

THE SPRINGS INTERNATIONAL SCHOOL
SPRINGS CIVIL SERVICE OLYMPIAD

Question
booklet
version code

SCSO – 26
QUESTION BOOKLET

SC

BOOKLET NO. 26SO1	TIME ALLOWED 100 MINUTES	TOTAL QUESTIONS 100	MAXIMUM MARKS 400
-----------------------------	------------------------------------	-------------------------------	-----------------------------

CANDIDATE NAME:	ROLL NUMBER:
SCHOOL NAME:	PAPER CODE: SCSO26-P

GENERAL INSTRUCTIONS

1. This question booklet contains 100 multiple-choice questions. 2. Each question has four alternatives: (A), (B), (C) and (D). Select the most appropriate answer. 3. Read each question carefully before marking your answer. 4. Mark your answers only on the OMR answer sheet provided. 5. Use only a black or blue ballpoint pen to mark the OMR sheet. 6. Do not write, mark or make unnecessary notations on the OMR answer sheet except as instructed. 7. Do not fold, tear or damage the OMR answer sheet. 8. The question paper consists of: Science, Social Science, Mathematics, Logical Reasoning, Current Affairs & General Awareness, English language, and Life Skills & Social Awareness. 9. All questions carry equal marks. 10. There is no negative marking.	11. The total time allowed is 100 minutes. 12. Candidates must not use calculators, mobile phones, smart watches or any other electronic device during the examination. 13. Ensure that the booklet number on the question booklet matches the booklet number marked on the OMR answer sheet. 14. Do not open the question booklet until instructed by the invigilator. 15. If there is any discrepancy or missing page, inform the invigilator immediately. 16. Candidates must not communicate with or disturb other candidates during the examination. 17. The decision of the examination authorities regarding the conduct of the examination shall be final.
---	--

FOR INVIGILATOR'S USE ONLY

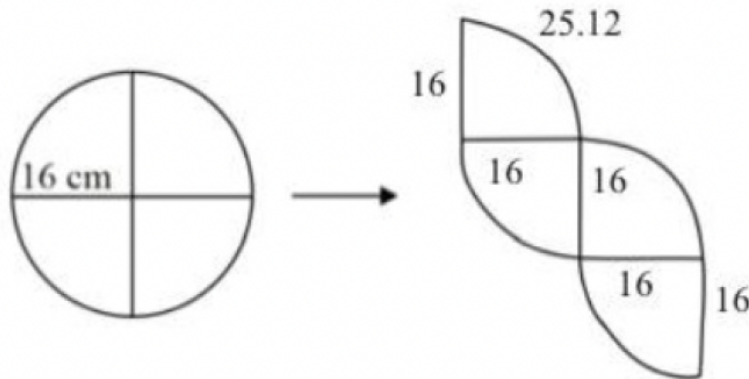
Booklet No:	OMR SHEET Checked /Not checked	Signature:
--------------------	--	-------------------

IMPORTANT
DO NOT WRITE ANYTHING BELOW THIS LINE

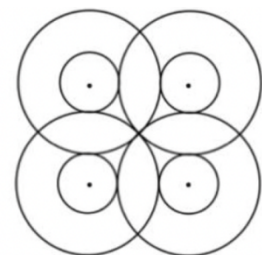
DO NOT TURN THE PAGE UNTIL INSTRUCTED

-----*Space for rough work*-----

1. The perimeter of the given shape formed by cutting and rearranging the circle is and its area are



- A. 50.24 cm, 200.96 cm²
 B. 50.24 cm, 201.06 cm²
 C. 180.48 cm, 803.84 cm²
 D. 803.84 cm, 100.48 cm²
2. A number is increased by 20% and then decreased by 20%. Compared with the original number, the final number is:
- 4% greater B. 4% smaller C. 2% smaller D. Unchanged
3. The ascending order for $\frac{1}{4}$, 0.19, 0.3, 26 %, $\frac{1}{5}$, is,
- A. 0.19, $\frac{1}{5}$, $\frac{1}{4}$, 26 %, 0.3
 B. $\frac{1}{4}$, 0.19, 0.3, 26 %, $\frac{1}{5}$
 C. 0.19, 0.3, $\frac{1}{4}$, 26 %, $\frac{1}{5}$
 D. $\frac{1}{4}$, 0.19, 26 %, $\frac{1}{5}$, 0.3
4. The diagram shows eight circles of two different sizes. The circles are arranged in concentric pairs so that their centres form a square. Each larger circle touches one other larger circle and two smaller circles. The larger circles have radius 1 unit. What is the radius of each smaller circle?



- A. $\frac{1}{3}$
 B. $\frac{2}{3}$
 C. $\sqrt{2} - 1$
 D. $\frac{\sqrt{2}}{2}$

5. A three-digit number has distinct digits. The sum of its digits is 12. The hundreds digit is twice the unit's digit. How many such numbers are possible?
A. 2 B. 3 C. 6 D. 10
6. How many squares of all possible sizes are there in a 5×5 square grids?
A. 25 B. 40 C. 55 D. 60
7. How many integers from 1 to 100 are divisible by 3 or 5?
A. 40 B. 43 C. 47 D. 50
8. Find the next number: 2, 6, 12, 20, 30,
A. 40 B. 42 C. 44 D. 46
9. The ratio of boys to girls in a class is 3:2. If there are 10 more boys than girls, the total number of students is:
A. 40 B. 45 C. 50 D. 60
10. If, $x + \frac{1}{x} = 5$, then $x^2 + \frac{1}{x^2} = ?$
A. 21 B. 23 C. 25 D. 27
11. A manufacturer has four materials P, Q, R and S.
- P is hard, lustrous and can be beaten into thin sheets.
 - Q is soft and does not allow light to pass through it.
 - R is transparent and dissolves in water.
 - S is insoluble in water and breaks into pieces when hammered.
- Which combination is most consistent with these observations?
- A. P-copper, Q-wood, R-sugar, S-sulfur
B. P-wood, Q-iron, R-sugar, S-copper
C. P-sulfur, Q-copper, R-sand, S-aluminum
D. P-glass, Q-aluminum, R-iron, S-wood
12. Three balls of identical size are made from different materials. When dropped from the same height, P bounces highest, Q moderately and R the least. Which conclusion is the most appropriate?

- A. P must have the greatest mass.
- B. Q must be harder than P.
- C. The different bouncing behavior can be related to differences in the materials from which the balls are made.
- D. All three balls must have identical physical properties because their sizes are identical.

13. Equal quantities of water are placed in three identical shallow plates:

- P: kept under a fan
- Q: kept in still air
- R: kept in a humid room with little air movement

Under otherwise comparable conditions, which order of disappearance of water is most likely?

- A. $P > Q > R$
- B. $R > Q > P$
- C. $Q > P > R$
- D. $P = Q = R$

14. A wet cloth dries much faster on a hot, windy afternoon than on a cool, humid afternoon. Which combination best explains the difference?

- A. High temperature and air movement favor evaporation, while high humidity opposes it.
- B. High temperature converts water directly into ice, while humidity increases evaporation.
- C. Wind changes water into a different substance, while humidity has no effect.
- D. Evaporation occurs only when water reaches its boiling point.

15. Four colorless solutions P, Q, R and S give the following results:

Solution	Blue litmus	Red litmus
P	turns red	no change
Q	no change	turns blue
R	no change	no change

- A. P is basic, Q is acidic and R is neutral.
- B. P is acidic, Q is basic and R is neutral.
- C. P and Q are both neutral.
- D. P and R are acidic.

16. A soil sample is found to be too acidic, causing poor plant growth. A farmer has the following substances available:

1. Lime
2. Vinegar
3. Baking soda

4. Lemon juice

Which choice contains substances that can act as bases suitable for reducing the acidic nature of the soil?

- A. 1 only
- B. 2 and 4 only
- C. 1 and 3 only
- D. 2, 3 and 4

17. Four objects are tested:

Object	Hammering	Electrical conduction
P	flattens	conducts
Q	breaks	does not conduct
R	flattens	conducts
S	breaks	does not conduct

Which pair is most likely to represent a metal and a non-metal respectively?

- A. P and Q
- B. Q and R
- C. P and R
- D. R and P

18. Magnesium and sulfur are separately allowed to react with oxygen. The resulting substances are then dissolved in water and tested. Which observation is most consistent with their behavior?

- A. Both products necessarily show identical acidic behavior.
- B. Magnesium oxide gives a basic solution, while sulfur dioxide gives an acidic solution.
- C. Magnesium oxide is acidic, while sulfur dioxide is basic.
- D. Neither product can interact with water.

19. A sealed syringe contains air. Its outlet is blocked and the plunger is pushed inward. The volume occupied by the air decreases considerably. The same procedure is attempted with water, but its volume changes very little. Which explanation best accounts for the observation?

- A. Air particles are larger than water particles.
- B. Water particles have no movement.
- C. There is much more interparticle space in a gas than in a liquid.
- D. Water contains no constituent particles.

20. Consider the following changes:

- I. Ice → water
- II. Water → water vapor
- III. Water vapor → water
- IV. Water → ice

Which statement correctly describes all four processes in terms of particle attraction?

- A. I and II involve increasing interparticle attraction, while III and IV involve decreasing attraction.
- B. I and II involve weakening of interparticle attraction, while III and IV involve strengthening of interparticle attraction.
- C. All four processes involve exactly the same change in interparticle attraction.
- D. None of the four processes is related to interparticle attraction.

21. Archaeologists discover remains of an ancient settlement in the Ganga plains. They also find references to similar urban centers in Buddhist and Jain texts. Why would a historian consider this combination of evidence particularly strong for studying the Second Urbanization?
- A. Archaeology can establish the existence of settlements, while literature can provide information about how people understood and described them.
 - B. Literary sources are always more reliable than archaeological evidence.
 - C. Archaeological evidence can reveal political events, whereas literature cannot provide any historical information.
 - D. The presence of Buddhist and Jain texts proves that all the inhabitants of the settlement followed these religions.
22. A group of small territorial states grows as trade networks expand. Over time, some of these states merge to form larger political units. At roughly the same time, urban centers begin to flourish. Which explanation best connects these developments?
- A. Expanding trade strengthened connections between territories, while larger political units and growing urban centers emerged alongside this process.
 - B. Urbanization caused all smaller states to disappear immediately.
 - C. The growth of cities resulted entirely from military conquest and had no connection with trade.
 - D. The emergence of mahājanapadas caused people to abandon long-distance trade.
23. Consider the following evidence about Chandragupta Maurya:
- Magadha already possessed geographical and economic advantages.
 - Trade was flourishing.
 - Kautilya provided strategic advice.
 - Chandragupta defeated Greek satraps in the northwest.
 - He subsequently maintained diplomatic relations with the Greeks.

Which conclusion best explains the nature of Mauryan expansion?

- A. It depended exclusively on military conquest.
- B. It combined existing economic advantages, strategic planning, military expansion and diplomacy.
- C. It was primarily the result of alliances with Greek rulers.
- D. It succeeded because Magadha was geographically isolated from other regions.

24. Ashoka's edicts were deliberately placed across a vast area and were generally written in Prakrit using Brahmi script.

Which inference best explains why this choice would have helped Ashoka communicate with his subjects?

- A. He selected a language used in many parts of India and a script through which it could be written and publicly displayed.
- B. He wanted his messages to be understood only by scholars trained in Sanskrit.
- C. He intended his edicts primarily for foreign rulers rather than his own people.
- D. Using Brahmi meant that Ashoka's messages were written in Greek.

25. A Kushana ruler places Buddha on one side of a coin and Shiva with Nandi on another. During the same period, Kushana-controlled regions became important for trade along the Silk Route, while Gandhara art combined Greek and Indian features.

Which interpretation best fits all three pieces of evidence?

- A. Political power was being used to enforce one uniform religious tradition.
- B. Trade and cultural contact contributed to an environment in which different religious and artistic traditions could interact.
- C. Greek influence completely replaced Indian artistic traditions.
- D. The Kushanas deliberately separated political power from cultural exchange.

26. The Śhunga ruler Puṣhyamitra performed the aśhvamedha yajña, while the period also saw continued flourishing of other schools of thought.

What does this combination of evidence most strongly suggest?

- A. The revival of Vedic traditions necessarily eliminated all other intellectual and religious traditions.
- B. Different religious and intellectual traditions could continue to coexist even when a ruler promoted particular Vedic practices.
- C. Vedic rituals were completely abandoned after the Mauryan period.
- D. Political rulers had no relationship with religious traditions.

27. A student claims:

“The Gupta period is called a classical age simply because the Gupta Empire was politically powerful.”

Which evidence from the chapter would best challenge this claim?

- A. The Guptas controlled parts of northern India.
- B. The period saw developments in Sanskrit literature, mathematics, astronomy, medicine, metallurgy and the arts, supported by relative stability.
- C. Gupta rulers fought several wars.
- D. Gupta rulers issued gold coins.

28. An inscription at Prayāga praises a Gupta ruler for numerous military victories. However, evidence from his southern campaigns shows that some defeated rulers were not permanently absorbed into the Gupta Empire. Which ruler and strategy are most consistent with this evidence?

- A. Samudragupta - military expansion combined with allowing some defeated local rulers to continue governing.
- B. Chandragupta Maurya - complete destruction of all conquered kingdoms.
- C. Ashoka - abandoning warfare before becoming emperor.
- D. Chandragupta II - replacing every regional ruler with Gupta officials.

29. Imagine a pilgrim travelling from southern India to a sacred site in northern India. Along the journey, the pilgrim encounters different languages, foods, customs and communities, while the route also supports markets and local economic activity.

Which conclusion best captures the historical significance of such pilgrimage networks?

- A. They weakened cultural connections because travelers remained within their own regional traditions.
- B. They functioned only as religious routes and had little wider social significance.
- C. They simultaneously supported spiritual life, trade and cultural integration across different regions.
- D. They caused regional languages and traditions to disappear.

30. A forest is protected by a community because it is regarded as the abode of a deity. Hunting and tree-felling are restricted, and the forest also protects biodiversity and a small water body.

Which concept from the chapter most directly explains this situation?

- A. Tirtha - because every sacred place must be a pilgrimage destination
- B. Sacred grove - where religious beliefs can also contribute to conservation of biodiversity and water
- C. Mahājanapada - because forests were organised as ancient states
- D. Janapada - because sacred forests were territories ruled by rājās

31. A student observes two microscopic preparations: one from onion peel and another from the inner lining of the human cheek. Which observation would most strongly distinguish the two?

- A. Onion cells have a cell membrane, whereas cheek cells do not.
- B. Onion cells have a cell wall, whereas cheek cells do not.
- C. Cheek cells have a nucleus, whereas onion cells do not.
- D. Cheek cells contain chloroplasts, whereas onion cells do not.

32. Four observations are made about microorganisms:

- 1. Organism P consists of a single cell and has no well-defined nucleus.
- 2. Organism Q consists of a single cell and has a well-defined nucleus.
- 3. Organism R consists of many cells and lacks chloroplasts.
- 4. Organism S can reproduce only inside a host organism.

Which combination is most consistent with these observations?

- A. P-bacterium; Q-protozoan; R-fungus; S-virus
- B. P-fungus; Q-bacterium; R-alga; S-virus
- C. P-protozoan; Q-bacterium; R-fungus; S-alga
- D. P-virus; Q-protozoan; R-bacterium; S-fungus

33. Two samples of boiled rice are tested with iodine. Sample P is chewed thoroughly before testing, while sample Q is tested without chewing. Which result would provide the strongest evidence that saliva acts on starch?
- A. P and Q both turn equally blue-black.
 - B. P turns blue-black more strongly than Q.
 - C. Q turns blue-black, while P shows no or only a slight blue-black colour.
 - D. Neither P nor Q changes colour.
34. A food particle is moving from the mouth towards the stomach. At one point, the part of the food pipe immediately behind the food contracts while the part immediately ahead relaxes. What is the most likely consequence?
- A. The food moves back towards the mouth.
 - B. The food is pushed towards the stomach.
 - C. The food is chemically digested immediately at that point.
 - D. The food enters the lungs.
35. A cow partially chews grass, swallows it, and later brings partially digested food back into its mouth for further chewing. A bird, on the other hand, has no teeth but possesses a muscular chamber in which food is mechanically broken down, often with the help of swallowed grit.

Which conclusion best explains these two observations?

- A. All animals use identical structures for mechanical digestion.
 - B. The digestive system can show structural adaptations related to the type of food and feeding habit.
 - C. Only animals possessing teeth can mechanically digest food.
 - D. Digestion in birds is entirely chemical, whereas digestion in cows is entirely mechanical.
36. Three identical plants are maintained for two weeks:

Plant	Sunlight	Water
P	✓	✓
Q	✓	✗
R	✗	✓

Which observation would provide the strongest evidence that both factors contribute to plant growth?

- A. P shows better growth than both Q and R.
- B. Q grows better than R.

- C. R grows better than P.
- D. Q and R show identical growth.

37. A green leaf has two regions; X and Y. X receives sunlight and contains chlorophyll. Y is non-green but receives the same sunlight. After suitable treatment, only X turns blue-black with iodine. Which inference is most appropriate?
- A. Sunlight alone is sufficient for starch formation.
 - B. Chlorophyll is associated with starch formation in the presence of sunlight.
 - C. Iodine directly detects chlorophyll.
 - D. Non-green regions of leaves cannot contain living cells.

38. In an experiment, part of a leaf is enclosed in a transparent bottle containing a substance that absorbs carbon dioxide, while another part remains exposed to normal air. Both parts receive sunlight and have chlorophyll. After several hours, only the exposed part gives a positive starch test.

Which variable most directly explains the difference?

- A. Water
 - B. Sunlight
 - C. Chlorophyll
 - D. Carbon dioxide
39. Consider the following sequence:

Food → digestion → absorption → transport → energy release

Which pair correctly identifies the processes occurring at the two indicated stages?

Stage X: Digested food passes through the walls of the small intestine into the body.

Stage Y: Nutrients such as sugar are broken down inside the body to release usable energy.

- A. X-digestion; Y-absorption
 - B. X-absorption; Y-respiration
 - C. X-respiration; Y-digestion
 - D. X-transport; Y-absorption
40. A student makes four claims:
- 1. A bacterium can be unicellular.
 - 2. A fungus may be unicellular or multicellular.
 - 3. Every microorganism is a virus.
 - 4. Viruses differ from other microorganisms because they reproduce only inside a host organism.

Which set contains only correct claims?

- A. 1 and 3
- B. 2 and 3

- C. 1, 2 and 4
D. 1, 2, 3 and 4

41. Find the missing number:

- 2, 6, 12, 20, 30, 42, ?
A. 54
B. 56
C. 58
D. 60

42. Find the missing number: 5, 11, 23, 47, ?

- A. 93
B. 94
C. 95
D. 96

43. If BIRD $\rightarrow$ F T K D

then what would PLANT become?

- A. V P C N R
B. V P C M R
C. T N C P V
D. R N A P V

44. Six students A, B, C, D, E and F sit in a row facing north.

- B sits second to the right of A.
- C sits immediately to the left of D.
- E sits at one of the two ends.
- F sits to the right of B but to the left of E.
- D does not sit at either end.

Who sits immediately to the left of B?

- A. A
B. C
C. D
D. F

45. A woman introduces a man as follows:

“His mother is the only daughter of my father’s only son.” The woman has no sisters. How is the man related to the woman?

- A. Son
- B. Nephew
- C. Brother
- D. Grandson

46. Seven students P, Q, R, S, T, U and V obtained different ranks.

- P ranks higher than Q but lower than R.
- S ranks lower than T but higher than P.
- U ranks higher than R.
- V ranks lower than Q.

Who could occupy 3rd position from the top?

- A. P
- B. Q
- C. R
- D. S

- 47.
- All poets are thinkers.
 - Some thinkers are scientists.
 - No scientist is a musician.
 - Some musicians are poets.

Which conclusion must be true?

- A. Some poets are not scientists.
- B. All thinkers are scientists.
- C. No poet is a scientist.
- D. All scientists are poets.

48. Three students -A, B and C - make the following statements:

- A: "B is lying."
B: "C is lying."
C: "A and B are both lying."

Exactly one of them is telling the truth. Who is telling the truth?

- A. A
- B. B
- C. C
- D. Cannot be determined

49. Find the missing number:

- $4 \rightarrow 18$
- $6 \rightarrow 38$
- $8 \rightarrow 66$

10 → 102

12 → ?

A. 134

B. 138

C. 146

D. 150

50. Five students A, B, C, D and E each choose a different subject: Biology, Chemistry, Physics, Mathematics and History.

- A does not choose Biology or History.
- B chooses Mathematics.
- C chooses neither Physics nor Chemistry.
- D chooses Physics.
- E does not choose Biology.
- The student choosing History sits immediately before the student choosing Chemistry in a separate ordered list of A, B, C, D and E.

Which of the following must be true?

A. A chooses Chemistry.

B. C chooses History.

C. E chooses Chemistry.

D. A chooses Physics.

51. On 1 February 2026, Union Finance Minister Nirmala Sitharaman presented the Union Budget 2026–27.

This was her:

A. Seventh consecutive Union Budget

B. Eighth consecutive Union Budget

C. Ninth consecutive Union Budget

D. Tenth consecutive Union Budget

52. On 19 June 2026, Kerala's revised Budget for 2026–27 was presented. Who presented it?

A. K. N. Balagopal

B. V. D. Satheesan

C. Pinarayi Vijayan

D. Ramesh Chennithala

53. The 2026 G7 Summit was held in Évian-les-Bains, France. Which country participated as an invited partner?

A. India

B. Pakistan

C. Sri Lanka

D. Nepal

54. The Cockroach Janata Party (CJP) emerged as a satirical youth movement in 2026. Its unusual name was inspired by a controversial remark comparing unemployed youth to “cockroaches.” Who made the remark?
- A. Justice Surya Kant
 - B. Justice D. Y. Chandrachud
 - C. Justice Sanjiv Khanna
 - D. Justice B. R. Gavai
55. Samuel Moutoussamy, who attracted attention in India because of his Indian ancestry, represented which country at the 2026 FIFA World Cup?
- A. India
 - B. France
 - C. Democratic Republic of the Congo
 - D. Cameroon
56. Christopher Nolan’s *The Odyssey* features Telemachus, the son of Odysseus. Who plays the role of Telemachus in the film?
- A. Robert Pattinson
 - B. Tom Holland
 - C. Austin Butler
 - D. Timothée Chalamet
57. June 2026, the 12th International Day of Yoga was celebrated with the theme “Yoga for Healthy Ageing.” In which city did Prime Minister Narendra Modi lead the main national celebration?
- A. New Delhi
 - B. Kolkata
 - C. Ahmedabad
 - D. Mumbai
58. Which Indian space company led the consortium approved for an Earth Observation satellite constellation under a Public–Private Partnership model in 2026?
- A. Skyroot Aerospace
 - B. Pixxel
 - C. Agnikul Cosmos
 - D. Dhruva Space
59. World Environment Day was observed on 5 June 2026. Which action was highlighted by the UN Secretary-General as essential for addressing the climate crisis?
- A. Increasing dependence on fossil fuels
 - B. Cutting emissions and accelerating the transition towards renewable energy
 - C. Expanding coal production
 - D. Reducing Forest protection measures
60. At the 98th Academy Awards, held on 15 March 2026, which film won Best Picture?

- A. *Sinners*
- B. *Hamnet*
- C. *One Battle after Another*
- D. *Frankenstein*

61. The scientist's conclusion was tentative, as the available evidence was insufficient to establish the theory conclusively. What does tentative mean here?
- A. Completely certain
 - B. Based on incomplete evidence and therefore subject to change
 - C. Deliberately false
 - D. Supported by overwhelming evidence
62. Choose the grammatically correct sentence.
- A. Neither the students nor the teacher were aware of the change.
 - B. Neither the students nor the teacher was aware of the change.
 - C. Neither the teacher nor the students was aware of the change.
 - D. Neither the teacher or the students were aware of the change.
63. Although the politician's speech was eloquent, it contained very little evidence to support his claims. Which interpretation is most accurate?
- A. The speech was poorly expressed and unsupported.
 - B. The speech was persuasive in expression but weak in evidence.
 - C. The speech was factually correct and scientifically proven.
 - D. The speech was deliberately confusing and meaningless.
64. Choose the best version of the sentence: Having completed the experiment, the results were carefully analyzed by the students.
- A. Having completed the experiment, the results were carefully analyzed by the students.
 - B. After completing the experiment, the students carefully analyzed the results.
 - C. The results, having completed the experiment, were carefully analyzed by the students.
 - D. The students, the experiment having completed, carefully analyzed the results.
65. Read the statement: The museum was crowded throughout the morning. Surprisingly, however, very few visitors entered the new exhibition hall. Which inference is most reasonable?
- A. The museum was closed in the morning.
 - B. The new exhibition hall was necessarily unpopular.
 - C. The visitors were concentrated in other parts of the museum.
 - D. No visitor entered the museum.
66. Choose the pair that correctly completes the sentence:
- The teacher tried to the students that the examination was fair, but the students remained.....
- .
- A. assure; doubtful
 - B. ensure; doubtful

- C. insure; dubious
- D. assure; suspiciously

67. Choose the sentence with the correct use of the conditional.

- A. If I would have known about the problem, I would help you.
- B. If I had known about the problem, I would have helped you.
- C. If I knew about the problem, I would have helped you yesterday.
- D. If I have known about the problem, I would help you.

68. Arrange the following sentences to form a coherent paragraph:

- P. As a result, many species are losing their natural habitats.
- Q. Human activities have significantly altered many ecosystems.
- R. Forests are cleared for agriculture, settlements and industries.
- S. This change is particularly noticeable in regions experiencing rapid development.

Which is the correct order?

- A. $Q \rightarrow R \rightarrow P \rightarrow S$
- B. $R \rightarrow Q \rightarrow S \rightarrow P$
- C. $Q \rightarrow P \rightarrow R \rightarrow S$
- D. $S \rightarrow Q \rightarrow R \rightarrow P$

69. Read the passage:

A student who memorizes every formula may perform well when a familiar question appears. However, when the same principle is presented in an unfamiliar situation, memorization alone may not be sufficient. Understanding allows the student to recognize the underlying relationship and apply it in a new context.

Which statement best represents the author's central idea?

- A. Memorization is useless in education.
- B. Students should avoid learning formulas.
- C. Understanding enables knowledge to be transferred to unfamiliar situations.
- D. Familiar questions are always easier than unfamiliar questions.

70. Consider the sentence: "The evidence does not prove that the suspect is innocent." Which statement is logically equivalent?

- A. The evidence proves that the suspect is guilty.
- B. The suspect is definitely guilty.
- C. The evidence is insufficient to establish the suspect's innocence.
- D. The suspect has been proved to be neither innocent nor guilty.

71. During a school trip, a student notices that a classmate has fallen and is bleeding heavily from the knee. The student is conscious and able to speak. What should be done first?

- A. Immediately give the injured student water.
B. Apply firm pressure to the bleeding area with a clean cloth or dressing.
C. Ask the student to walk around to check whether the injury is serious.
D. Apply toothpaste to stop the bleeding.
72. A student receives ₹500 for a month and plans to spend ₹450 immediately because “there is still ₹50 left.” Which approach demonstrates better financial decision-making?
A. Spend the ₹450 first and decide later what to do with the ₹50.
B. Borrow additional money whenever the ₹50 is insufficient.
C. Plan essential spending first, keep some money as savings and then decide about optional spending.
D. Spend the entire ₹500 so that no money remains unused.
73. You receive a message saying:

“Congratulations! You have won ₹50,000. Click this link immediately and enter your bank details to claim the prize.”

What is the safest response?
A. Click the link but do not share the password.
B. Forward the message to friends to check whether it is genuine.
C. Avoid the link and verify the claim through an independent, official source.
D. Reply with your bank account number but not your PIN.
74. Four students are working on a group project. Two students are doing almost all the work, while the other two are barely participating. Which response demonstrates the best teamwork?
A. Complete the entire project without informing the others.
B. Publicly blame the students who are not contributing.
C. Discuss the problem, divide responsibilities clearly and agree on deadlines.
D. Remove the two students from the group immediately.
75. A friend tells you a secret and says, “Please don’t tell anyone.” Later, you realise that the information suggests that your friend may be in serious danger.

Which response is most appropriate?
A. Keep the secret under every circumstance.
B. Share it publicly so that others can help.
C. Tell a trusted responsible adult who can help keep the friend safe.
D. Post an anonymous message on social media.
76. A student is angry because a classmate has accused him of damaging a school laboratory instrument. Before responding, which sequence shows the best emotional self-management?
A. React immediately → argue loudly → investigate later.
B. Pause → regulate the emotion → understand the facts → respond calmly.
C. Ignore the accusation → spread the story to others.
D. Immediately accuse the classmate of lying.

77. A family has ₹10,000 available for an unexpected month in which several expenses arise:

- Medicine - ₹3,000
- School requirement - ₹2,000
- Entertainment - ₹2,500
- Essential household repair - ₹2,000
- Unnecessary shopping - ₹1,500

If the family cannot afford everything, which principle should guide the decision?

- A. Choose the expenses that provide the most entertainment.
- B. Give equal priority to every expense.
- C. Prioritize essential needs and postpone non-essential spending.
- D. Spend first and worry about the remaining money later.

78. While cycling, a student reaches a busy road intersection. The traffic signal changes to green, but a vehicle approaching from the side appears to be moving too fast.

What is the safest decision?

- A. Cross immediately because the signal is green.
- B. Speed up and cross before the vehicle arrives.
- C. Remain alert, assess the traffic and cross only when it is safe.
- D. Close the eyes briefly and trust the signal.

79. A student finds a wallet containing money and an identification card in the school corridor. What action best demonstrates integrity?

- A. Keep the money and throw away the wallet.
- B. Give it to a trusted school authority so that the owner can be identified.
- C. Ask friends whether they want to divide the money.
- D. Keep it until someone asks for it.

80. A student has an examination in three days but has completed only half the syllabus. Which plan is most likely to be effective?

- A. Stay awake all night before the examination and study everything at once.
- B. Spend most of the remaining time worrying about the unfinished syllabus.
- C. Identify priorities, create a realistic study schedule, take short breaks and revise important concepts.
- D. Study only the easiest topics because they can be completed quickly.

81. With reference to India's space-based Earth observation and scientific missions, consider the following statements:

1. Cartosat satellites are primarily intended for high-resolution Earth observation and applications such as cartography, urban planning and disaster management.
2. Bhuvan is an ISRO geoportal that provides geospatial information and Earth-observation-based services for India.
3. AstroSat is designed for astronomical observations of celestial objects across multiple wavelengths.

4. Aditya-L1 is intended to study the Sun from a vantage point around the first Lagrange point of the Sun–Earth system.

Which of the statements given above are correct?

- A. 1 and 2 only
- B. 1, 3 and 4 only
- C. 2, 3 and 4 only
- D. 1, 2, 3 and 4

82. With reference to the consequences of cyclones and measures for reducing their impact, consider the following statements:

1. The loss of strength of a cyclone after it moves over land necessarily brings its destructive effects to an end.
2. The water pushed towards the shore by strong cyclone winds can cause flooding not only in coastal areas but also in areas located far from the sea.
3. Seawater entering inland areas can simultaneously affect water security and agricultural productivity by contaminating drinking-water sources and reducing soil fertility.
4. The heavy rainfall accompanying a cyclone can contribute to both river overflow and landslides, while fallen trees and debris can obstruct roads and hinder relief efforts.
5. Weather-monitoring satellites assist in tracking cyclones and predicting their paths, while periodic alerts and warnings help people prepare for their impacts.

Which of the statements given above are correct?

- A. 2 and 3 only
- B. 2, 3, 4 and 5 only
- C. 1, 2, 3 and 4 only
- D. 1, 2, 3, 4 and 5

83. Consider the following observations based on the relationship between mass and weight:

An object has a mass of 1 kg. Its weight on different celestial bodies is given as follows:

Celestial body	Weight
Earth	10 N
Moon	1.6 N
Mars	3.8 N
Venus	9 N
Jupiter	25.4 N

Based on the above data, consider the following statements:

1. The weight of the object on the Moon is 84% less than its weight on Earth.
2. The weight of the object on Mars is 62% less than its weight on Earth.
3. The weight of the object on Venus is 10% less than its weight on Earth.

4. The weight of the object on Jupiter is 254% greater than its weight on Earth.

Which of the statements given above are correct?

- A. 1 and 2 only
- B. 1, 2 and 3 only
- C. 2, 3 and 4 only
- D. 1, 2, 3 and 4

84. Consider the following statements with reference to rechargeable battery technology:

- 1. The widespread use of lithium-ion batteries, together with the geographically limited availability of lithium and cobalt, has encouraged countries to reduce their dependence on these materials by replacing lithium-ion batteries with solid-state batteries.
- 2. The limited geographical distribution of lithium and cobalt is one reason for the simultaneous pursuit of resource security, battery recycling and technological alternatives.
- 3. Solid-state batteries are described as a technological development in which solid materials replace the liquid or paste-like electrolytes, with the potential to make batteries safer, faster-charging and longer-lasting.
- 4. Since solid-state batteries are expected to charge faster and last longer, they are the current most common rechargeable battery technology.
- 5. The importance of improving rechargeable batteries is linked not merely to their performance characteristics but also to the broader movement towards environmentally friendly sources of electrical power.

How many of the statements given above are incorrect?

- A. All five
- B. Only three
- C. Only two
- D. Only one

85. Consider the following Assertion (A) and Reason (R):

Assertion (A): The poles of an electromagnet can be reversed without changing the number of turns of its coil.

Reason (R): Increasing the number of turns of the coil makes the electromagnet stronger.

Select the correct answer using the code given below:

- 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.

86. Consider the following situation:

A sonar transmitter on a ship emits a single pulse of sound consisting of 12 complete oscillations. The sound waves have a frequency of 8.0 kHz and travel through seawater at a speed of $1.5 \times 10^3 \text{ m s}^{-1}$.

If the spatial extent of the pulse is taken as the distance travelled by the wave during the time required to complete all 12 oscillations, what is the length of one pulse?

- A. 0.188 m
- B. 2.25×10^3 m
- C. 2.25 m
- D. 1.44×10^5 m

87. Consider the following situation:

Two objects P and Q are initially at rest. The same constant resultant force acts on each object for an identical time interval. The mass of P is 10 times the mass of Q. What is the ratio of the kinetic energy acquired by P to that acquired by Q?

- A. 0.1
- B. 1
- C. 10
- D. 100

88. A body is released from rest and allowed to fall freely under gravity. If d_1 , d_2 , d_3 and d_4 represent the distances covered exclusively during the 1st, 2nd, 3rd and 4th seconds of its motion, respectively, what is the ratio $d_1 : d_2 : d_3 : d_4$?

- A. 1 : 4 : 9 : 16
- B. 1 : 3 : 5 : 7
- C. 1 : 1 : 1 : 1
- D. 1 : 2 : 3 : 4

89. Consider the following situation:

A locomotive of mass 24×10^4 kg pulls six identical trucks, each of mass 6.0×10^4 kg, along a horizontal track at constant speed. The horizontal resistive force acting on each truck is 4000 N.

During the motion, the coupling between the second and third trucks suddenly breaks.

Assuming that the tractive force produced by the locomotive remains unchanged immediately after the coupling breaks, what is the initial acceleration of the locomotive–truck system that remains connected to it?

- A. 0.022 m s^{-2}
- B. 0.133 m s^{-2}
- C. 0.067 m s^{-2}
- D. 0.044 m s^{-2}

90. With reference to the conversion and utilisation of energy in a traditional Himalayan watermill and its modern application, consider the following statements:

1. The downhill movement of water represents a conversion of the potential energy initially possessed by the water into kinetic energy.
2. The kinetic energy acquired by the water is utilised to drive the wheel, thereby setting the wheel into rotational motion.
3. In the traditional gharat or panchakki (traditional water mill), the rotational motion of the wheel is ultimately utilised for generating electricity.

4. In the modern application involving water stored in dams, the potential energy of the stored water is converted into kinetic energy, which is utilised in the generation of electricity.

How many of the statements given above are correct?

- A. Only one
- B. Only two
- C. Only three
- D. All four

91. Two students make these observations:

Student P: "The Gangetic Plains are densely populated mainly because they are close to the sea."

Student Q: "The fertility of the plains is linked to the rivers and the minerals they bring."

Which evaluation is most appropriate?

- A. P is correct; Q is incorrect.
- B. P is incorrect; Q is correct.
- C. Both are correct.
- D. Both are incorrect.

92. Consider the following statements:

- 1. The Himalayas form a natural barrier in the north.
- 2. The Indian Ocean forms a natural boundary to the south.
- 3. The Bay of Bengal forms a natural boundary to the east.
- 4. These geographical features have influenced India's climate, culture and history.

Which of the following is correct?

- A. Only 1 and 2
- B. Only 2 and 3
- C. 1, 2, 3 and 4
- D. Only 1, 3 and 4

93. A region has the following characteristics:

- It receives water from several rivers originating in the Himalayas.
- The rivers bring minerals that enrich the soil.
- Agriculture can therefore support a large population.

Which region is being described?

- A. Thar Desert
- B. Gangetic Plains
- C. Deccan Plateau
- D. Himalayan Mountain Zone

94. At a weather station, the following changes are recorded:

- Air pressure decreases.
- Wind speed increases.
- Wind direction changes.
- Humidity also increases.

A student concludes:

“Only temperature is needed to determine whether the weather is changing.” Which is the best reason to reject the student’s conclusion?

- A. Temperature is not an element of weather.
- B. Weather is determined only by precipitation.
- C. Weather involves several measurable elements, including pressure, wind and humidity.
- D. Weather can be described only through traditional observations.

95. An airport reports that the wind is becoming stronger. The wind vane shows that its direction has changed, while the anemometer records an increasing speed.

Which conclusion is best supported?

- A. The wind vane measures speed and the anemometer measures direction.
- B. Both instruments measure exactly the same property.
- C. The wind vane helps determine direction, while the anemometer measures wind speed.
- D. Neither instrument is useful for weather forecasting.

96. A farmer notices that the wind has become considerably stronger. At the same time, the soil appears to be drying faster.

Which explanation is most consistent with the chapter?

- A. Greater wind speed can increase the rate at which soil dries.
- B. Greater wind speed always increases rainfall.
- C. Wind has no relationship with soil moisture.
- D. Wind increases atmospheric pressure and therefore dries soil.

97. Consider two locations:

- Location X: near the sea and at low altitude
- Location Y: high in the mountains and far from the sea

If both locations are at approximately similar latitudes, which factor would most directly explain why Y is expected to be considerably cooler?

- A. Proximity to the ocean
- B. Altitude
- C. Monsoon winds
- D. Longitude

98. A student records the weather of a city for three consecutive rainy days and concludes:

“This city has a rainy climate.”

Why is this conclusion scientifically weak?

- A. Rainfall is not an element of weather.
 - B. Climate refers to the long-term pattern of weather, not a few days of observation.
 - C. Seasons have no connection with climate.
 - D. Climate can be determined only from temperature.
99. Suppose the monsoon brings less rainfall than usual to a farming region. Which sequence best represents the possible chain of effects?
- A. Poor rainfall → better agricultural production → lower food prices → increased migration
 - B. Poor rainfall → agricultural stress → possible migration → higher food prices
 - C. Poor rainfall → increased water availability → increased industrial activity
 - D. Poor rainfall → increased crop production → lower inflation
100. A coastal city experiences heavy rainfall. Its drainage system cannot handle the water, while extensive concrete and asphalt surfaces prevent much of the rainwater from being absorbed into the ground.
- Which conclusion is most consistent with the chapter?
- A. Heavy rainfall alone completely determines the severity of urban flooding.
 - B. Urban flooding can be intensified by both inadequate drainage and surfaces that restrict water absorption.
 - C. Concrete surfaces increase the absorption of rainwater.
 - D. Flooding in cities occurs only when cyclones make landfall.

-----*Space for rough work*-----

-----*Space for rough work*-----

-----*Space for rough work*-----

-----*Space for rough work*-----