastern Maharashtra | Irregular monsoon and rainfall deficiency |
| Moderately drought-prone | Coimbatore Plateau | Rain-shadow region |
| Drought-free | Western Coastal Region | Heavy monsoonal rainfall |

The western region of the **Aravalli Hills**, especially the **Thar Desert** region of Rajasthan, is considered the most drought-prone area of India. Rainfall here is extremely low and highly uncertain. The hot and dry climate frequently leads to drought conditions.

Eastern Maharashtra, especially the **Vidarbha** and **Marathwada** regions, falls under severely drought-prone areas. Irregular monsoons, overexploitation of groundwater, and inadequate irrigation facilities often create agricultural distress in these regions.

The **Coimbatore Plateau** in Tamil Nadu lies in a **rain-shadow region**. Rainfall here is relatively low, though conditions are not extremely severe, and therefore it is categorized as moderately drought-prone.

The **Western Coastal Region**, including Kerala, Karnataka, and areas along the Western Ghats, receives heavy rainfall from the **South-West Monsoon**. Hence, these areas are generally considered drought-free.

To manage drought conditions, India has implemented programmes such as the **Drought Management Programme**, **Pradhan Mantri Krishi Sinchai Yojana**, **Jal Shakti Abhiyan**, watershed development projects, and promotion of micro-irrigation techniques.

**10.**

The **Delhi Pollution Control Committee (DPCC)** is an autonomous organization responsible for monitoring and controlling environmental pollution in the National Capital Territory of Delhi. It primarily deals with water pollution, air pollution, industrial pollution, and waste management.

If students want to obtain information about **water quality** and levels of water pollution in Delhi, they should visit the **DPCC**, as it is the main institution responsible for monitoring, analysis, and control of water pollution in Delhi.

Major functions of the DPCC include:

• Monitoring water and air quality in Delhi.

• Identifying sources of pollution.
• Implementing environmental standards for industries and institutions.
• Setting standards for sewage and industrial waste treatment.
• Conducting Environmental Impact Assessment (EIA).
• Spreading public awareness regarding pollution control.
• Promoting research and development for environmental protection.
About the other options:
• **ICER (Indian Council for Environmental Research)** is not a major statutory pollution control body.
• **NWDA (National Water Development Agency)** was established in **1982**. It works on water resource development, river-linking projects, surveys, and preparation of Detailed Project Reports (DPRs). Its primary objective is water resource development, not pollution control.
• **CPCB (Central Pollution Control Board)** is a central organization established under the **Water (Prevention and Control of Pollution) Act, 1974**. It formulates pollution control policies and standards for the entire country, whereas implementation at the Delhi level is mainly carried out by the DPCC.
The DPCC functions under the Government of Delhi and plays an important role in maintaining environmental quality in the National Capital Region.

**11.**

The concept of **Judicial Activism** in India developed especially during the **1970s and 1980s**. Judicial activism means that the judiciary does not remain confined merely to a narrow interpretation of laws but actively works to protect the spirit of the Constitution, fundamental rights, and social justice.
The credit for establishing and promoting this concept in India mainly goes to **Justice V.R. Krishna Iyer** and **Justice P.N. Bhagwati**. Both judges made the Indian judiciary more sensitive towards the rights of the poor, labourers, prisoners, women, and weaker sections of society.
Justice **V.R. Krishna Iyer** emphasized transforming justice into an instrument of social justice rather than limiting it to technical legal procedures. He delivered landmark judgments related to human rights, prisoners' rights, and labour rights.
Justice **P.N. Bhagwati** played a particularly important role in popularizing **Public Interest Litigation (PIL)**. Due to his efforts, the system evolved in which any individual or organization could approach the court in the interest of weaker sections of society. This made the judiciary more accessible to ordinary citizens.
Important cases associated with judicial activism in India include the **Maneka Gandhi Case (1978)**, **Hussainara Khatoon Case**, **Vishakha Case (1997)**, and the **Kesavananda Bharati Case (1973)**. In these cases, the Supreme Court gave a broad interpretation to **Articles 14, 19, and 21** of the Constitution and strengthened civil liberties.
Justice **Hidayatullah** was a distinguished Chief Justice of India, but he is not considered among the principal pioneers of judicial activism.

**12.**

India is one of the world's richest countries in terms of **biodiversity**. The country possesses diverse ecosystems such as the **Himalayan region**, **Western Ghats**, deserts, mangrove forests, tropical rainforests, and marine ecosystems. Biodiversity includes plants, animals, microorganisms, and their genetic resources.
To ensure the conservation, sustainable use, and equitable sharing of benefits arising from biological resources, the **Biological Diversity Act, 2002** was enacted in India. This Act was introduced to implement the objectives of the **Convention on Biological Diversity (CBD), 1992** adopted by the United Nations.
Under this Act, the **National Biodiversity Authority (NBA)** was established, with its headquarters in **Chennai**. In addition, **State Biodiversity Boards** and **Biodiversity Management Committees** at the local level were also formed.
The purpose of this law is not only to conserve biological resources but also to protect the traditional knowledge of local communities and tribal groups. The Act also regulates the uncontrolled use of Indian biological resources by foreign companies.
The **Forest Conservation Act, 1980** mainly deals with forest conservation.
The **Environment Protection Act, 1986** was enacted for broader environmental protection.
The **Wild Birds and Animals Protection Act, 1912** was an old law from the British period, which was later replaced by modern legislation.
India also implements several biodiversity conservation programmes such as **National Parks**, **Wildlife Sanctuaries**, **Biosphere Reserves**, **Project Tiger**, **Project Elephant**, and the **Ramsar Wetland Conservation Programme**.

**13.**

Presentation programs are software applications used for creating **slide-based presentations**. They are widely used in education, business, training, government presentations, and online meetings.

**Microsoft PowerPoint** is the world's most popular presentation software. It is a part of the **Microsoft Office Suite** and allows users to create attractive presentations using text, images, audio, video, graphs, and animations.

**Impress** is an open-source presentation software that is part of **LibreOffice**. It provides facilities for slide creation, animation, and multimedia presentations similar to PowerPoint.

**Keynote** is a presentation software developed by **Apple Inc.** It is mainly used on macOS and iOS devices and is known for its attractive design and graphical presentation features.

In contrast, **KSpread** is not a presentation software. It was a spreadsheet program that formed part of the **KOffice Suite**. It was used for data analysis, table creation, calculations, and statistical work. Later, it evolved into **Calligra Sheets**.

Computer application software is generally categorized into different types:

- **Word Processing Software** – MS Word
- **Spreadsheet Software** – MS Excel, KSpread
- **Presentation Software** – PowerPoint, Impress, Keynote
- **Database Software** – MS Access

**14.**

Every year, **23 August** is celebrated in India as **National Space Day**. This day commemorates a historic achievement in India's space history.

On **23 August 2023**, India's **Chandrayaan-3 mission** successfully landed near the **south pole of the Moon**. With this achievement, India became the **first country in the world** to successfully achieve a soft landing in the lunar south polar region. India also became the **fourth country** after the **United States, Russia, and China** to achieve a successful soft landing on the Moon.

The **Indian Space Research Organisation (ISRO)** conducted the Chandrayaan-3 mission. The mission mainly consisted of three components:

- **Propulsion Module**
- **Vikram Lander**
- **Pragyan Rover**

The **Vikram Lander** was named in honour of **Dr. Vikram Sarabhai**, who is regarded as the **Father of the Indian Space Programme**. The **Pragyan Rover** carried out chemical and mineralogical studies on the lunar surface.

To commemorate this historic achievement, the Government of India declared **23 August** as **National Space Day** in order to encourage interest among youth in science, technology, and space research.

Some major space missions of India include:

- **Aryabhata (1975)** – India's first satellite
- **Chandrayaan-1 (2008)** – Discovery of water molecules on the Moon
- **Mangalyaan (2013)** – India became the first country to reach Mars orbit in its first attempt
- **Chandrayaan-3 (2023)** – Successful landing near the lunar south pole

India's space programme plays an extremely important role in communication, weather forecasting, disaster management, defence, agriculture, and education.

**15.**

Prof. **C. Ananthanarayanan Krishna** was honoured with the **Tata Transformation Prize/Fellowship 2024**. He received this recognition for his innovations and research related to **healthcare, nutrition, sustainable energy, and low-cost RSV Vaccine (Respiratory Syncytial Virus Vaccine)** development. This award is given to encourage scientific research and socially impactful innovations. Prof. Ananthanarayanan's work has mainly focused on technologies that help deliver healthcare services to a larger population at low cost.

**RSV (Respiratory Syncytial Virus)** is a virus that primarily causes respiratory infections among children and elderly people. In developing countries, the development of affordable vaccines is considered extremely important for public health.

In recent years, India has emerged rapidly in the fields of **biotechnology, vaccine research, and healthcare innovation**. During the **COVID-19 pandemic**, India played a major role in vaccine production and global health cooperation.

Several institutions have significantly contributed to promoting achievements in science and technology in India, including:

- **Department of Science and Technology (DST)**
- **Department of Biotechnology (DBT)**
- **Council of Scientific and Industrial Research (CSIR)**
- **Indian Council of Medical Research (ICMR)**

To encourage scientific research in India, various national and international awards are presented from time to time with the objective of promoting innovation-driven development and sustainable technology.

**16.**

The famous Hindi novel **"Maila Anchal"** was written by **Phanishwar Nath 'Renu'**. This novel is considered one of the most important and representative works of the **regional (Aanchalik) tradition** in Hindi literature. It was published in **1954**.

Phanishwar Nath Renu was born in the village of **Aurahi Hingna** in the **Purnia district (now Araria district) of Bihar**. Through his writings, he vividly portrayed rural life, folk culture, social inequality, political changes, and the struggles of common people.

"Maila Anchal" is regarded as the first major regional novel in Hindi literature. The novel presents a realistic depiction of rural Bihar, post-independence social conditions, poverty, illiteracy, caste-related issues, and village politics. Its setting is mainly associated with the **Mithila and Purnia regions of Bihar**.

Phanishwar Nath Renu was also associated with the **Indian freedom movement** and the **democratic movement of Nepal**. His literary style clearly reflects the influence of local dialects, folk songs, and rural culture.

Some other important works of Renu include:

- **Parti Parikatha**
- **Deerghatapa**
- **Julus**
- **Thumri**

The other writers mentioned in the options are also important figures in Hindi literature:

- **Ramdhari Singh Dinkar** was famous as the **"Rashtrakavi"** and his major works include **Rashmirathi** and **Urvashi**.
- **Shivpujan Sahay** was a renowned Hindi prose writer.
- **Devaki Nandan Khatri** is famous for the fantasy novel **Chandrakanta**.

**17.**

A **Firewall** is an important tool for computer network security. It is a hardware- or software-based security system that monitors and controls incoming and outgoing network traffic. Its primary function is to prevent **unauthorized access** and provide a security barrier between secure and insecure networks.

The given statement says that a firewall works as a **network filter**. This means that it examines data packets and decides which traffic should be allowed and which should be blocked.

Conclusion I is not correct because a firewall is not installed only on a single computer. It can be implemented on personal computers, servers, network devices, or even at the level of an entire organizational network. Therefore, the statement that a firewall "is placed on one computer" cannot be conclusively inferred.

Conclusion II is correct. A firewall plays an important role in protecting systems from harmful programs, viruses, malware, and especially network-based **worms**. By blocking suspicious traffic, it helps maintain network security.

Apart from firewalls, other important cybersecurity measures include:

- **Antivirus Software**
- **Encryption**
- **Authentication Systems**
- **Intrusion Detection Systems (IDS)**

Today, firewalls are widely used in sectors such as banking, e-governance, e-commerce, defence, and cloud computing.

**18.**

The **Udhwa Lake Bird Sanctuary** is located in the state of **Jharkhand**, India. It is the only bird sanctuary in the state and was recently designated as a **Ramsar Site**.

Udhwa Lake is situated in the **Sahibganj district** and mainly consists of two lakes:

- **Pataura Lake**
- **Brahma Jamalpur Lake**

This area serves as an important habitat for migratory birds. During the winter season, a large number of migratory birds arrive here from **Siberia**, **Central Asia**, and other regions.

A **Ramsar Site** refers to a wetland recognized as a wetland of international importance under the **Ramsar Convention, 1971**, which was held in the city of **Ramsar in Iran**. India is a member country of this convention.

Wetlands in India are extremely important for biodiversity conservation, groundwater recharge, flood control, and maintaining ecological balance.

Other important geographical and environmental features of Jharkhand include:

- **Betla National Park**
- **Palamau Tiger Reserve**

• **Chotanagpur Plateau**
• Major mineral resources such as **coal, iron ore, and mica**
In recent years, many new Ramsar Sites have been recognized in India, which has strengthened wetland conservation efforts.

**19.**

**Mount Kinabalu** is one of the famous mountain peaks of Southeast Asia and is the highest mountain peak in **Malaysia**. Its height is approximately **4,095 meters**. The mountain is located in the state of **Sabah** on the island of **Borneo**.
Young Indian mountaineer **Nitish Singh** hoisting the Indian tricolour on this peak is considered a matter of pride for India. Such achievements play an important role in encouraging adventure sports and mountaineering among the youth.
Mount Kinabalu is situated within **Kinabalu National Park**, which has been designated as a **UNESCO World Heritage Site**. The region is famous for its rich biodiversity, rare plant species, and natural beauty.
Malaysia is an important country in Southeast Asia. Its capital is **Kuala Lumpur**, while **Putrajaya** serves as its administrative capital. Malaysia is divided into two major regions:
• **Peninsular Malaysia**
• **East Malaysia (Borneo Region)**
Some major mountain peaks of the world are:
• **Mount Everest** — Nepal
• **K2 (Godwin Austen)** — Pakistan-occupied Kashmir region
• **Kangchenjunga** — India-Nepal border
• **Mount Kinabalu** — Malaysia
In India, institutions such as the **Himalayan Mountaineering Institute (Darjeeling)** and the **Nehru Institute of Mountaineering (Uttarkashi)** play an important role in promoting mountaineering activities.

**20.**

In the year **2024**, the **Ministry of Culture, Government of India**, along with **India Post**, released a special **Commemorative Postage Stamp** and **Miniature Sheet** on the occasion of the **100th birth anniversary** of legendary playback singer **Mukesh Chand Mathur (Mukesh)**.
The event was organized on **24 July 2024** at the **Rang Bhavan Auditorium of All India Radio, New Delhi**. Union Minister for Culture and Tourism **Gajendra Singh Shekhawat** attended the program as the chief guest. On this occasion, Mukesh's son and noted singer **Nitin Mukesh** also paid a musical tribute while recalling his father's musical journey.
Mukesh was one of the most popular playback singers of Hindi cinema. He became especially famous as the voice of actor **Raj Kapoor**. His singing style was known for its emotional depth, pain, and melodious expression. During his musical career, he sang more than **1,300 songs**.
Some of his famous songs include:
• "Kahin Door Jab Din Dhal Jaye"
• "Dost Dost Na Raha"
• "Jeena Yahan Marna Yahan"
• "Sawan Ka Mahina"
About the other options:
• A commemorative coin was announced in honour of **Mohammed Rafi** on the occasion of his 100th birth anniversary in 2024.
• **Kishore Kumar** was born in 1929, therefore 2024 marked his 95th birth anniversary.
• **Mahendra Kapoor** was a renowned Hindi film singer, but no such commemorative postage stamp was issued in his honour in 2024.

**21.**

**Activated Charcoal** is a special form of carbon mainly used in the treatment of **poisoning** and **drug overdose** cases. It has a highly porous surface, which enables it to adsorb toxic substances and prevent them from spreading inside the body.
In clinical settings, the most common method of administering activated charcoal is in the form of an **oral suspension**. It is mixed with water or another liquid and given to the patient for drinking. It binds toxic substances present in the stomach and intestines, thereby reducing their absorption into the bloodstream.
Activated Charcoal is especially useful in the following conditions:
• **Drug overdose**
• **Consumption of toxic chemicals**
• Certain cases of **food poisoning**
• **Emergency poison treatment**
This treatment is considered most effective when administered within **one hour** of consuming the toxic substance.
Activated Charcoal is not given through **intravenous (IV)** or **subcutaneous injection**, because its function is to adsorb toxins within the digestive system. Similarly, it is generally not used as a **topical application**.

Other important treatment methods used in toxicology include:

- **Gastric Lavage**
- **Antidote Therapy**
- **Hemodialysis**
- **Supportive Care**

Activated Charcoal should only be used under medical supervision and controlled conditions because it is ineffective against certain chemicals and acidic substances.

**22.**

This question is based on the properties of elements in the **Periodic Table**. It involves concepts related to **electronegativity, atomic radius, semiconducting nature, and chemical bonding**.

**P. Most electronegative element — Fluorine (IV)**

**Fluorine** is the most electronegative element in the periodic table. Electronegativity refers to the ability of an atom to attract electrons towards itself in a chemical bond. Fluorine has an electronegativity value of about **4.0 on the Pauling Scale**, which is the highest among all elements. Due to this property, fluorine is considered a highly reactive non-metal.

**Q. Group-14 element having the smallest atomic radius — Carbon (III)**

The important elements of **Group 14** are:

- Carbon (C)
- Silicon (Si)
- Germanium (Ge)
- Tin (Sn)
- Lead (Pb)

Atomic radius increases from top to bottom within a group because the number of electron shells increases. Since carbon is the topmost element in this group, it has the smallest atomic radius.

**R. Group-13 element that is a semiconductor — Boron (II)**

Group-13 elements include boron, aluminium, gallium, etc. Among them, **Boron** is a **metalloid** and exhibits **semiconducting properties**.

Semiconductors are widely used in electronic devices, transistors, diodes, and computer chips.

**S. Group-15 element that forms a triple bond — Nitrogen (I)**

Two atoms of nitrogen form a strong **triple bond** in the molecule $\mathbf{N_2}$, represented as **N≡N**. This bond is extremely strong, due to which atmospheric nitrogen remains comparatively less reactive under normal conditions.

Thus, the correct matching is:

- **P → IV (Fluorine)**
- **Q → III (Carbon)**
- **R → II (Boron)**
- **S → I (Nitrogen)**

**23.**

**Chemical reactions** are processes in which the chemical properties of reactants change to form new substances. Reactions are classified into different types based on their nature and products formed.

**a. $C(s) + O_2(g) \rightarrow CO_2(g)$**

In this reaction, carbon and oxygen combine to form a single product, carbon dioxide. When two or more substances combine to form one new substance, the reaction is called a **Combination Reaction**.

Thus:

**a → 4 (Combination Reaction)**

**b. $CaCO_3(s) \longrightarrow CaO(s) + CO_2(g)$**

In this reaction, calcium carbonate breaks down on heating to form calcium oxide and carbon dioxide. When one compound decomposes into two or more simpler substances, it is called a **Decomposition Reaction**.

This is an example of **Thermal Decomposition** because heat is used in the process.

Thus:

**b → 3 (Decomposition Reaction)**

**c. $Pb(s) + CuCl_2(aq) \rightarrow PbCl_2(aq) + Cu(s)$**

In this reaction, the more reactive metal lead (Pb) displaces the less reactive metal copper (Cu) from its compound. Such a reaction is called a **Displacement Reaction**.

According to the **Reactivity Series**, a more reactive metal can displace a less reactive metal from its salt solution.

Thus:

**c → 1 (Displacement Reaction)**

**d. $Na_2SO_4(aq) + BaCl_2(aq) \rightarrow BaSO_4(s) + 2NaCl(aq)$**

In this reaction, ions from two compounds exchange places and form a white precipitate of **Barium Sulphate ($BaSO_4$)**. Such reactions are known as **Double Displacement Reactions**.

This is also an example of a **Precipitation Reaction** because an insoluble solid is formed.

Thus:

**d → 2 (Double Displacement Reaction)**

**24.**

Electrolytic Refining is an important electrochemical process used for purifying metals. This method is

mainly used for refining metals like copper, silver, gold, and zinc.
In the electrolytic refining of copper:
• Impure copper is used as the anode.
• A thin sheet of pure copper is used as the cathode.
• Acidified copper sulphate solution is used as the electrolyte.
When electric current passes through the solution, impure copper from the anode dissolves into the solution as copper ions:
$Cu \rightarrow Cu^{2+} + 2e^-$
These copper ions move towards the cathode and get deposited there as pure copper:
$Cu^{2+} + 2e^- \rightarrow Cu$
During this process:
• Insoluble impurities settle at the bottom as anode mud.
• Soluble impurities remain dissolved in the electrolyte.
Important precious metals such as:
• Gold
• Silver
• Platinum
can also be recovered from the anode mud.
Copper is an excellent conductor of electricity, so it is widely used in:
• Electrical wires
• Motors
• Generators
• Electronic devices
Because industries require highly pure copper, electrolytic refining has great industrial importance.

**25.**

The electronic configuration of an element shows the arrangement of electrons in different shells or energy levels of an atom. This distribution is explained on the basis of Bohr's atomic model.
Oxygen has atomic number 8, so it contains 8 electrons. Its electronic configuration is:
2,6
Therefore:
1 → b
Neon has atomic number 10 and is a noble gas with a completely filled outer shell. Its configuration is:
2,8
Therefore:
2 → c
Aluminium has atomic number 13. Its electronic configuration is:
2,8,3
Aluminium is a lightweight metal used in aircrafts, electrical wires, and household appliances.
Therefore:
3 → d
Phosphorus has atomic number 15. Its electronic configuration is:
2,8,5
Phosphorus is important in DNA, fertilizers, and living cells.
Therefore:
4 → a
Thus, the correct matching is:
• 1 → b
• 2 → c
• 3 → d
• 4 → a
Electronic configuration helps determine:
• Chemical properties
• Valency
• Reactivity
• Position in the periodic table

**26.**

In Physics, work, energy, and power are important concepts of mechanics. These concepts help in understanding motion, force, and energy transformation.
Work is done when a force causes displacement in an object. The formula of work is:
$W = F \times s$
where:
• F = Force
• s = Displacement
Therefore, Work matches with c.
Potential Energy is the energy stored in an object because of its position or height. Its formula is:
$PE = mgh$
where:
• m = mass
• g = acceleration due to gravity
• h = height
Therefore, Potential Energy matches with d.
Kinetic Energy is the energy possessed by an object due to motion. Its formula is:
$KE = 1/2\ mv^2$
where:
• m = mass
• v = velocity
Therefore, Kinetic Energy matches with b.
Power is the rate of doing work. Its formula is:
$P = W/t$

where:
• W = Work
• t = Time
Therefore, Power matches with a.
Thus, the correct matching is:
• i → c
• ii → d
• iii → b
• iv → a
According to the Law of Conservation of Energy, energy can neither be created nor destroyed; it can only change from one form to another.

**27.**
In Physics, work done is calculated using the formula:
W = mgh
where:
• m = mass
• g = acceleration due to gravity
• h = height
In this question, both porters:
• Lift the same mass (15 kg)
• Raise it to the same height (2 m)
Therefore, both perform equal work.
For the first porter:
W = 15 × 9.8 × 2
For the second porter:
W = 15 × 9.8 × 2
Hence, both do equal work.
However, they take different times. The first porter takes 5 seconds, while the second porter takes 10 seconds. This affects power.
The formula of power is:
P = W/t
Since the first porter completes the same work in less time, his power is greater. The second porter takes more time, so his power is less.
Thus:
• Work — Equal for both porters
• Power — Greater for the first porter

**28.**
This question is based on a well-known electric circuit from the Class 10 Science chapter **"Electricity."**
In the given circuit, the three resistors — **20 Ω, 10 Ω, and 5 Ω** — are connected in **parallel combination**. In a parallel combination, the potential difference (voltage) across each resistor remains the same.
The battery in the circuit provides a voltage of **6 V**. Therefore, the potential difference across the **10 Ω resistor** is also **6 V**.
According to **Ohm's Law**:
V = IR
Therefore,
I = V/R
Here:
• V = 6 V
• R = 10 Ω
So,
I = 6/10 = 0.6 A
Thus, the current flowing through the **10 Ω resistor** is **0.6 A**.
Main characteristics of parallel combination:
• The voltage across each branch remains the same.
• Total current gets divided among different branches.
• Equivalent resistance is less than the smallest resistor in the circuit.
Parallel combination is commonly used in household wiring so that all electrical appliances can work independently.

**29.**
In Algebra, the **Distributive Law** is an important mathematical rule. It states that multiplication can be distributed over addition or subtraction.
For example:
a × (b + c) = ab + ac
However, this rule does not apply to division.
Therefore:
a/(b + c) ≠ a/b + a/c
Based on this concept, the given statement:
7a/(2 + b) ≠ 7a/2 + 7a/b
is correct.
This can also be verified numerically. Let:
a = 2 and b = 2
Then,
LHS = 7×2/(2 + 2)
= 14/4
= 3.5
Whereas,
RHS = 14/2 + 14/2
= 7 + 7
= 14
Both values are not equal. Hence, Assertion (A) is true. Reason (R) is also true because the distributive law applies only to multiplication over addition or subtraction, not to division. Therefore, Reason (R) correctly explains Assertion (A).

**30.**
First, let us verify Statement $S_1$.
Given:
tanθ + cotθ = 2

Squaring both sides:
$(\tan\theta + \cot\theta)^2 = 2^2$
$\tan^2\theta + \cot^2\theta + 2\tan\theta\cdot\cot\theta = 4$
We know that:
$\tan\theta \times \cot\theta = 1$
Therefore,
$\tan^2\theta + \cot^2\theta + 2 = 4$
$\tan^2\theta + \cot^2\theta = 2$
But the statement says:
$\tan^2\theta + \cot^2\theta = 4$
which is incorrect. Hence, Statement $S_1$ is false.
Now consider Statement $S_2$.
Given:
$\text{cosec } A = \sqrt{2}$
We know that:
$\text{cosec } 45° = \sqrt{2}$
Therefore, $A = 45°$
Now,
$\sin45° = 1/\sqrt{2}$
$\Rightarrow \sin^2 45° = 1/2$
$\cos45° = 1/\sqrt{2}$
$\Rightarrow \cos^2 45° = 1/2$
$\tan45° = 1$
$\Rightarrow \tan^2 45° = 1$
$\cot45° = 1$
$\Rightarrow \cot^2 45° = 1$
Substituting these values into the given expression:
$(2\sin^2A + 3\cot^2A)/(4\tan^2A - 2\cos^2A)$
$= [2(1/2) + 3(1)] / [4(1) - 2(1/2)]$
$= (1 + 3)/(4 - 1)$
$= 4/3$
This matches the value given in the statement.
Therefore, Statement $S_2$ is true.
Thus:
• Statement $S_1$ is false.
• Statement $S_2$ is true.
Hence, the correct option is **C**.

**31.**

Total number of tickets = 40 − 13 + 1
= 28
Numbers greater than 18 and multiples of 6 are:
24, 30, 36
Number of favourable outcomes = 3
Probability = Favourable outcomes / Total outcomes
= 3/28
Therefore, the correct answer is **3/28**.

**32.**

$x = \frac{\sqrt{2}+1}{\sqrt{2}-1}$, $y = \frac{\sqrt{2}-1}{\sqrt{2}+1}$, xy = 1

$$x + y = \frac{\left[(\sqrt{2}+1)^2 + (\sqrt{2}-1)^2\right]}{\left[(\sqrt{2}+1)(\sqrt{2}-1)\right]}$$

$$= \frac{\left[(2 + 1 + 2\sqrt{2}) + (2 + 1 - 2\sqrt{2})\right]}{[2 - 1]}$$

$$= \frac{3 + 2\sqrt{2} + 3 - 2\sqrt{2}}{1}$$

= 6
$x^2 + y^2 + xy$
$= (x + y)^2 - 2xy + xy$
$= 6^2 - 2(1) + 1$
= 36 − 2 + 1
= 35

**33.**

**33.**

First term, a = 213
Common difference, d = 205 − 213
= −8
Last term, an = 37
Formula for the nth term of an Arithmetic Progression (AP):
an = a + (n − 1)d
Substituting the values:
37 = 213 + (n − 1)(−8)
37 − 213 = −8(n − 1)
−176 = −8(n − 1)
n − 1 = 22
n = 23
Therefore, the total number of terms = **23**.

**34.**

The **Fundamental Rights** mentioned in **Part III** of the Indian Constitution are considered the foundation of Indian democracy. These rights aim to provide social, political, and legal equality to citizens. Articles **14 to 18** specifically deal with the **Right to Equality**, which plays a crucial role in establishing India as a democratic, secular, and egalitarian state.
**Article 14** guarantees **"Equality before Law"** and **"Equal Protection of Laws."** It means that the State cannot act arbitrarily against any individual. This principle has been inspired by the British concept of **Equality before Law** and the American concept of **Equal Protection of Laws**. Therefore, Article 14 correctly matches with Statement II.
**Article 15** prohibits discrimination by the State on grounds of religion, race, caste, sex, or place of birth. At the same time, it permits the State to make special provisions for women, children, and socially and educationally backward classes. This Article

strengthens the idea of social justice. Hence, Article 15 correctly matches with Statement I.

**Article 16** provides equality of opportunity in matters of public employment and government appointments. It ensures equal access to public offices and also allows reservation for Scheduled Castes, Scheduled Tribes, and backward classes. Thus, it promotes both administrative equality and social representation. Therefore, Article 16 correctly matches with Statement IV.

**Article 17** abolishes untouchability and declares its practice in any form as a punishable offence. To implement this provision effectively, Parliament enacted the **Untouchability (Offences) Act, 1955**, later renamed as the **Protection of Civil Rights Act, 1976**. This Article is extremely important for ensuring social equality and human dignity. Hence, Article 17 correctly matches with Statement III.

Thus, the correct matching is:

• a → II
• b → I
• c → IV
• d → III

The Right to Equality in the Indian Constitution is not limited only to legal equality but also aims to eliminate social discrimination and establish a more just democratic order.

**35.**

French political thinker **Alexis de Tocqueville** introduced the concept of **"Tyranny of the Majority"** in the context of democracy. He explained this idea in detail in his famous work **"Democracy in America" (1835–1840)**.

Tocqueville believed that in a democratic system, excessive concentration of power in the hands of the majority could lead to the suppression of minority rights and opinions. If the majority misuses its authority, it may threaten intellectual freedom and individual liberties. This situation was described by him as the **"tyranny of the majority."**

Democracy is fundamentally based on popular sovereignty and representation, but modern democratic systems recognize that majority rule alone is not sufficient. Therefore, mechanisms such as a **Constitution, Fundamental Rights, an Independent Judiciary, Federalism, and Rule of Law** are established to safeguard the rights of minorities and weaker sections of society.

**Jean-Jacques Rousseau** is known for the concept of the **"General Will."**

**Mark Twain** was an American writer and humorist.

**John Dunning** was a British political figure, but the concept of "tyranny of the majority" is not associated with him.

In the Indian constitutional framework also, several provisions limit the unchecked power of the majority, such as—

• Fundamental Rights
• Judicial Review
• Federal Structure
• Independent Election Commission

These constitutional safeguards help maintain democratic balance and protect pluralism in society.

**36.**

**François Bernier** was a French physician, political philosopher, and historian who stayed in India between **1656 and 1668** during the later years of **Shah Jahan's reign** and the Mughal War of Succession.

• Bernier had close relations with the Mughal prince **Dara Shikoh** and even served as his personal physician. Therefore, Statement I is correct.

• During his nearly twelve-year stay in India, he travelled extensively across regions such as **Delhi, Agra, Kashmir, Bengal, and Ahmedabad**. He recorded his observations about Mughal administration, social conditions, economy, and political life in his famous work **"Travels in the Mughal Empire."** Hence, Statement II is also correct.

• Bernier dedicated his major writings primarily to **King Louis XIV of France**. After the death of Dara Shikoh, he remained associated with the Mughal court during the reign of **Aurangzeb**, and his accounts contain important references to Aurangzeb's policies and the Mughal administrative system. Therefore, Statement III is also considered correct.

In **NCERT Class 12 History** under the chapter **"Through the Eyes of Travellers" (Themes in Indian History – Part II)**, Bernier's writings are described as an important source for understanding Mughal India. His accounts provide valuable information regarding—

• Land revenue system
• Royal court and nobility
• Social structure
• Trade and economy
• Mughal succession conflicts

Bernier's writings are regarded as one of the most significant European accounts for studying seventeenth-century Mughal India.

**37.**

During the late nineteenth century, modern newspapers and journals developed rapidly in India. By the **1870s**, caricatures and political cartoons had started appearing regularly in Indian newspapers and magazines. Therefore, Statement I is correct.

Cartoons became an effective medium for commenting on society and politics. Through these illustrations, issues related to British rule, social evils, modern education, Western culture, and social changes in Indian society were highlighted.

Some cartoons praised educated Indians for adopting Western dress, language, and lifestyle as symbols of modernity. At the same time, several cartoons emphasized the need for social reforms, women's education, opposition to caste discrimination, and broader social transformation. Hence, Statement II is also correct.

During this period, many important socio-religious reform movements emerged in India, such as—

• Brahmo Samaj
• Arya Samaj
• Prarthana Samaj
• Aligarh Movement

Newspapers and journals played a crucial role in spreading the ideas of these reform movements among the people.

In colonial India, the press contributed significantly to the growth of national consciousness, social reform, and political awareness.

**38.**

**Sufism** is regarded as the mystical tradition of Islam, whose primary aim was devotion to God, service to humanity, spiritual purity, and detachment from worldly desires. Sufi saints emphasized inner purity and spiritual experience rather than external rituals and formalities.

The teachings of Sufism strongly promoted values such as—

• Love
• Compassion
• Tolerance
• Service to humanity
• Brotherhood
• Renunciation

Therefore, "compassion towards companions" is an important principle of Sufism.

Sufi saints generally stayed away from worldly luxury, political power, and material comforts. They valued simplicity, meditation, devotion to God, and self-discipline. Hence, "detachment from worldly affairs" is also a key characteristic of Sufism.

On the other hand, "desire for greater power" and "luxurious lifestyle" are considered contrary to Sufi ideals. Sufi saints preached freedom from materialism and political ambition.

In India, the Sufi movement became especially popular during the **Delhi Sultanate period**. Major Sufi orders included—

• Chishti Order
• Suhrawardi Order
• Qadiri Order
• Naqshbandi Order

Prominent Sufi saints of India included **Khwaja Moinuddin Chishti, Nizamuddin Auliya, Baba Farid, and Sheikh Salim Chishti**.

The Sufi movement played a major role in promoting religious tolerance, cultural synthesis, and social harmony in Indian society.

**39.**

The **Chalukya dynasty** occupied an important place in the medieval history of South India. The Chalukyas ruled the Deccan region for a long period, and after the decline of the **Western Chalukyas**, several regional powers emerged in South India.

The two major dynasties that rose to prominence after the decline of the Chalukyas were the **Yadavas** and the **Kakatiyas**. Therefore, the correct answer is "Yadavas and Kakatiyas."

The **Yadava dynasty**, also known as the **Seuna dynasty**, had its capital at **Devagiri** (present-day Daulatabad in Maharashtra). The Yadavas established their influence in the Deccan region. One of the prominent rulers of this dynasty was **Ramachandra**. Later, Devagiri was invaded by **Alauddin Khalji**.

The **Kakatiya dynasty** emerged in the present-day Telangana region, with its capital at **Warangal**. The Kakatiya rulers promoted administration, irrigation, and trade in South India. One of the most famous rulers of this dynasty was **Rudramadevi**, who is regarded as one of the prominent female rulers of medieval India.

During the same period, several other important dynasties were also active in South India, including—

• Chola dynasty — Tamil region
• Pandya dynasty — Madurai region
• Hoysala dynasty — Karnataka region

The Chalukyas, Cholas, Pallavas, Pandyas, Yadavas, and Kakatiyas made significant contributions to South Indian art, architecture, temple construction, and regional culture.

**40.**

During the Mughal period, trade and commerce in India were highly developed. Many cities emerged as important centers of internal as well as international trade. The Mughal rulers encouraged commerce through the development of roads, sarais, markets, and an organized administrative system.

**Agra**, being one of the principal capitals of the Mughal Empire, was an important commercial and industrial center. It was famous for textiles, precious stones, metalwork, and handicrafts. European travelers such as **Tavernier** and **Bernier** also described the prosperity of Agra.

**Burhanpur** served as a major commercial link between the Deccan and North India. It was particularly known for its cotton textile industry and cloth trade. Due to its location on important north-south trade routes, it held great economic significance.

**Lahore** was another major commercial city during the Mughal era. It acted as an important center of trade between Central Asia and India. Silk, horses, spices, and luxury goods were traded through this city.

Lahore was also a major cultural and economic center under the Mughals.

In contrast, **Golconda** was not one of the principal trade centers of the Mughal Empire. It belonged mainly to the **Qutb Shahi dynasty** of South India and was famous for its diamond mines. The famous **Koh-i-Noor diamond** is associated with the Golconda region. Although Golconda was economically prosperous, it was not considered one of the chief trading cities of the Mughal Empire.

Major trade items during the Mughal period included—

- Cotton and silk textiles
- Spices
- Indigo
- Sugar
- Opium
- Precious stones

European trading companies such as the **East India Company**, the **Dutch East India Company**, and the **French trading companies** also began participating actively in Indian trade during this period.

**41.**

Detailed references to irrigation systems are found in the **Arthashastra**, which is traditionally attributed to **Kautilya (Chanakya/Vishnugupta)**, the Prime Minister and political advisor of **Chandragupta Maurya**.

The Arthashastra is an important ancient Indian text on politics, economics, and administration. It contains detailed discussions on state administration, taxation, agriculture, irrigation, trade, justice, espionage, and military organization.

Kautilya considered agriculture as the foundation of economic prosperity. He emphasized irrigation systems, canal construction, reservoirs, and dams. The Arthashastra states that it is the duty of the State to ensure adequate water supply for farmers.

During the Mauryan period, artificial irrigation systems were developed to increase agricultural production. The **Sudarshana Lake** is an important example, originally constructed during the reign of Chandragupta Maurya. It was later repaired and reconstructed by the Shaka ruler **Rudradaman**.

**Nitisara** is a political text written by **Kamandaka**.

**Ashtadhyayi** is the famous Sanskrit grammar text composed by **Panini**.

**Shad Darshanas** refer to the six major schools of Indian philosophy.

The Arthashastra is regarded not only as a political treatise but also as an important source for understanding the economic and administrative structure of ancient India.

**42.**

Most of the world's major deserts are located along the western margins of continents in the **subtropical regions**. This is an important principle of climatology.

Examples include—

- Sahara Desert — western part of Africa
- Atacama Desert — western coast of South America
- Kalahari Desert — southern Africa
- Australian Deserts — western Australia

The formation of these deserts is mainly influenced by subtropical high-pressure belts, dry trade winds, and cold ocean currents. Therefore, Assertion (A) is correct.

Reason (R) is also correct. Trade winds generally carry moisture from oceans and cause rainfall on the eastern coasts of continents. As these winds move inland, they gradually lose moisture. By the time they reach the western margins, they become relatively dry.

In addition, cold ocean currents flowing near western coasts stabilize the atmosphere and reduce the chances of rainfall. Examples include—

• Peru Current — Atacama Desert
• Benguela Current — Namib Desert
• Canary Current — Sahara region

Thus, Reason (R) correctly explains Assertion (A).

Major characteristics of desert climate include—

• Very low rainfall
• Extreme difference between day and night temperatures
• Sparse vegetation
• Dry winds

In India, the **Thar Desert** is located in western Rajasthan. Low rainfall, dry climate, and the position of the **Aravalli Range** contribute significantly to desertification in this region.

**43.**

The naming of rural settlements in India reflects important geographical, historical, and social characteristics of a region. Words used in village names often indicate the size, location, settlement history, or social structure of the area.

The term **"Kalan"** is used for a larger village or settlement. It is generally added at the end of a village name. When two villages have the same name, the larger one is identified with "Kalan" and the smaller one with "Khurd." Therefore, "Kalan" correctly matches with Statement II.

The word **"Khurd"** is derived from Persian and means "small." It is used to denote a smaller settlement or village. Hence, "Khurd" correctly matches with Statement III.

The term **"Pura"** generally refers to a place where an older settlement or habitation once existed. It indicates an earlier settlement site. Therefore, "Pura" correctly matches with Statement I.

The word **"Kheda"** is used for small colonies, hamlets, or elevated village land. It is commonly found in rural settlement names in states such as Rajasthan, Haryana, and western Uttar Pradesh. Hence, "Kheda" correctly matches with Statement IV.

Thus, the correct matching is—

• a → I
• b → II
• c → III
• d → IV

The study of rural settlements forms an important part of Human Geography. It provides valuable information about—

• Settlement patterns
• Social structure
• Historical development
• Agriculture and resource utilization

Note: The correct matching is a-I, b-II, c-III, d-IV, but this combination was not available in the original question options. This option has been added by Examdhara as an error correction.

**44.**

The book **"Poverty and Un-British Rule in India"** was written by **Dadabhai Naoroji**. It is considered one of the most important works in the history of Indian economic nationalism. In this book, Naoroji presented a detailed analysis of the economic exploitation of India under British rule.

Dadabhai Naoroji is popularly known as the **"Grand Old Man of India."** He was one of the founding leaders of the **Indian National Congress** and served as its president three times. He was also the first Indian elected to the British Parliament.

In this book, he propounded the famous **"Drain Theory."** According to this theory, India's wealth and resources were continuously being transferred to Britain, leading to increasing poverty in India. He argued that—

• Appointment of British officials to high administrative posts
• Drain of Indian revenues to Britain
• Heavy expenditure on army and administration
• Trade benefits favoring Britain

were weakening the Indian economy.

Dadabhai Naoroji's work provided an ideological foundation for the Indian national movement and strengthened criticism of British economic policies.

**R. C. Dutt** also wrote important works on Indian economic history.

**Gopal Krishna Gokhale** was a moderate leader and social reformer.

**Chittaranjan Das** was a famous freedom fighter and founder of the Swaraj Party.

**45.**

The **Siachen Glacier** is regarded as the world's highest battlefield. It is located in the **Karakoram Range**. The glacier lies in the northern part of the Union Territory of **Ladakh** in India.

Siachen Glacier is approximately **76 kilometers long** and is among the world's longest non-polar glaciers. It holds immense strategic importance because it is situated near the sensitive border regions of India, Pakistan, and China.

India established strategic control over the Siachen region through **Operation Meghdoot** in **1984**. Since then, the Indian Army has remained deployed in extremely harsh climatic conditions in this area.
Major features of the Karakoram Range include—
• Presence of some of the world's highest peaks
• **K2 (Godwin Austen)**, the world's second-highest mountain peak, is located in this range
• The region is famous for its large number of glaciers
The **Pir Panjal** and **Zanskar** are other Himalayan ranges, while the **Dhauladhar Range** is located mainly in Himachal Pradesh.
The Siachen region is known for extreme altitude, snowstorms, and temperatures far below freezing point. Soldiers stationed there face severe natural challenges in addition to military responsibilities.

**46.**

In the Indian Armed Forces, the Army, Navy, and Air Force use different rank titles, but equivalent ranks are officially designated. The rank equivalent to **Major General** in the Indian Army is **Rear Admiral** in the Indian Navy.
A **Rear Admiral** is a **two-star rank** and belongs to the category of senior naval officers.
The equivalent ranks in the three armed forces are as follows—

| Army | Navy | Air Force |
|---|---|---|
| Major General | Rear Admiral | Air Vice Marshal |

The **President of India** is the Supreme Commander of the Indian Armed Forces.
The headquarters of the **Indian Navy** is located in **New Delhi**, and it is headed by the **Chief of Naval Staff (CNS)**. The motto of the Indian Navy is—
**"Sham No Varunah"**
The Indian Navy plays a vital role in safeguarding India's maritime security, protecting trade routes in the Indian Ocean Region, and securing the country's strategic interests.

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**47.**

The **Lota Rebellion** was an important protest movement carried out by prisoners in the **Muzaffarpur Jail** of Bihar. It is regarded as a symbol of resistance against the oppressive rules of British colonial administration.
The main cause of the rebellion was the jail administration's decision to replace the prisoners' **brass lotas (water vessels)** with **earthen pots**. The prisoners considered this a violation of their religious, social, and personal rights.
At that time, brass vessels were not merely utility items but were closely associated with the prisoners' daily lifestyle and social customs. The decision to introduce earthen utensils created deep resentment among the inmates, leading to protests and rebellion inside the jail.
Some historical sources trace the early background of the rebellion to late **1855**, but in most Bihar-related competitive examinations and standard study materials, the year **1856** is accepted as the main year of the rebellion.
The Lota Rebellion is considered an important example of growing anti-British sentiment in Bihar just before the Revolt of 1857. During this period, dissatisfaction against British policies was rapidly increasing across Bihar and northern India.
Major causes behind the Revolt of 1857 included—
• Repressive British policies
• Discontent among soldiers
• Fear of religious interference
• Economic exploitation
• Social unrest
Note: A research paper titled **"Modern Bihar: A Historical Study"** written by Dr. Shyam Murti Bharti, Department of History, Ram Narayan College, Pandaul, Madhubani (Bihar), published in the *International Journal of History (2022)*, also mentions **1856** as the year of the Muzaffarpur Lota Rebellion.
Therefore, most Bihar-related competitive examinations and authentic reference materials accept **1856** as the correct answer. Some sources mention its early background in **1855**, but the rebellion is mainly associated with **1856**.

**48.**

Airbnb is a global online platform through which people rent out their homes, rooms, or other accommodations to travelers. It was founded in **2008**.
The founders of Airbnb are—
• **Brian Chesky**
• **Joe Gebbia**
• **Nathan Blecharczyk**
Therefore, **Amanpreet Singh Bajaj** is not a founder of Airbnb. He has worked in corporate leadership roles associated with Airbnb in India, but he was not a co-founder of the company.
Airbnb was started in **San Francisco, USA**. Initially, the founders offered travelers accommodation by placing air mattresses in their apartment. This led to the name **"Air Bed and Breakfast,"** which was later shortened to **"Airbnb."**

Today, Airbnb operates in many countries around the world and has become an important digital platform in the tourism and hospitality industry. It is considered a major example of the **sharing economy**, where individuals share their personal property or services through digital platforms.

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**49.**

**Itanagar** is the capital of the northeastern Indian state of **Arunachal Pradesh**. The state is located in the northeastern part of India and is the largest state in Northeast India in terms of area.

Arunachal Pradesh shares its borders with—

• China (Tibet) in the north
• Myanmar in the east
• Bhutan in the west
• Assam and Nagaland in the south

The name **Itanagar** is derived from the historic **Ita Fort**. The word "Ita" means "brick." The fort is considered an important historical site of the medieval period.

Arunachal Pradesh is famous for its tribal culture, biodiversity, mountainous landscape, and Buddhist monasteries. Major tribes of the state include—

• Nyishi
• Adi
• Apatani
• Mishmi
• Monpa

Major rivers of the state are—

• Siang
• Subansiri
• Lohit
• Dibang

These rivers later become part of the **Brahmaputra River System**.

The capitals of the other options are—

• Meghalaya — Shillong
• Manipur — Imphal
• Mizoram — Aizawl

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**50.**

Between **2011 and 2024**, **Bihar** recorded the **third-highest growth** in the transport and communication sector. This growth was made possible due to the expansion of roads, railways, telecommunications, internet connectivity, and digital services in the state.

In recent years, Bihar has witnessed rapid development in—

• Expansion of national highways
• Construction of rural roads
• Bridge and flyover projects
• Growth of mobile and internet services
• Digital governance

The transport and communication sector is considered an important indicator of a state's economic development because it—

• Promotes trade and industry
• Increases employment opportunities
• Improves connectivity in rural areas
• Expands education and healthcare services

Schemes such as the **Pradhan Mantri Gram Sadak Yojana**, the **Digital India Programme**, and various railway and road infrastructure projects have contributed significantly to the growth of this sector in Bihar.

The importance of the transport and communication sector in Bihar's economy has been increasing continuously, especially due to the expansion of e-commerce, mobile banking, and online services.

**51.**

A **DBMS (Database Management System)** is software used to **store, organize, manage, and retrieve data**.

**Oracle**, **MySQL**, and **PostgreSQL** are all popular DBMS software systems. They are widely used in websites, banking systems, government institutions, and business organizations.

On the other hand, **Microsoft Excel** is a **spreadsheet program**, not a DBMS. It is mainly used for—

• Creating data tables
• Performing calculations
• Preparing charts
• Statistical analysis

Although data can be stored in Excel, it does not provide advanced DBMS features such as—

• Relational database management
• SQL support
• Multi-user control
• Transaction management
• Data security and normalization

**Oracle DBMS** is mainly used in large enterprises.

**MySQL** is highly popular for web applications and websites.

**PostgreSQL** is an open-source relational DBMS known for its advanced SQL features.

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**52.**

**World Health Day** is celebrated every year on **7 April**. The purpose of this day is to spread awareness

about health issues, disease prevention, hygiene, and better healthcare services across the world.
This day is observed to mark the establishment of the **World Health Organization (WHO)**. WHO was founded on **7 April 1948**. It is a specialized agency of the **United Nations (UN)**, headquartered in **Geneva, Switzerland**.
Major functions of WHO include—
• Formulating global health policies
• Controlling epidemics and pandemics
• Promoting vaccination programs
• Improving maternal and child health
• Creating awareness about nutrition and sanitation
Every year, a special theme is selected for World Health Day. These themes focus on current global health challenges such as—
• Mental health
• Universal healthcare
• Climate change and health
• Control of infectious diseases
• Health equity
In India, several important schemes have been launched to strengthen the healthcare sector, such as—
• Ayushman Bharat Scheme
• National Health Mission (NHM)
• Pradhan Mantri Jan Aushadhi Yojana
• Mission Indradhanush
During the COVID-19 pandemic, WHO played a major role in global health coordination and vaccination awareness.

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**53.**
The novel **"Untouchable"** was written by Mulk Raj Anand. It was published in **1935** and is considered one of the earliest and most important works of Indian English literature.
The novel presents a realistic picture of **untouchability, caste discrimination, and social inequality** in Indian society. The main character of the story is **Bakha**, who belongs to a sweeper community. The author sensitively portrays his daily life, humiliation, and experiences of discrimination.
Mulk Raj Anand was one of the leading novelists of Indian English literature. His writings mainly focused on the problems of poor, laborers, and marginalized sections of society. His other famous works include—
• Coolie
• Two Leaves and a Bud
• The Big Heart
His literary style was influenced by Mahatma Gandhi and various social reform movements.
Other writers mentioned in the options are also important literary figures—
• Ismat Chughtai was a famous Urdu writer known for Lihaaf.
• R. K. Narayan is famous for Malgudi Days and The Guide.
• Kamala Das was a noted writer and poet in English and Malayalam literature.

**54.**
Given—
• M = P + 2
• L = O + 2
• O = (L + N)/2
• P = (L + M)/2
• L = (P + O)/2
Now,
L = O + 2
Let O = x
Then,
L = x + 2
Now,
L = (P + O)/2
x + 2 = (P + x)/2
2x + 4 = P + x
P = x + 4
Now,
M = P + 2
= x + 6
Using—
O = (L + N)/2
x = (x + 2 + N)/2
2x = x + 2 + N
N = x − 2
Thus, the ages are—
• N = x − 2
• O = x
• L = x + 2
• P = x + 4
• M = x + 6
Clearly, N is the youngest.
Age order—
N < O < L < P < M

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**55.**
3a, 2b, 7c = good and tasty
7c, 9a, 8b = see good pictures
9a, 4d, 2b = pictures and faint

The common word in the second and third statements is "pictures," and the common code is "9a."
⇒ pictures = 9a
The common word in the first and third statements is "and," and the common code is "2b."
⇒ and = 2b
Now in the first statement, the remaining codes are—
3a, 7c = good, tasty
In the second statement, the remaining codes are—
7c, 8b = see, good
The common code is "7c," so—
⇒ good = 7c
Therefore, the remaining code "8b" means "see."
⇒ see = 8b

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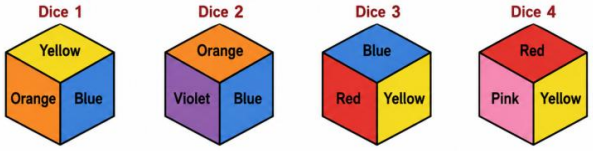
**56.**
• M = division (÷)
• N = addition (+)
• P = subtraction (−)
• B = multiplication (×)
Now the expression—
13P13B36M9N17
becomes—
= 13 − 13 × 36 ÷ 9 + 17
Using BODMAS rule—
= 13 − 13 × 4 + 17
= 13 − 52 + 17
= −22

**57.**




In the four different positions of the given dice, we analyze the colors appearing adjacent to the **yellow** face.
• In Dice 1, yellow appears with **orange** and **blue**.
• In Dice 3, yellow appears with **blue** and **red**.
• In Dice 4, yellow appears with **red** and **pink**.
Thus, the colors adjacent to yellow are—
• Orange
• Blue
• Red
• Pink
We know that in a cube (dice), each face has exactly **four adjacent faces** and only **one opposite face**.
Since the four adjacent colors to yellow have already been identified, the only remaining color is **violet**.
Therefore, violet must be opposite to yellow.
Hence, the color opposite to the yellow face is **Violet**.

**58.**


**58.**
In the first position, the faces adjacent to 4 are 3 and 1.
In the second position, the faces adjacent to 4 are 2 and 6.
Thus, the four faces adjacent to 4 are—
• 1
• 2
• 3
• 6
The only remaining number is 5, so 5 must be opposite to 4.
Therefore, if 5 is on the bottom face, then the opposite face, i.e. the top face, will be **4**.

---

**59.**
For mirror image clock problems, the standard formula used to find the actual time is—
**Actual Time = 11:60 − Mirror Time**
Given mirror time = 9:30
So,
11:60
− 9:30
= 2:30
Therefore, the correct time is **2:30**.
In mirror-image clock questions, the time appears reversed in the mirror. Hence, subtraction from 11:60 is used to find the real time.

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**60.**
Observe the alphabetical positions—
E → M
K → S
Both letters move 8 positions forward.
• E + 8 = M
• K + 8 = S
Similarly—
• A + 8 = I
• G + 8 = O
Therefore,
AG : IO :: EK : MS
Hence, the correct answer is **IO**.

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**61.**

Given symbols—

• P + Q → P is the father of Q

• P − Q → P is the mother of Q

• P × Q → P is the brother of Q

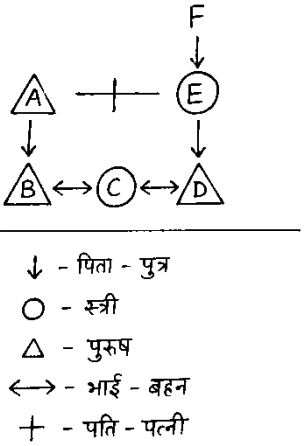
• P ÷ Q → P is the sister of Q

• P * Q → P is the son of Q

• P # Q → P is the daughter of Q

Expression:

A + B × C ÷ D * E # F




The flow of relationships is as follows—

• E # F ⇒ E is the daughter of F.

• D * E ⇒ D is the son of E.

• C ÷ D ⇒ C is the sister of D.

• B × C ⇒ B is the brother of C.

• A + B ⇒ A is the father of B.

Therefore, A will be the son-in-law of F.

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**62.**

(i) P + Q means P is the father of Q.

(ii) P − Q means P is the mother of Q.

(iii) P × Q means P is the brother of Q.

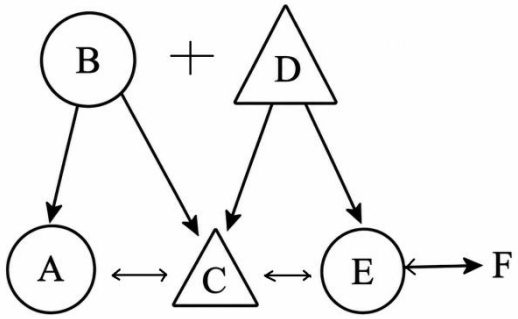
(iv) P ÷ Q means P is the sister of Q.

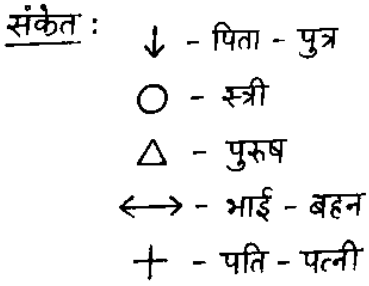
(v) P * Q means P is the son of Q.

(vi) P # Q means P is the daughter of Q.

Find the relation of F to A in the following expression—

A # B - C * D + E ÷ F




According to the given symbols—

• A # B ⇒ A is the daughter of B.

• B − C ⇒ B is the mother of C.

• C * D ⇒ C is the son of D.

• D + E ⇒ D is the father of E.

• E ÷ F ⇒ E is the sister of F.

E is the sister of F. This means F can be either the brother or sister of E.

Here, the gender of F is not clear because only E is confirmed as female. Therefore, F can be either a brother or a sister of A.

---

**63.**

Principal (P) = ₹8000

Rate (R) = 10% per annum

Time (T) = 2 years

i. Compound Interest compounded annually

Formula—

A = P(1 + R/100)^T

= 8000(1 + 10/100)^2

= 8000(1.1)^2

= 8000 × 1.21

= ₹9680

ii. Compound Interest compounded half-yearly

For half-yearly compounding—

• Rate = 10/2 = 5%

• Time = 2 × 2 = 4 half-years

Now,

A = 8000(1 + 5/100)^4

= 8000(1.05)^4

= 8000 × 1.2155

≈ ₹9724.05

Thus—

i. ₹9680

ii. ₹9724.05

---

**64.**

Outer diameter = 15 m

⇒ Outer radius = 15/2 = 7.5 m

Thickness of sphere = 0.5 m

⇒ Inner radius = 7.5 − 0.5

= 7 m
Area available for the motorcyclist = Inner surface area of hollow sphere
Surface area of sphere = $4\pi r^2$
= 4 × (22/7) × (7)^2
= 4 × (22/7) × 49
= 616 $m^2$

---

**65.**
When two dice are thrown together, total possible outcomes = 6 × 6 = 36
Favourable outcomes for sum 9 are—
• (3, 6)
• (4, 5)
• (5, 4)
• (6, 3)
Number of favourable outcomes = 4
Probability = Favourable outcomes / Total outcomes
= 4/36
= 1/9
∴ Probability of getting sum 9 = 1/9

---

**66.**
We know that—
(a + b + c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ca
Given expression—
$4x^2 + 9y^2 + 16z^2 - 12xy + 16xz - 24yz$
Now compare the square terms—
• $4x^2 = (-2x)^2$
• $9y^2 = (3y)^2$
• $16z^2 = (-4z)^2$
Now check the middle terms—
• 2(−2x)(3y) = −12xy
• 2(3y)(−4z) = −24yz
• 2(−2x)(−4z) = +16xz
All terms match the given expression.
Therefore—
$4x^2 + 9y^2 + 16z^2 - 12xy + 16xz - 24yz$
= (−2x + 3y − 4z)^2
Hence, the correct option is **A**.

**67.**
Volume of a cylinder = $\pi r^2 h$
Volume of a cone = $(1/3)\pi r^2 h$
If the radius and height of the cylinder and cone are equal, then—
Volume of cylinder : Volume of cone
= $\pi r^2 h : (1/3)\pi r^2 h$
= 3 : 1
Thus, the volume of the cylinder is three times the volume of the cone. Therefore, Assertion (A) is true.
Now check Reason (R)—
Volume of cylinder = $\pi r^2 h$
If the radius is doubled, then new radius = 2r
And if the height is halved, then new height = h/2
New volume—
= $\pi(2r)^2(h/2)$
= $\pi \times 4r^2 \times h/2$
= $2\pi r^2 h$
This is twice the original volume. Therefore, Reason (R) is also true.
But Reason (R) does not explain Assertion (A), because Assertion is based on the relation between the volumes of a cone and a cylinder, whereas Reason is related to changes in the radius and height of a cylinder.
Therefore, the correct option is **B**.

---

**68.**
Famous political thinker Harold J. Laski considered equality as the basic foundation of democracy. According to Laski, equality does not mean only legal equality, but also ensuring equal opportunities and respect for all individuals in social, economic, and political life.
Laski explained several important elements of equality—
• Absence of special privileges: No class in society should enjoy special rights on the basis of birth, caste, religion, wealth, or status.
• Equal opportunities: Every individual should get sufficient opportunities for the development of his or her abilities.
• Access to social benefits: Education, health, employment, and other social facilities should be equally available to all citizens.
• Absence of exploitation: Economic and social exploitation must end for real equality to exist.
Laski's idea of equality was based on positive equality. He did not consider legal equality alone sufficient, but also emphasized social justice and equality of economic opportunities.
In the Indian Constitution, the Right to Equality is described in Articles 14 to 18. It includes—
• Equality before law
• Prohibition of discrimination
• Equality of opportunity in public employment
• Abolition of untouchability
• Abolition of titles

---

**69.**

During the early period of British rule, peasants, sanyasis, and tribal communities organized several revolts against oppressive land revenue policies, economic exploitation, and British atrocities. These revolts hold an important place in the history of the Indian freedom movement.

The chronological order of these movements is as follows—

1. Sanyasi Rebellion — began around 1763 AD
2. Rangpur Peasant Revolt — 1783 AD
3. Pagal Panthi Rebellion — early decades of the nineteenth century, especially around 1825 AD
4. Barasat Peasant Revolt — 1831 AD

Thus, the correct order is—

2 → 3 → 4 → 1

**Sanyasi Rebellion**

This revolt took place in Bengal. Due to the Bengal Famine of 1770 and harsh British tax policies, dissatisfaction spread among sanyasis and peasants. Sanyasis and fakirs opposed British authority in this movement.

**Rangpur Peasant Revolt**

This revolt occurred in the Rangpur region of present-day Bangladesh. Peasants protested against excessive tax collection by British officials and zamindars.

**Pagal Panthi Rebellion**

This movement was led by Karam Shah and later by Tipu Shah. It was mainly a movement of poor peasants and tribal communities in the Bengal region.

**Barasat Peasant Revolt**

This revolt took place in the Barasat region of Bengal. It was led by Titumir (Syed Mir Nisar Ali). He organized peasants against the exploitation of zamindars and the British. Titumir also built the famous Bamboo Fort.

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**70.**

The concept of Bodhisattva is mainly related to Mahayana Buddhism, not the Hinayana sect. Therefore, Statement I is incorrect.

In Mahayana Buddhism, a Bodhisattva is a person who has adopted the path of enlightenment but does not attain nirvana only for personal liberation. Instead, he works for the welfare and liberation of all living beings. Therefore, the Bodhisattva is regarded as a symbol of compassion and kindness. Hence, Statement II is correct.

Statement III is incorrect because a Bodhisattva postpones final nirvana for the salvation of others rather than seeking personal liberation. The concept of personal liberation is more closely associated with the Hinayana (Theravada) tradition, where the ideal of the "Arhat" is emphasized.

Buddhism originated in the 6th century BCE. Its founder was Gautama Buddha, who was born in Lumbini. Buddha preached—

• Four Noble Truths
• Eightfold Path
• Middle Path

The major sects of Buddhism are—

• Hinayana (Theravada)
• Mahayana
• Vajrayana

In Mahayana Buddhism, Buddha was regarded as divine, and idol worship along with the concept of Bodhisattva developed.

**71.**

During British rule in India, several important events related to the agricultural system, land revenue policies, and the condition of peasants took place. Understanding the correct chronology of these events is an important part of modern Indian history.

• **Permanent Settlement in Bengal — 1793**

This system was introduced by Lord Cornwallis. Under this arrangement, zamindars were recognized as permanent owners of land and a fixed revenue was imposed on them. Its objective was to ensure a stable income for the British government.

• **Fifth Report of the Select Committee — 1813**

This report was prepared by a Select Committee of the British Parliament. It provided a detailed account of the administration of the East India Company and the condition of agriculture and revenue administration in Bengal.

• **Santhal Rebellion — 1855–56**

This revolt took place in the present-day regions of Jharkhand and Bihar. The Santhal tribe revolted against the exploitation of moneylenders, zamindars, and British officials. Its major leaders were Sidho, Kanho, Chand, and Bhairav.

• **Deccan Riots Commission — 1875**

Peasants in the Deccan region of Maharashtra revolted against moneylenders and the oppressive debt system. To investigate the incident, the British government established the Deccan Riots Commission. Later, the Deccan Agriculturists Relief

Act, 1879 was passed to improve the condition of peasants.
Thus, the correct chronological order is—
I → IV → III → II
Therefore, the correct option is **D**.

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**72.**
Lord Cornwallis was an important administrator during British rule in India. He served as the Governor-General of Bengal from 1786 to 1793. He introduced administrative, judicial, and revenue reforms. The Permanent Settlement of 1793 introduced by him was an important change in the Indian agrarian system. Therefore—
a → 3
Augustus Cleveland was a British official who adopted the "Policy of Pacification" in tribal areas, especially in the Rajmahal Hills. His objective was to bring the Paharia tribes under British administrative control. Therefore—
b → 4
Francis Buchanan was a physician, surveyor, and observer. He surveyed different regions of India and prepared detailed accounts related to agriculture, society, trade, and the life of the people. His writings are considered important sources for modern Indian history. Therefore—
c → 1
David Ricardo was a famous British economist. He gave the Theory of Comparative Advantage and the Rent Theory in economics. His book *Principles of Political Economy and Taxation* (1817) is highly renowned. Therefore—
d → 2
Thus, the correct matching is—
• a → 3
• b → 4
• c → 1
• d → 2

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**73.**
The Indus Valley Civilization (Harappan Civilization) was one of the ancient urban civilizations of the world. It extended across present-day Pakistan, Gujarat, Rajasthan, Haryana, and Punjab. This civilization is famous for its advanced town planning, drainage system, trade activities, and handicraft industries.
The correct matching of the given Harappan sites with their features is as follows—
• **Lothal** — This site is located in present-day Gujarat and is considered an important port town of the Harappan Civilization. Evidence of a dockyard has been found here, indicating the development of maritime trade. Lothal was especially famous for the production and trade of Carnelian stone beads. Carnelian was a red semi-precious stone used for making ornaments.
Therefore — 1 → b
• **Kalibangan** — This site is located in Hanumangarh district of Rajasthan. Important evidence of agriculture has been found here. Archaeologists discovered ploughed fields, which are considered among the oldest agricultural evidences in the world. This shows that the Harappans were familiar with advanced agricultural techniques.
Therefore — 2 → c
• **Dholavira** — This site is located in the Kutch region of Gujarat. It was a highly developed Harappan city. Evidence of massive reservoirs, dams, and water storage systems has been found here. The water management system of Dholavira reflects the scientific and technological advancement of that period.
Therefore — 3 → d
• **Nageshwar** — This site is located in Gujarat and was especially famous for the shell industry. Evidence of shell ornaments and shell-working industries has been found here.
Therefore — 4 → a
Thus, the correct matching is—
• 1 → b
• 2 → c
• 3 → d
• 4 → a
Other important sites of the Harappan Civilization include—
• Mohenjo-daro — famous for the Great Bath
• Harappa — famous for granaries
• Rakhigarhi — the largest Harappan site in India
• Chanhudaro — bead-making center
etc.

**74.**
The Sufi movement was an important religious and social movement in medieval India that emphasized love, humanity, tolerance, and devotion to God. Sufi saints promoted brotherhood and communal harmony in society. Many Sufi orders developed in India, among which the Chishti order became the most popular and influential.

The correct chronological order of the Chishti order is as follows—

• **Sheikh Muinuddin Chishti** — He is regarded as the founder of the Chishti order in India. He came to India in the 12th century and made Ajmer his center. He was called "Gharib Nawaz" because he was famous for helping the poor and needy. His shrine at Ajmer Sharif is one of the major pilgrimage centers in India.

Therefore — IV came first.

• **Sheikh Fariduddin Ganj-e-Shakar (Baba Farid)** — He was a great Sufi saint of the Punjab region. His teachings emphasized love, simplicity, and service to humanity. Some of his verses are also included in the Guru Granth Sahib, which reflects his influence.

Therefore — II comes next.

• **Sheikh Nizamuddin Auliya** — He was one of the most famous Sufi saints of Delhi. He kept himself away from power and politics and emphasized love and service to humanity. His famous disciple was Amir Khusro, who made significant contributions to music and literature.

Therefore — I comes after that.

• **Sheikh Nasiruddin Chiragh-e-Delhi** — He was a major disciple and successor of Nizamuddin Auliya. He was known as "Chiragh-e-Delhi." He continued the Chishti tradition in Delhi.

Therefore — III comes last.

Thus, the correct order is—

• IV → II → I → III

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**75.**

In 2024, the prestigious Pulitzer Prize in the category of Editorial Writing was awarded to David E. Hoffman. He is a senior journalist and writer associated with *The Washington Post*.

He received this award for his deeply researched editorial series on the new technologies, surveillance systems, and repressive strategies used by authoritarian governments in the digital age to suppress dissent.

The Pulitzer Prize was established in memory of American journalist and publisher Joseph Pulitzer. The first Pulitzer Prize was awarded in 1917. It is presented in several categories including journalism, literature, music, drama, and editorial writing.

In the 2024 Pulitzer Prizes—

• *The New York Times* received the International Reporting award for coverage of the Gaza war.

• Reuters was honored for Breaking News Photography.

• Justin Chang received the award in the Criticism category.

About the other options—

• Kathleen Kingsbury received the Pulitzer Prize for Editorial Writing in 2015 for *The Boston Globe*.

• Nikole Hannah-Jones received the Pulitzer Prize in the Commentary category in 2020 for *The 1619 Project* published in *The New York Times Magazine*.

• Bret Stephens received the Pulitzer Prize in the Commentary category in 2013 for *The Wall Street Journal*.

The Pulitzer Prize is considered almost equivalent to the "Oscar Award" in the field of journalism.

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**76.**

The author of the world-famous *Harry Potter* series is J.K. Rowling. This series is considered one of the most popular fantasy literary works of modern times.

The first book of the series, *Harry Potter and the Philosopher's Stone*, was published in 1997. After that, a total of seven novels were published, describing the magical school Hogwarts School of Witchcraft and Wizardry and the adventurous life of Harry Potter.

Major characters of the Harry Potter series include—

• Harry Potter
• Hermione Granger
• Ron Weasley
• Lord Voldemort
• Albus Dumbledore

The series has been translated into many languages around the world, and films based on it also became extremely popular.

Among the other options—

• J.R.R. Tolkien is the author of *The Lord of the Rings* and *The Hobbit*.

• C.S. Lewis is the author of *The Chronicles of Narnia*.

• Roald Dahl is famous for children's literature works such as *Charlie and the Chocolate Factory*.

J.K. Rowling's Harry Potter series gave children's and young adult literature a new level of global popularity.

**77.**

The full form of UNSC is **United Nations Security Council**. It is considered the most important organ of the United Nations Organization (UNO).

The United Nations was established on 24 October 1945 after the Second World War with the objective

of maintaining international peace and security. Its headquarters is located in New York, USA.
The main functions of the Security Council are—
• Maintaining international peace and security
• Preventing wars and conflicts
• Sending peacekeeping forces
• Imposing sanctions
• Recommending new member nations
etc.
The UNSC has a total of 15 members—
• 5 Permanent Members
• 10 Non-Permanent Members
The permanent members are—
• United States of America
• Russia
• China
• United Kingdom
• France
These countries possess Veto Power.
India has served several times as a non-permanent member of the UNSC and has long been demanding permanent membership in the Security Council.
Other important organs of the United Nations include—
• General Assembly
• Economic and Social Council (ECOSOC)
• International Court of Justice (ICJ)
• Secretariat
etc.

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**78.**
The full form of IFC-IOR is **Information Fusion Centre – Indian Ocean Region**. It is an important maritime security center established by India with the objective of strengthening maritime surveillance, information sharing, and security cooperation in the Indian Ocean Region.
This center was established by the Indian Navy in Gurugram, Haryana, in 2018. Its main objective is to monitor—
• Piracy
• Smuggling
• Terrorist activities
• Illegal fishing
• Suspicious maritime activities
in the Indian Ocean Region.
IFC-IOR holds special importance in India's maritime security policy because the Indian Ocean is one of the most important trade routes in the world. A major portion of the world's oil and commercial trade passes through this region.
IFC-IOR exchanges maritime information with various countries and international organizations. This enhances cooperation and security in the maritime domain.
Major initiatives related to India's maritime security include—
• SAGAR (Security and Growth for All in the Region)
• Indo-Pacific Policy
• Malabar Naval Exercise
etc.

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**79.**
In this question, different symbols are assigned special meanings. First, convert these symbols into normal mathematical signs—
• α = greater than ( > )
• ß = equal to ( = )
• θ = not less than ( ≥ )
• γ = less than ( < )
• δ = not equal to ( ≠ )
• η = not greater than ( ≤ )
Now understand the given statements—
C α 2d
This means—
C > 2d
Second statement—
2d θ s
This means—
2d ≥ s
This indicates that 2d is either equal to or greater than s.
Now combine both relations—
• C > 2d
• 2d ≥ s
Since C is greater than 2d and 2d is equal to or greater than s, it is definite that C is greater than s.
That is—
C > s
According to the given symbols—
"greater than" = α
Therefore—
C α s
will be the correct option.
**80.**
MIKE → 2%#$
From this, we get—
• M = 2
• I = %

• K = #
• E = $
Now the second word—
KOAL → #@75
From this—
• K = #
• O = @
• A = 7
• L = 5
Now convert "AIM" into code—
• A = 7
• I = %
• M = 2
Therefore—
AIM → 7%2

---

**81.**
TEACHER → KAELRAS
Now observe the code of each letter—
• T → K
• E → A
• A → E
• C → L
• H → R
• E → A
• R → S
Now apply the same pattern to "CHEATER"—
• C → L
• H → R
• E → A
• A → E
• T → K
• E → A
• R → S
CHEATER → LRAEKAS

---

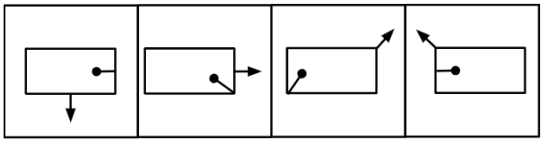
**82.**
This question is based on the opposite letter pattern in the English alphabet.
In the English alphabet, the opposite letter of a letter is the one whose positional value adds up to 27.
For example—
• A ↔ Z
• B ↔ Y
• C ↔ X
• D ↔ W
etc.
Now observe the word "DIAMOND"—

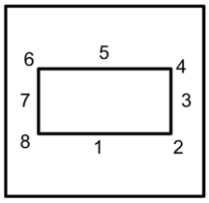
| Original Letter | Opposite Letter | Code |
|---|---|---|
| D | W | V |
| I | R | Q |
| A | Z | Y |
| M | N | M |
| O | L | K |
| N | M | L |
| D | W | V |

Here, the code is formed by subtracting 1 from the opposite letter.
Now apply the same rule to "FEMALE"—

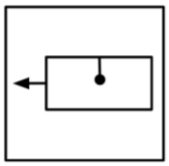
| Original Letter | Opposite Letter | Code |
|---|---|---|
| F | U | T |
| E | V | U |
| M | N | M |
| A | Z | Y |
| L | O | N |
| E | V | U |

Therefore, the code will be—
TUMYNU
Hence, the correct answer is **A**.

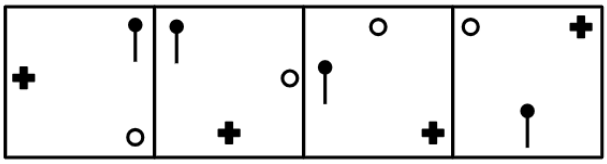
**83.**


In this question, the position of the arrow can be observed in the anti-clockwise direction. If we consider the four corners and the midpoints of the sides of the rectangle as positions numbered from 1 to 8 respectively, then—


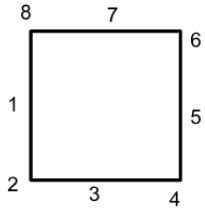
• In the first figure, the arrow is at position 1.
• In the second figure, the arrow reaches position 3.
• In the third figure, the arrow is at position 4.
• In the fourth figure, the arrow reaches position 6.
Thus, the arrow is continuously moving in the anti-clockwise direction. Therefore, in the next figure, the arrow should be at position 7.
Among the given options, only option A shows the arrow at position 7.

A. 

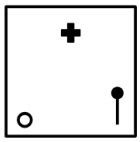
**84.**



In this question, the main pattern is based on the position of the '+' sign. If we number the sides and corners of the square from 1 to 8 respectively and observe the movement of the '+' sign, it is moving in the anti-clockwise direction.




The sequence of positions is as follows—
• In the first figure, the '+' sign is at position 1.
• In the second figure, it reaches position 3.
• In the third figure, it is at position 4.
• In the fourth figure, it reaches position 6.
Thus, in the next figure, the '+' sign should be at position 7, which will be located at the middle of the upper side.

A. 

**85.**

In domestic electrical circuits, electrical appliances are generally connected in a parallel combination.
Therefore, Assertion (A) is completely true.
In a parallel combination, each appliance is directly connected to the main power source. As a result, every appliance receives the same potential difference (voltage). In India, the domestic power supply is generally 220 V, so appliances such as fans, bulbs, refrigerators, televisions, coolers, and other devices receive the same voltage according to their requirements.
Major advantages of parallel combination—
• Each appliance works independently.
• If one appliance becomes faulty, the other appliances continue to work.
• Each appliance can be controlled by a separate switch.
• All appliances receive the same voltage.
If appliances in domestic circuits were connected in series connection, several problems would arise—
• The same current would flow through all appliances, whereas each appliance has different requirements.
• Voltage would be divided.
• If one appliance became faulty, the entire circuit would break and all appliances would stop working.
In electricity, the principle of parallel combination is based on Ohm's Law and the concepts of electric current and potential difference. Therefore, domestic wiring systems are based on parallel combination.
Thus, Reason (R) is true and it correctly explains Assertion (A).

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**86.**

The bending of plants towards light is called phototropism. It is an important biological response in plants in which the plant grows towards the source of light. In this process, the plant hormone called auxin plays the main role.
Auxin is produced in the shoot apex of the plant. When light falls on the plant from one direction, auxin moves away from the illuminated side and accumulates more on the shaded side. Therefore, Statement II is correct.
The higher concentration of auxin on the shaded side causes cell elongation, not cell division. As a result, the cells on the shaded side become longer, and the plant bends towards the light. Therefore, Statement IV is correct, while Statement III is incorrect.
Statement I is also incorrect because auxin does not accumulate more on the illuminated side; instead, it accumulates on the shaded side.
Auxin is an important growth hormone in plants that controls—
• Cell elongation
• Growth of roots and stems
• Phototropism
• Geotropism
Other important plant hormones include—
• Gibberellin — stem growth
• Cytokinin — cell division
• Abscisic Acid (ABA) — growth inhibitor
• Ethylene — fruit ripening
etc.

**87.**

In the living world, millions of types of organisms are found. Since the same organism had different local

names in different regions and languages, confusion arose in scientific studies. To remove this problem, the Binomial Nomenclature system was developed. Therefore, Assertion (A) is true.
This system was developed by the famous scientist Carolus Linnaeus, who is known as the Father of Modern Taxonomy. Under binomial nomenclature, every organism is given a scientific name consisting of two words—
• First word — Genus name
• Second word — Species name
Therefore, Reason (R) is also true.
Some important rules of binomial nomenclature—
• Scientific names are generally written in Latin language.
• The first letter of the Genus is written in capital form.
• The first letter of the Species is written in small form.
• In printed form, scientific names are written in italics.
Examples—
• Human — Homo sapiens
• Mango — Mangifera indica
• Lion — Panthera leo
Advantages of binomial nomenclature—
• Organisms are identified uniformly throughout the world.
• Scientific communication becomes easier.
• Classification and study of organisms become convenient.

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**88.**
Ribosomes are very important cell organelles that mainly perform protein synthesis. They are also called the "protein factories" of the cell. Ribosomes are found in all types of living cells — both prokaryotic and eukaryotic.
Proteins are formed on ribosomes by joining amino acids together. Most enzymes produced in the cell are protein in nature. Therefore, enzyme formation is also indirectly carried out by ribosomes. Hence, Statements (I) and (II) are correct.
Fats or lipids are mainly synthesized in the Smooth Endoplasmic Reticulum (SER). Therefore, Statement (III) is incorrect.
Starch is synthesized in plants during the process of photosynthesis. This function mainly occurs in plastids such as chloroplasts. Therefore, Statement (IV) is also incorrect.
Important features of ribosomes—
• Ribosomes are non-membranous cell organelles.
• They were discovered by George Palade, so they are sometimes called "Palade Particles."
• They are found freely in the cytoplasm or attached to Rough Endoplasmic Reticulum (RER).
• 70S ribosomes are found in prokaryotic cells, while 80S ribosomes are found in eukaryotic cells.
• Mitochondria and chloroplasts also contain their own ribosomes.

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**89.**
Tendrils are thin, thread-like, and coiled structures in plants that help them hold support and climb upward. They are mainly found in climbing plants such as—
• Pea
• Grapevine
• Bottle gourd
• Pumpkin
• Cucumber
etc.
Tendrils are sensitive to touch stimulus. When tendrils come in contact with a support, they start coiling around it. This response of plants is called Thigmotropism. Therefore, the correct answer is touch stimulus.
In thigmotropism, a part of the plant grows in a particular direction due to touch. The coiling of tendrils around support helps the plant reach greater height and obtain sunlight.
This process is influenced by the plant growth hormone Auxin. When tendrils touch an object, unequal distribution of auxin occurs. As a result, cells on one side grow more, causing the tendril to bend and grasp the support.
Major tropic movements in plants—
• Phototropism — response to light
• Geotropism — response to gravity
• Hydrotropism — response to water
• Chemotropism — response to chemicals
• Thigmotropism — response to touch
These plant responses help them adapt to the environment and support their growth and development.

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**90.**
• Cost Price (CP) = ₹8400
• Selling Price (SP) = ₹6384
Since the selling price is less than the cost price, there is a loss.

Loss = Cost Price − Selling Price
= 8400 − 6384
= ₹2016
Now,
Loss Percentage = (Loss / Cost Price) × 100
= (2016 / 8400) × 100
= 24%

**91.**

Given—
• Height of cone (h) = 12 cm
• Slant height of cone (l) = 13 cm
To find the radius of the cone—
$l^2 = r^2 + h^2$
$13^2 = r^2 + 12^2$
$169 = r^2 + 144$
$r^2 = 25$
r = 5 cm
Thus, the radius of both the cone and hemisphere is 5 cm.
Now,
Volume of cone
$= (1/3)\pi r^2 h$
$= (1/3)\pi \times 5^2 \times 12$
$= (1/3)\pi \times 25 \times 12$
$= 100\pi$ cm$^3$
Volume of hemisphere
$= (2/3)\pi r^3$
$= (2/3)\pi \times 5^3$
$= (2/3)\pi \times 125$
$= 250\pi/3$ cm$^3$
Now total volume—
$= 100\pi + 250\pi/3$
$= (300\pi + 250\pi)/3$
$= 550\pi/3$ cm$^3$

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**92.**

• a. Confidence Building Measures → ii. A process of exchanging defence-related information between nations on a regular basis :
Under this, two or more countries share information regarding military plans, troop positions, and defence activities to avoid misunderstandings and sudden conflicts.
• b. Arms Control → iv. Controls the acquisition or development of weapons :
Under arms control, countries mutually agree on rules and limits regarding the manufacture, testing, and use of certain weapons. The Anti-Ballistic Missile (ABM) Treaty is an example.
• c. Alliance/Coalition → iii. A grouping of nations formed for deterrence or defence :
It is an organization of countries formed for collective security against external threats or military attacks. NATO is a major example.
• d. Disarmament → i. Giving up certain kinds of weapons :
Disarmament means eliminating or abandoning weapons that are dangerous to humanity. The Biological Weapons Convention and Chemical Weapons Convention are important examples.

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**93.**

• Majoritarianism is a political system or ideology in which the majority community dominates governance and policies based on numerical strength. In such systems, the interests of minorities may often be ignored. Sinhala majoritarianism in Sri Lanka is considered a major example, where the Tamil community faced inequality.
• Power Sharing is an important principle of democracy in which power is distributed among different social, linguistic, religious, and regional groups to ensure participation of all sections of society. Its objective is to reduce social conflicts and maintain political stability.
Forms of power sharing—
• Division of power among organs of government
• Federal division between Centre and States
• Political participation of different social groups
• Balance among political parties and pressure groups
Belgium is considered a successful example of power sharing, where constitutional balance was established between Dutch-speaking and French-speaking communities.

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**94.**

India follows a parliamentary democratic system in which government formation is based on majority support in the legislature. The political party or alliance that secures majority in the Lok Sabha or Legislative Assembly claims the right to form the government.
• Statement I is incorrect because independent candidates alone generally do not form the government. They may support a government, but organized majority support is necessary.
• Statement II is incorrect because the Constitution does not reserve government formation only for

political parties. Though practically, governments are formed by political parties or alliances.
• Statement III appears partially correct but is incomplete because merely being elected is not sufficient; majority support is also required.
• Statement IV is correct because in a parliamentary system, the political party or alliance having majority in the House forms the government. Appointment of the Prime Minister or Chief Minister is also based on this principle.
Article 75 of the Indian Constitution provides for collective responsibility of the Council of Ministers to the Lok Sabha at the Centre, while Article 164 provides the same for State Legislative Assemblies. Therefore, majority support and confidence of the House are essential for government formation.

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**95.**
• Assertion (A) is true because power sharing provides participation in governance to different social, linguistic, religious, and regional groups. This reduces dissatisfaction and social conflict, thereby maintaining political stability.
• Reason (R) is also true because power sharing includes all major groups in the decision-making process. This reduces domination by any one community and ensures representation of minority groups. Such inclusiveness helps reduce social conflict.
• Reason (R) correctly explains Assertion (A) because participation and representation of social groups form the main basis for preventing conflict.
Belgium is considered a major example of successful power sharing, where constitutional balance between Dutch-speaking and French-speaking communities reduced social conflict. In contrast, Sri Lanka experienced prolonged conflict between Sinhala and Tamil communities due to majoritarian policies.

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**96.**
• (iv) Primary cause :
First, the basic cause of geothermal energy is established. As depth inside the Earth increases, temperature also continuously increases. This is known as the geothermal gradient. Due to this, enormous heat exists inside the Earth.
• (ii) Heating of groundwater :
In areas with high geothermal gradient, underground water comes in contact with hot rocks and absorbs heat, becoming extremely hot.
• (i) Conversion into steam :
When this highly heated water rises towards the Earth's surface, pressure decreases and it changes into steam.
• (iii) Generation of electricity :
Finally, this steam is used to rotate turbines connected to generators, which produce electricity.
Geothermal energy is considered an important source of renewable energy because it causes less pollution and remains available for a long time.
In India, Puga Valley (Ladakh), Manikaran (Himachal Pradesh), and Tattapani (Chhattisgarh) are important potential geothermal energy regions.

**97.**
Black Soil (Regur Soil) is considered the most suitable soil for cotton cultivation. The most important feature of this soil is its very high moisture retention capacity. Therefore, clue (i) is the most useful in identifying the ideal soil for cotton.
Black soil is mainly formed by the weathering of basalt rocks. It is especially found in the Deccan Trap region. This soil contains abundant lime, magnesium, iron, and potash, while nitrogen and phosphorus are comparatively low.
This soil retains moisture for a long time after rainfall, providing continuous water supply to cotton crops. On drying, it develops wide cracks which improve air circulation in the soil. Due to this property, it is also called "Self-Ploughing Soil."
• Clue (ii) is related to yellow soil, which appears yellow due to hydration.
• Clue (iii) refers to kankar and bhangar, terms associated with alluvial soil. Bhangar is old alluvial soil containing calcareous nodules.
• Clue (iv) describes loamy soil, which is suitable for general agriculture, but cotton is specially associated with black soil and its moisture-retaining property.
In India, black soil is mainly found in Maharashtra, Gujarat, Madhya Pradesh, Telangana, and Karnataka.

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**98.**
• a. Cirrus (Ci), Cirrocumulus (Cc), Cirrostratus (Cs) → III. Thin, white, icy clouds, no rainfall :
These are high-level clouds formed at great heights. They mainly contain ice crystals. They appear thin, white, and feathery and generally do not produce rainfall.
• b. Altocumulus (Ac), Altostratus (As) → I. Layered or puffy, made of liquid water :

These are middle-level clouds containing water droplets. They appear in layered or clustered forms.
• c. Stratus (St), Stratocumulus (Sc), Nimbostratus (Ns) → II. Gloomy sky, light rain, generally cloudy weather : These are low-level clouds that cover the sky and bring light rain or drizzle. Nimbostratus clouds especially cause continuous rainfall.
• d. Cumulus (Cu), Cumulonimbus → IV. Tall, narrow, and puffy :
These are clouds with vertical development. Cumulonimbus clouds are associated with thunder, lightning, and heavy rainfall. They are also called "Thunder Clouds."
Clouds are mainly classified on the basis of height, shape, and structure. Luke Howard is known as the father of the modern cloud classification system.

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**99.**

• a. Tributaries originating from a peak flow downward along the slopes and drain water in all directions. (Correct)
Radial Drainage Pattern develops when rivers originate from a central elevated area such as a dome, volcanic cone, or plateau and flow outward in all directions following the slope. This pattern resembles the spokes of a wheel.
• b. Rivers originating from the Amarkantak Plateau provide a good example of radial drainage pattern. (Correct)
The Amarkantak Plateau is a major example of radial drainage in India. Rivers flow in different directions from this plateau—
• Narmada River flows westward
• Son River flows northward
• Tributaries of the Mahanadi system flow eastward and south-eastward
• c. Radial drainage patterns are also found in the Nilgiri Hills. (Correct)
The Nilgiri Hills in South India also form a central elevated region. Rivers such as Bhavani, Moyar, and Kabini flow in different directions from here, forming a radial drainage pattern.

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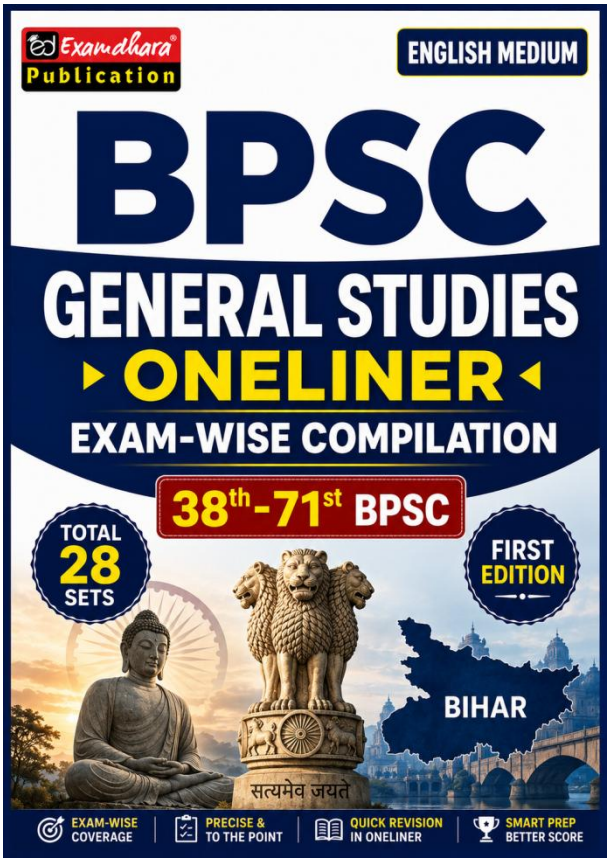
**100.**

Descending order means arranging from the largest area to the smallest area. The approximate actual areas of the given wetlands are as follows—
• Sundarban Wetland — about 4230 sq km
Located in the Ganga-Brahmaputra Delta region of West Bengal, it is the world's largest mangrove forest and a UNESCO World Heritage Site. It is famous for the Royal Bengal Tiger.
• Vembanad Wetland System — about 2033 sq km
Located in Kerala, it is India's largest wetland system. It is famous for backwater tourism, fisheries, and Kumarakom Bird Sanctuary. It is also a Ramsar Site.
• Chilika Lake — about 1165 sq km
Located in Odisha, it is Asia's largest brackish water lagoon. It is famous for migratory birds and Irrawaddy dolphins. It is one of India's earliest Ramsar Sites.
• Sambhar Lake — about 230 sq km
Located in Rajasthan, it is India's largest inland saline lake. It is known for salt production and serves as an important habitat for flamingos.
• Ashtamudi Wetland — about 61 sq km
Located in Kollam district of Kerala, it is an important backwater estuary. "Ashtamudi" means a lake with eight branches. It is important for fisheries, coconut-based industries, and inland water transport.
Thus, the correct descending order is—
Sundarban > Vembanad > Chilika > Sambhar > Ashtamudi
That is—
e > a > b > d > c
Note:
Based on actual area, the correct order becomes e → a → b → d → c, but this combination was not available in the original question options. This new option was added by Examdhara as a correction.

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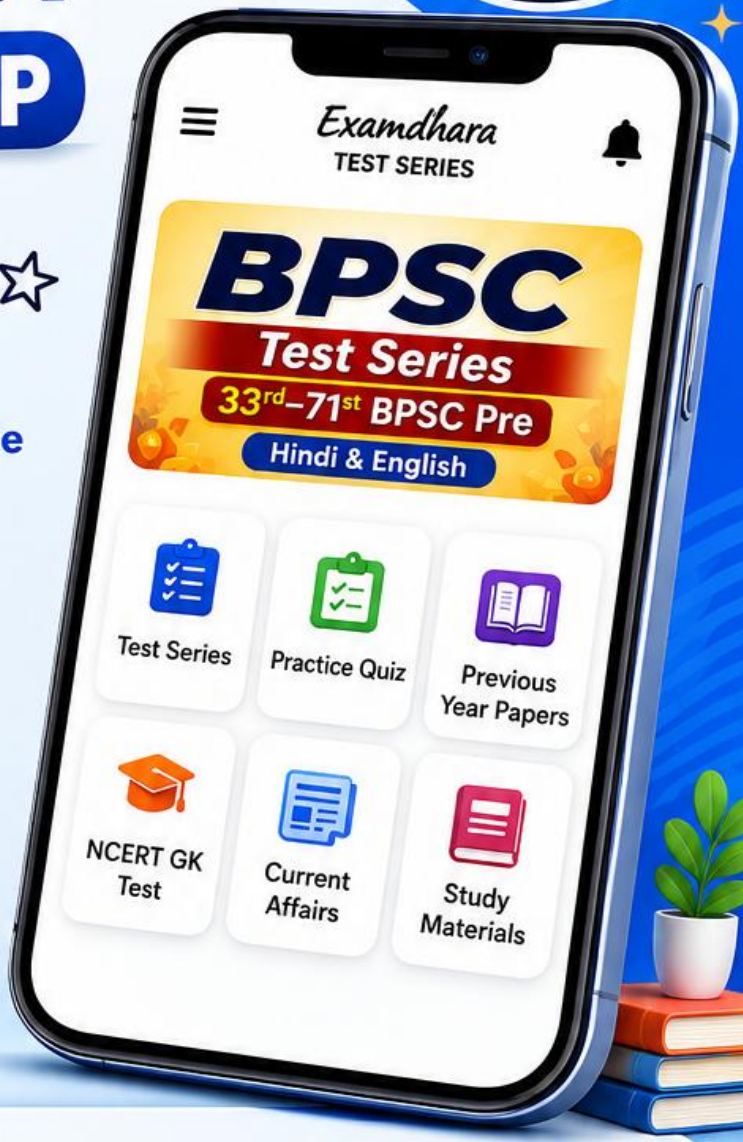


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