Question Booklet Sl. No.
3002125

Series
A

CODE : HEM – 7/24

Write here Roll Number and Answer Sheet No.

A

Roll No.

Answer Sheet No.

Duration : 2 Hours

Total Marks : 200

Declaration by Invigilator :
I Certify that I have checked that the Roll Number and the Answer Sheet Number written by the Candidate on the question paper and the OMR Sheet are correct and the Answer Sheet Number matches the Question Booklet Number exactly.

Signature of the Invigilator with Name

Declaration by Candidate :
I undertake not to employ any unfair means in this exam. I have checked the Question Booklet Number and the Answer Sheet Number and both are identical and have been correctly entered by me wherever indicated.

Signature of the Candidate with Name

Read the following instructions carefully before you begin to answer the questions.

IMPORTANT INSTRUCTIONS TO CANDIDATES

1. The Roll No. is a 7 digit No., the candidate needs to circle the Roll No. in the Answer Sheet.
2. The appropriate Circle should be shaded for Roll No. This should be done carefully because only the shaded circles are scanned.
3. Valuation of Answer Sheet will be done on the computer. Candidate should not make any stray marks on the Answer Sheet, tamper with or mutilate it. Otherwise it will not be evaluated.
4. Please check all the pages of the Booklet carefully. In case of any defect, please ask the Invigilator for replacement of the Booklet.
5. You must not tear off or remove any sheet from this Booklet. The Answer Sheet must be handed over to the Invigilator before you leave the Examination Hall.
6. All questions are compulsory and each Question carries 2 marks.
7. **There are no negative marking for wrong answers.**
8. This Booklet contains 100 questions. Candidates must note that there will be 4 Sections in the question paper :

Sections	Test Components	No. of Questions	Page No.
A	General Awareness	1-25	5 – 8
B	General Intelligence and Reasoning Ability	26-50	9 – 13
C	Arithmetical and Numerical Ability	51-75	14 – 17
D	Test of English Language and Comprehension	76-100	18 – 23

9. Use of Calculator/Palmtop/Laptop/Other Digital Instrument/Mobile/Cell Phone/Pager is **not** allowed.
10. Candidates found guilty of misconduct/using unfair means in the Examination Hall will be liable for appropriate penal/legal action.
11. **No Rough Work is to be done on the Answer Sheet and only single OMR Answer Sheet will be provided.**
12. This booklet contains **24** pages.
13. **Directions** : Each question or incomplete statement is followed by four alternative suggested answers or completions. In each case, you are required to select the one that correctly answers the question or completes the statement and blacken (●) appropriate circle a, b, c or d by Black Ball-Point Pen provided by the Board against the question concerned in the Answer Sheet.
14. Mark your answer by shading the appropriate circle against each question. The circle should be shaded completely without leaving any space. The correct method of shading is given below.

Wrong Method	Wrong Method	Wrong Method	Correct Method
○ ⊗ ○ ○	○ ⊘ ○ ○	○ ◉ ○ ○	○ ● ○ ○

The Candidate must mark his/her response after careful consideration, as it is not possible to change the response once it is marked.

15. There is only one correct answer to each question. You should blacken (●) the circle of the appropriate column, viz., a, b, c or d. If you blacken (●) more than one circle against any one question, the answer will be treated as wrong.
16. Use the space for rough work given at the beginning of the Question Booklet only and not on the Answer Sheet.
17. **You are NOT required to mark your answers in this Booklet. All answers must be indicated in the Answer Sheet only.**

A QUESTION BOOKLET NO
3002125
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HEM - 7/24

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SECTION – A

(General Awareness)

1. Who is the writer of the book 'Natural History' ?

   (a) Charles Darwin
   (b) Pliny
   (c) Aristotle
   (d) Carl Linnaeus

2. The Allahabad pillar inscription was composed by

   (a) Kalidasa
   (b) Kalhana
   (c) Harisena
   (d) Vishakhadatta

3. Namdapha Wildlife Sanctuary declared as National Park in the year

   (a) 1983
   (b) 1975
   (c) 1986
   (d) 1970

4. Advaita philosophy was advocated by

   (a) Adi Shankaracharya
   (b) Ramanujacharya
   (c) Ramanand
   (d) Madhavacharya

5. The Radhakrishnan Commission was related to which of the following ?

   (a) Banking Sector
   (b) Agricultural Development
   (c) Education
   (d) Industrial Policy

6. On which date did the Jallianwala Bagh Massacre take place ?

   (a) March 23, 1919
   (b) April 13, 1919
   (c) August 15, 1919
   (d) December 25, 1919

7. Which is the highest mountain on the Moon ?

(a) Mons Huygens
(b) Mons Hadley
(c) Mons Penck
(d) Mons Bradley

8. Where is Raja Ampat Islands located ?

(a) Indonesia
(b) Thailand
(c) Philippines
(d) Malaysia

9. Which country is called as the Land of Mountains and Rivers ?

(a) Thailand
(b) Myanmar
(c) Laos
(d) Cambodia

10. Which of the following oceans are connected by Panama Canal ?

(a) Atlantic Ocean and Indian Ocean
(b) Pacific Ocean and Indian Ocean
(c) Atlantic Ocean and Pacific Ocean
(d) Arctic Ocean and Pacific Ocean

11. Who was the first person to reach the South Pole of Antarctica ?

(a) Robert Falcon Scott
(b) Ernest Shackleton
(c) Roald Amundsen
(d) Edmund Hillary

12. The city of Paris in France is located on

(a) Seine River
(b) Loire River
(c) Rhône River
(d) Garonne River

13. Which State of India has the longest coastline ?

(a) Maharashtra
(b) Tamil Nadu
(c) Gujarat
(d) Andhra Pradesh

14. Where is the Headquarters of the East Coast Railway Zone situated ?

(a) Vishakhapatnam
(b) Kolkata
(c) Chennai
(d) Bhubaneshwar

15. When is International Biodiversity Day observed ?

(a) April 22
(b) May 22
(c) June 5
(d) September 16

16. The Similipal Tiger Reserve is situated in the State of

(a) Odisha
(b) Maharashtra
(c) Andhra Pradesh
(d) Madhya Pradesh

17. Where is the Headquarters of the Indian Council of Forestry of Research and Education located ?

(a) Bhopal
(b) Dehradun
(c) Bengaluru
(d) Pune

18. How many official languages are there in the 8th Schedule of Indian Constitution at present ?

(a) 18
(b) 20
(c) 22
(d) 34

19. Bardo Chham dance is performed in which State ?

(a) Bihar
(b) Arunachal Pradesh
(c) Jharkhand
(d) Kerala

20. Which Schedule of the Indian Constitution deals with the distribution of power between the Central and State Governments ?

(a) Fifth Schedule
(b) Seventh Schedule
(c) Ninth Schedule
(d) Eleventh Schedule

21. How many subjects are listed in the Concurrent List of the Indian Constitution ?

(a) 24
(b) 52
(c) 78
(d) 104

22. The Right to Information Act came into force on

(a) 12 September, 2001
(b) 12 October, 2005
(c) 12 December, 2000
(d) 12 November, 2020

23. Which of the following Article of the Indian Constitution deals with the special provisions for the State of Arunachal Pradesh ?

(a) 371 B
(b) 371 H
(c) 371 D
(d) 371 I

24. The term Radioactivity was given by

(a) Michael Faraday
(b) Marie Curie
(c) Dmitri Mendeleev
(d) John Dalton

25. Who is known as the father of Botany ?

(a) Aristotle
(b) Linnaeus
(c) Theophrastus
(d) Darwin

SECTION – B
(General Intelligence and Reasoning Ability)

Direction (Q. No. 26 and 27) : Arrange the following words in a logical and meaningful order and choose the correct order from the alternatives given below them.

26. 1. Infant
    2. Old age
    3. Adult
    4. Adolescent
    5. Child

    (a) 1, 5, 4, 3, 2
    (b) 5, 4, 3, 2, 1
    (c) 2, 3, 4, 5, 1
    (d) 3, 4, 2, 1, 5

27. 1. Quadrilateral
    2. Heptagon
    3. Pentagon
    4. Hexadecagon
    5. Dodecagon

    (a) 4, 5, 2, 3, 1
    (b) 1, 3, 5, 2, 4
    (c) 1, 5, 3, 2, 4
    (d) 4, 2, 3, 5, 1

28. Which of the following word cannot be formed by using the letters of the given capital word ?

    APPLICATION

    (a) POLONIA
    (b) POINT
    (c) OPTICAL
    (d) ANTIC

29. Consider the following statements :

i. A fruit basket contains more apples than lemons.

ii. There are more lemons in the basket than there are oranges.

iii. The basket contains more apples than oranges.

If the first two statements are true, then the third statement is

(a) True

(b) False

(c) Uncertain

(d) More information required

30. In a school, there were five teachers A, B, C, D and E. A and B were teaching Hindi and English. C and B were teaching English and Geography. D and A were teaching Mathematics and Hindi. E and B were teaching History and French. Who among the following teachers were teaching maximum number of subjects ?

(a) A (b) B (c) C (d) D

Direction (Q. No. 31 – 34) : Choose the correct word to complete the following analogies from the alternatives given below them.

31. Brother : Sister : : Son : _____

(a) Aunt (b) Uncle

(c) Daughter (d) Grand daughter

32. Cardiology : Heart : : Botany : _____

(a) Etymology (b) Animals

(c) Plants (d) Brain

33. Snake : Hiss : : Bell : _____

(a) Roars (b) Trumpets

(c) Chimes (d) Splash

34. Ocean : Water : : Glacier : _____

(a) Refrigerator (b) Ice

(c) Mountain (d) Cave

35. Roshan is taller than Hardik who is shorter than Sushil. Niza is taller than Harry but shorter than Hardik. Sushil is shorter than Roshan. Who is the tallest ?

(a) Roshan (b) Sushil

(c) Niza (d) Hardik

Direction (Q. No. 36 – 38) : Choose the appropriate alternative for the missing letters in the following series.

36. SCD, TEF, UGH, _____, WKL.

(a) CMN (b) UJI

(c) VIJ (d) IJT

37. ELFA, GLHA, ILJA, _____, MLNA.

(a) OLPA (b) KLMA

(c) LLMA (d) KLLA

38. CMM, EOO, GQQ, _____, KUU.

(a) GRR (b) GSS

(c) ISS (d) ITT

Direction (Q. No. 39 – 43) : Choose the odd man out from the following alternatives.

39. (a) January (b) March

(c) June (d) December

40. (a) Lion (b) Cheetah

(c) Tiger (d) Elephant

41. (a) Liver (b) Ear

(c) Kidney (d) Lungs

42. (a) Football (b) Volleyball
(c) Cricket (d) Chess

43. (a) Arithmetic
(b) Trigonometry
(c) Quantum Machines
(d) Geometry

44. In a row of students in a class, Ravi is 17th from either end of the row. How many students are there in the class ?
(a) 34 (b) 35
(c) 33 (d) 19

45. In a cricket season, India defeated Australia twice, West Indies defeated India twice, Australia defeated West Indies twice, India defeated New Zealand twice and West Indies defeated New Zealand twice. Which country has lost more number of times ?
(a) India
(b) Australia
(c) New Zealand
(d) West Indies

46. If A is the brother of B, B is the sister of C and C is the father of D, how is D related to A ?
(a) Brother
(b) Sister
(c) Nephew
(d) Cannot be determined

47. Select the combination of numbers so that letters arranged accordingly form a meaningful word.

O	R	T	U	D	P	C
1	2	3	4	5	6	7

(a) 2, 3, 1, 4, 5, 6, 7
(b) 6, 7, 1, 2, 4, 3, 5
(c) 6, 2, 1, 5, 4, 7, 3
(d) 6, 2, 1, 5, 4, 3, 7

48. Imagine you have planned to prepare upcoming competitive exam, select the correct order from the following information.

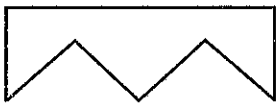
1. Scheduling time table/allocation of study hours.
2. Collecting the information regarding how to prepare study notes/books to refer/ websites to learn.
3. Practising, revising and attempting mock tests.
4. Research on the exam patterns, subjects to study, mode of exams.

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

49. Which of the following is an example of having self-discipline ?

(a) Saving your allowance for a month so that you have enough to buy something you really want.
(b) Spending your money as soon as you get it.
(c) Eating a whole box of candy all at once.
(d) Looking for a way to avoid doing your choices.

50. Choose the correct figure from the given alternatives which will exactly fit into the given figure to make it rectangle.



(a) 
(b) 
(c) 
(d) 

SECTION – C
(Arithmetical and Numerical Ability)

51. If two-third of a number is 48, then 30% of the number is

(a) 21.6 (b) 20 (c) 16 (d) 21

52. If $\frac{3}{10}, \frac{5}{20}, \frac{3}{4}, \frac{3}{5}$ are arranged in descending order of their values, then which one will be the last ?

(a) $\frac{3}{10}$ (b) $\frac{5}{20}$ (c) $\frac{3}{4}$ (d) $\frac{3}{5}$

53. The ratio of 50 meters to 1 kilometer is

(a) 1 : 8 (b) 1 : 20 (c) 2 : 15 (d) 20 : 1

54. If the LCM and HCF of 2 numbers 64 and x are 160 and 16 respectively, then the value of x is

(a) 40 (b) 16 (c) 80 (d) 36

55. The edges of 3 cubes of a metal are 3 cm, 4 cm and 5 cm. They are melted and recasted into a single new cube. The edge of the new cube is

(a) 12 cm (b) 6 cm
(c) 14 cm (d) None of these

56. If Rs. 100 is divided among A and B in the ratio 3 : 5, then B's share is

(a) Rs. 62.5 (b) Rs. 72.5
(c) Rs. 24 (d) Rs. 56

57. In a right angled triangle, the ratio of the length of shorter side to the length of longer side is 5 : 12. If the length of hypotenuse is 65 cm, then the perimeter of the triangle is

(a) 150 cm (b) 100 cm
(c) 82 cm (d) None of these

58. There are 800 students in a National Public School, each of whom takes exactly one of the 4 Science courses. If $\frac{1}{5}$ take Earth Science, $\frac{2}{5}$ take Biology, $\frac{3}{10}$ take Chemistry, then number of students who take Physics is

(a) 90 (b) 80 (c) 75 (d) 100

59. A student has to score 50% marks to pass. He gets 100 and yet fails by 50 marks. The maximum marks should be

(a) 300 (b) 400

(c) 250 (d) None of these

60. The value of $\frac{0.23 - 0.023}{0.0023 \div 23}$ is

(a) 1 (b) $\frac{1}{10}$ (c) 2070 (d) 2170

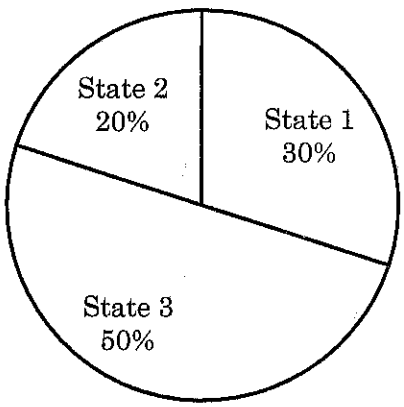
61. If 15 chairs cost Rs. 7,500, then the cost of 120 chairs at the same price is

(a) Rs. 50,000 (b) Rs. 60,000

(c) Rs. 62,000 (d) Rs. 6,00,000

Direction (Q. No. 62 and 63) : Study the following pie-chart and answer the questions given below it.

Percentage wise distribution of students in 3 different States.



Total number of students = 1 crore (in 3 States)

62. The number of students in State 3 is

(a) 50 lakhs (b) 25 lakhs

(c) 20 lakhs (d) None of these

63. The difference between the number of students in State 1 and State 2 is

(a) 1000000 (b) 100000

(c) 50000 (d) None of these

64. If a car covers a distance of 135 kms in 90 minutes, then the speed of the car is

(a) 90 km/hr (b) 100 km/hr

(c) 85 km/hr (d) 45 km/hr

65. The cost of T.V. increased by 20 % and then decreased by 5%. The percentage increase in the original cost is

(a) 10% (b) 15%

(c) 14% (d) None of these

66. In a hall, 192 children are made to sit in rows and columns. The number of rows is 4 more than the columns. The number of children in each column is

(a) 16 (b) 12

(c) 14 (d) 18

67. If the area of a circle is 154 cm^2, then the circumference of the circle is

(a) 40 cm (b) 44 cm

(c) 54 cm (d) 59 cm

68. The value of $\frac{\sqrt{32}+\sqrt{48}}{\sqrt{8}+\sqrt{12}}$ is

(a) 2 (b) $\sqrt{3}$

(c) $\sqrt{2}$ (d) None of these

69. If 3 pumps can empty a tank in 2 days by working 8 hours a day, then how many hours must 4 pumps work to empty the tank in one day ?

(a) 12 hours (b) 15 hours

(c) 9 hours (d) 10 hours

70. Successive discount of 20% and 15% are equivalent to a single discount of

(a) 32%
(b) 35%
(c) 17.5%
(d) 22.5%

71. Average age of 36 children of a class is 15 years. 12 more joined the class whose average age is 16 years. The average age of 48 children together is

(a) 15.25 years
(b) 15.5 years
(c) 15.3 years
(d) 15.4 years

72. If $4^{x+3} = 8^{x-1}$, then the value of x is

(a) 10
(b) 8
(c) 9
(d) 3

73. If a = 99.9 and b = 81.9, then the value of $\frac{a^2 - b^2}{a + b}$ is

(a) 9
(b) 9.9
(c) 18
(d) None of these

74. If Rs. 10,000 in 2 years amounts to Rs. P at the rate of 10% compound interest per annum, then P =

(a) Rs. 12,000
(b) Rs. 12,100
(c) Rs. 12,500
(d) Rs. 12,700

75. The HCF of $\frac{1}{2}$ and $\frac{1}{3}$ is

(a) 1
(b) $\frac{1}{6}$
(c) 6
(d) $\frac{1}{5}$

SECTION – D
(Test of English Language and Comprehension)

Direction (Q. No. 76 – 78) : Choose the appropriate articles for the following sentences from the alternatives given below them.

76. Summer is _____ hot season.
(a) a (b) an
(c) the (d) none of these

77. _____ book you want is out of stock.
(a) A (b) The
(c) An (d) None of these

78. He can play _____ piano.
(a) a (b) an
(c) the (d) no article required

Direction (Q. No. 79 – 81) : Choose the correctly spelt word from the alternatives given below.

79. (a) utalize (b) utiliz
(c) utilise (d) utilaize

80. (a) dufianse (b) defyance
(c) difiance (d) defiance

81. (a) scintilating (b) scintillating
(c) skintilating (d) scientilating

82. Choose the appropriate phrasal verb for the following sentence from the alternatives given below it.

He has _____ shop as a consultant.
(a) set back (b) set up
(c) set about (d) set in

83. Choose the appropriate complex sentence for the following compound sentence from the alternatives given below it.

We must do our work well, or we stand to lose.

(a) We must do our work not to stand to lose.
(b) If we do not do our work well, we stand to lose.
(c) Do you work well not to stand to lose.
(d) None of the above

84. Choose the appropriate complex sentence for the following simple sentence from the alternative given below it.

I will help you in any possible way.

(a) I will help you possibly.
(b) I will help you in whichever way it is possible.
(c) You may seek help in any way.
(d) None of the above

Direction (Q. No. 85 – 87) : Choose the appropriate tense form of the verb for the following sentences from the alternatives given below them.

85. Our teacher taught us that the earth _____ round the sun.

(a) move (b) moves
(c) had moved (d) has moved

86. I _____ him very well.

(a) know (b) knowing
(c) had known (d) known

87. She _____ table tennis since morning.

(a) play (b) plays
(c) has been playing (d) have been playing

Direction (Q. No. 88 and 89) : Choose the appropriate collective nouns for the following from the alternatives given below them.

88. A _____ of hay.

(a) bundle (b) quiver
(c) squadron (d) crowd

89. A _____ of stairs.

(a) gaggle (b) flight

(c) faggot (d) suite

Direction (Q. No. 90 and 91) : Choose the appropriate active forms of the following sentences from the alternatives given below them.

90. The mouse was killed by the cat.

(a) The mouse was killed by the cat.

(b) The cat was killed by the mouse.

(c) The cat killed the mouse.

(d) Cat had killed the mouse.

91. He will be elected a director by the shareholders.

(a) He would be elected as director by the shareholders.

(b) He is elected as director by the shareholders.

(c) The shareholders will elect him a director.

(d) None of these

Direction (Q. No. 92 and 93) : Choose the appropriate simple sentences for the following complex sentences from the alternatives given below them.

92. It is reported that no one has won a majority.

(a) It is reported, no one has won majority.

(b) Reportedly, no one has won a majority.

(c) It was reported that no one win the majority.

(d) No change required

93. Jeeva cannot hear unless she uses a hearing-aid.

(a) Jeeva cannot hear unless she uses a hearing-aid.

(b) Jeeva cannot hear until she uses a hearing-aid.

(c) Jeeva cannot hear without a hearing-aid.

(d) Jeeva cannot hear if she doesn't use a hearing-aid.

Direction (Q. No. 94 and 95) : In the following questions, the first and the last parts of the sentence are numbered as 1 and 6. The rest of the sentence is split into four parts and named P, Q, R and S. These four parts are not given in their proper order. Read the sentence and choose the appropriate combination from the alternatives given below them.

94. 1. If the sovereignty

P. of the people and their elected representatives,

Q. and the unity

R. in the hands

S. of a country is not safe

6. it cannot be safe in any other hands.

(a) PQRS (b) QSRP

(c) RPQS (d) SRPQ

95. 1. The leader's public meeting was disrupted

P. by a section of the audience

Q. any firm assurance

R. he had not given them

S. who felt that

6. for the solution of their problems.

(a) PSRQ (b) QPSR

(c) RQPS (d) SRQP

Direction (Q. No. 96 and 97) : In the following questions, sentences has been split into four parts and the parts have been presented in a jumbled form. Choose the appropriate order from the alternatives given below them to produce the original sentence.

96. 1. of the multitude to bark at

2. eminent men as dogs do

3. it is the practice

4. at strangers

(a) 3, 2, 1, 4 (b) 3, 1, 2, 4

(c) 2, 1, 3, 4 (d) 3, 1, 4, 2

97. 1. to the rocks below
2. my grip
3. and I was about to plummet
4. on the branch was weakening

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

Direction (Q. No. 98 – 100) : Read the following passage and answer the questions by choosing the appropriate alternatives given below them.

Where have all the honeybees gone ? Last summer was less "buzzy" than usual. That's because not many honeybees were humming around. What happened ? No one knows for sure, but scientists have several theories based on facts they've observed.

Some scientists think the cold winter last year killed a lot of the bees. Unlike most insects, bees usually live through the winter. They spend the cold months inside their warm hives, eating honey. Last winter was extra long and cold. The bees might have run out of food before spring.

But Michael Amspoker, a scientist and beekeeper, says that honeybees in America have a bigger problem than cold weather. A mite that is harmful to bees has invaded the United States from other parts of the world.

The mite, called the Varroa (va-RO-uh) mite, is a "flat little bean-shaped critter that lives on the bees' bodies", Amspoker says. The mites live by sucking the bees' body fluids. That weakens – and probably kills – the bees.

The mites are bad news for humans, too. Bees pollinate plants that produce many foods that humans eat. Bees also make honey and wax that humans use.

Scientists are fighting to save the honeybees. They have a secret weapon! A type of bee called the Yugo bee knows how to fight off the Varroa mites. The Yugo bees come from an area in Europe that was once Yugoslavia. They pick the mites up with their legs and crush them in their jaws.

Scientists will help American beekeepers introduce the Yugo queens into honeybee colonies here. Those Yugo queens should lay eggs that will hatch into a new generation of bees. Scientists hope that those baby bees will take after their mothers and know how to kill Varroa mites.

Will the scientists' experiment work ? Wait until spring. Then see if you hear more buzzing.

98. Mites weaken bees by
    (a) stealing their honey
    (b) sucking out their body fluids
    (c) crushing them in their jaws
    (d) killing flowers

99. People need bees because bees
    (a) are friendly insects
    (b) live in beehives
    (c) make a nice buzzing sound
    (d) pollinate plants that humans eat

100. Scientists hope that the Yugo bees brought to America will
    (a) buzz loudly
    (b) produce baby bees that know how to fight the Varroa mite
    (c) sting the honeybees
    (d) none of the above