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800571

CET 2022

ADDITIONAL DIRECTORATE GENERAL OF ARMY EDUCATION (AE-2)

QUESTION PAPER FOR ADMISSION TO RASHTRIYA MILITARY SCHOOLS AT CHAIL, AJMER, BELGAUM, BENGALURU AND DHOLPUR FOR CLASS IX FOR ACADEMIC SESSION 2023-24

PARTS	NO OF QUESTIONS	MAX MARKS	PAGE
PART-I			
SECTION-I : ENGLISH	50	50 MARKS	02 TO 08
SECTION-II : HINDI	20	20 MARKS	08 TO 10
SECTION-III : SOCIAL SCIENCE	30	30 MARKS	11 TO 13
PART-II			
SECTION-IV : MATHEMATICS	50	50 MARKS	13 TO 19
SECTION-V : SCIENCE	50	50 MARKS	19 TO 23

INSTRUCTIONS

1. Do not open this test booklet until you are asked to do so. Immediately after the commencement of the examination, you should check that this test booklet does not have any unprinted or torn or missing pages or questions etc. If so, get it replaced by a completely new test booklet.

2. You have to enter your roll number on the test booklet in the space provided at page number 2.

3. This test booklet contains 200 questions in five sections divided into Part-I & Part-II, further subdivided into five sections as mentioned above. Each question comprises four responses (answers). You will select the response which you want to mark on the answer sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case choose only one response for each question. If more than one circle is shaded, it will be treated as wrong answer.

4. All questions are of objective type with multiple choice answers and carry equal marks. There is no negative marking.

5. Please use black/blue ball pen to completely darken the circles corresponding to the correct answers. You have to mark all your responses only on the separate OMR answer sheet provided. Before you proceed to mark the response to various questions of the test booklet in the answer sheet, you have to fill in some particulars in the OMR answer sheet as per instructions given in the answer sheet.

6. After you have completed filling in all your responses on the answer sheet and the examination has concluded, you should hand over only the OMR answer sheet to the invigilator. You are permitted to take away the test booklet with you.

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ROLL NO_____ **MAXIMUM TIME ALLOWED: 2 HR 30 MIN**

PART-I

SECTION-I: ENGLISH

I. Read the passage given below and fill the correct option:

Caged behind thick glass, the most famous dancer in the world can easily be missed in the National Museum, Delhi. The Dancing Girl of Mohenjo-Daro is that rare artifact that even school children are familiar with. Our school textbooks also communicate a wealth of our 5000 years heritage of art. You have to be alert to her existence there, amid terracotta animals to rediscover this bronze image.

Most of us have seen her only in photographs or sketches, therefore the impact of actually beholding her is magnified a million times over. One discovers that the dancing girl has no feet. She is small, a little over 10 cm tall, the length of a human palm, but she surprises us with the power of great art, the ability to communicate across centuries.

A series of bangles of shell or ivory or thin metal clothes her left upper arm all the way down to her fingers. A necklace with three pendants bunched together and a few bangles above the elbow and wrist on the right-hand display almost modern art.

She speaks of the undaunted, ever hopeful human spirit. She reminds us that it is important to visit museums in our country to experience the impact that a work of art leaves on our senses, to find among all the riches one particular vision of beauty that speaks to us alone.

1. In the museum she's kept among:
   (a) dancing figures (b) bronze statues
   (c) terracotta animals (d) books

2. Which information is not given in the passage?
   (a) The girl is caged behind glass
   (b) She is a rare artefact
   (c) School books communicate the wealth of heritage
   (d) She cannot be rediscovered as she's bronze

3. 'Great Art' has power because:
   (a) It appeals to us despite a passage of time
   (b) It is small and can be understood
   (c) It is seen in pictures and sketches
   (d) It's magnified a million times

4. She reminds us:
   (a) of the never-say-die attitude of humans
   (b) why museums in our country are exciting
   (c) why she will make us come into money
   (d) of dancing figures

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5. The size of the dancing girl is equal to the length of human:
(a) body (b) hand
(c) ear (d) palm

II. Find the correctly spelt word.

6. (a) inconvineinced (b) inconvenienced
(c) inconvenneinced (d) inconvinienced

7. (a) Scarsity (b) Scarety
(c) Scarecity (d) Scarcity

8. (a) receeve (b) receive
(c) resieve (d) recieve

9. (a) Stoecaly (b) Stoically
(c) Stoicaly (d) Stoecally

10. (a) Versatile (b) Verstile
(c) Vorstyle (d) Varstile

III. In the following questions, a sentence has been given in Direct/ Indirect speech. Out of the four alternatives suggested, select the one which best expresses the same sentence in Direct/ Indirect speech.

11. Someone has stolen my bicycle. This is same as:
(a) Someone stole my bicycle
(b) My bicycle has been stolen
(c) I have given away my bicycle
(d) A thief has stolen my bicycle

12. My father gave it to the mechanic. This is same as:
(a) It was given to the mechanic
(b) It has been given to the mechanic
(c) The mechanic has taken it away
(d) The mechanic got it

13. It had been thrown there. This is same as:
(a) It was thrown away (b) Someone had thrown it there
(c) Someone threw it there (d) It is thrown there

14. Patient to doctor: Good morning, Doctor! Can you give me a few minut
A man went to his doctor's clinic and asked the doctor
(a) can you give me a few minutes?
(b) whether I can have a few minutes of his time .
(c) whether he can give him a few minutes .
(d) whether he could give him a few minutes .

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15. Patient to doctor: "I have got a severe headache".
The patient told the doctor that
(a) he has got a severe headache
(b) he had got a severe headache
(c) I have got a severe headache
(d) whether he had got a severe headache

IV. A sentence has been given in Active voice. Choose the correct option which express the same sense in Passive voice.

16. They have invited the parents as well as the child.
(a) The parents as well as the child has been invited.
(b) The child as well as the parents has been invited.
(c) The parents as well as the child have been invited.
(d) The parents as well as the child had been invited by them.

17. Mrs Sharma knows me.
(a) I am known by Mrs Sharma.
(b) I was known by Mrs Sharma.
(c) I am known to Mrs Sharma.
(d) I have known to Mrs Sharma.

18. The manager keeps the work pending.
(a) The work are being kept pending by the manager.
(b) The work was kept pending by the manager.
(c) The work has been kept pending by the manager
(d) The work is kept pending by the manager.

19. The masons are building the house.
(a) The house is being built by the masons.
(b) The house is building the masons.
(c) The house was being built by the masons.
(d) The house has been built by the masons.

20. Does she want a book?
(a) Is the book wanted by her?
(b) Is she wanting a book?
(c) Is a book wanted by her?
(d) Does she wants the book?

V. In the following questions choose the word which best expresses the meaning of the given word.

21. Trite
(a) Illogical
(b) Hackneyed
(c) Bitter
(d) Sharp

22. Hazel
(a) Blue
(b) Greenish-blue
(c) Reddish-brown
(d) Green

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23. Craven
(a) Silly (b) Cowardly
(c) Indecent (d) Mean

24. Dexterity
(a) Cooperation (b) Courtesy
(c) Punctuality (d) Skill

25. Intrepid
(a) Bold (b) Timid
(c) Unadventurous (d) Unimaginative

VI. Select the most appropriate word to fill in the blanks in following sentences:

26. It rained ---------- last night.
(a) heavily (b) heavy
(c) kindly (d) cleverly

27. Walk ------- if you don't want to be late.
(a) very (b) fast
(c) fastly (d) speed

28. The bomb exploded with a ------- noise.
(a) loud (b) loudly
(c) greatly (d) lowly

29. She played the piano ----------.
(a) beautiful (b) more beautiful
(c) beautifully (d) more beautifully

30. Where have you been ---------- school finished?
(a) for (b) since
(c) at (d) as

VII. Select the correct term.

31. Life story of a person
(a) Extempore (b) Misogynist
(c) Biography (d) Gratis

32. A thing agreeable to taste
(a) Palatable (b) Pompous
(c) Wavering (d) Degrade

33. An absolutely clear statement
(a) Invisible (b) Illicit
(c) Explicit (d) Credulous

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34. A flotilla means
(a) Fleet of small vessels
(b) Talks in sleep
(c) Murder of oneself
(d) Act of sacrilege

35. That can be believed
(a) Credible
(b) Unsound
(c) Sacrilege
(d) Polyandry

VIII. Choose the Antonym of the following words.

36. Virtue
(a) Asset
(b) Quality
(c) Vice
(d) Purity

37. Keen
(a) Reluctant
(b) Rogue
(c) Ardent
(d) Shrewd

38. Base
(a) Happy
(b) Noble
(c) Courageous
(d) Carefully

39. Scatter
(a) Care
(b) Suitable
(c) Litter
(d) Gather

40. Despair
(a) Faith
(b) Anguish
(c) Sorrow
(d) Misery

IX. Complete each idiom.

41. To have _____to grind.
(a) Showel
(b) An Axe
(c) Spade
(d) Rake

42. This matter has been _____ fire for the last many months and must therefore, be decided one way or the other.
(a) Lying
(b) Sitting
(c) Dropping
(d) Hanging

43. He rides the high _____because of his connection.
(a) Horse
(b) Yak
(c) Elephant
(d) Camel

44. Take with a grain of _____.
(a) Sugar
(b) Wheat
(c) Rice
(d) Salt

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45. The whole _____ yards.
(a) Nine (b) Seven
(c) Eleven (d) Twenty

X. Read the following poem carefully and answer the questions that follow:

The sun descending in the west,
The evening star does shine;
The birds are silent in their nest.
And I must seek for mine.

The moon, like a flower
In heaven's high bower,
With silent delight
Sits and smiles on the night.

Farewell, green fields and happy grove,
Where flocks have took delight:
Where lambs have nibbled, silent move
The feet of angels bright;

Unseen they pour blessing
And joy without ceasing
On each bud and blossom,
And each sleeping bosom.

They look in every thoughtless nest
Where birds are covered warm;
They visit caves of every beast,
To keep them all from harm:

If they see any weeping
That should have been sleeping,
They pour sleep on their head,
And sit down by their bed.

(Extract from the poem 'Night' by William Blake)

46. The evening star rises when
(a) the birds leave their nests
(b) it is midnight
(c) it is dawn
(d) the sun descends in the west

47. Here, 'bower' represents
(a) a potted plant
(b) a framework that supports climbing plants
(c) a bouquet of flowers
(d) a flower vase

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48. The poet compares moon to
(a) a flower
(b) a bird in the nest
(c) an evening star
(d) an angel

49. Birds' nest is described as 'thoughtless' because
(a) the angels are blessing the birds to be happy
(b) the birds are covered in the warmth of their nest
(c) it is made without any thought
(d) the occupants are asleep without any care

50. The figure of speech used, in the line 'In heaven's high bower' is
(a) Metaphor
(b) Personification
(c) Alliteration
(d) Simile

SECTION-II: HINDI

51. जर्मन भाषा की लिपि इनमें से कौन-सी है?
(a) फारसी
(b) गुरुमुखी
(c) रोमन
(d) देवनागरी

52. भारतीय संविधान में कितनी भाषाओं को मान्यता प्रदान की गई है?
(a) 15 भाषाओं को
(b) 16 भाषाओं को
(c) 21 भाषाओं को
(d) 22 भाषाओं को।

53. नेत्रहीन लोगों के पढ़ने हेतु किस लिपि का प्रयोग किया जाता है?
(a) गुरुमुखी
(b) बरेल
(c) बेर्ल
(d) ब्रेल।

54. उपभाषा कहलाती है -
(a) बोली का जो रूप साहित्य में हो।
(b) जिसे पढ़ा-लिखा वर्ग बोलता हो।
(c) जो भाषा के समान महत्त्व रखती हो।
(d) दिए गए सभी।

55. 'ऑ' ध्वनि का आगमन हुआ।
(a) फारसी भाषा से
(b) अंग्रेजी भाषा से
(c) गुरुमुखी भाषा से
(d) हिन्दी भाषा से।

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56. तद्भव शब्द कहलाते हैं -

(a) जो शब्द संस्कृत से ज्यों-के-त्यों हिन्दी में आ गए हैं।
(b) जो शब्द संस्कृत से रूप बदलकर हिन्दी में आ गए हैं।
(c) जो अंग्रेजी शब्द हिन्दी में बदलकर लिखे जा रहे हैं।
(d) जो उर्दू के शब्द उर्दू भाषा के रूप में हिन्दी में प्रयुक्त होते हैं।

57. 'योगरूढ़' शब्द होते हैं –

(a) यौगिक रूप से बनते हैं।
(b) यौगिक होने पर किसी विशेष अर्थ का बोध करवाने वाले।
(c) तीन या चार शब्दों के योग से बनते हैं।
(d) इनमें से कोई नहीं।

58. संज्ञा के विकारक रूप कौन-से हैं?

(a) लिंग, वचन, काल
(b) लिंग, वचन, क्रिया
(c) लिंग, वचन, कर्म
(d) लिंग, वचन, कारक।

59. 'प्रधानमंत्री' शब्द है -

(a) पुल्लिंग
(b) स्त्रीलिंग
(c) स्त्रीलिंग और पुल्लिंग दोनों
(d) इनमें से कोई नहीं।

60. इकारांत तथा ईकारांत स्त्रीलिंग शब्दों में बहुवचन बनाने हेतु जोड़ा जाता है –

(a) या
(b) याँ
(c) ओ
(d) ऐ।

61. यदि कारक चिह्नों का प्रयोग न करें तो।

(a) वाक्यों का अस्तित्व नहीं रहेगा।
(b) वाक्य की सुंदरता समाप्त हो जाएगी।
(c) वाक्यों के हाव-भाव मालूम न होंगे।
(d) वाक्य सार्थक न बन पाएँगे।

62. निम्नलिखित वाक्य के शुद्ध रूप को चिन्हित करें -

(a) अपना कार्य खुद अपने-आप करना पड़ता है।
(b) अपना कार्य अपने करो।
(c) अपना कार्य स्वयं करना पड़ता है।
(d) अपना कार्य अपन को करना पड़ता है।

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63. कितने प्रकार के शब्दों से विशेषण शब्दों का निर्माण होता है?

(a) चार
(b) दो
(c) तीन
(d) पाँच।

64. 'शर्माना' क्रिया है -

(a) नाम धातु
(b) संयुक्त
(c) प्रेरणार्थक
(d) पूर्वकालिक।

65. क्रिया के जिस रूप से आने वाले समय में उसके होने में शंका, संभावना, इच्छा आदि का बोध हो, वह होता है -

(a) भविष्यतकाल
(b) संभाव्य भविष्यत
(c) सामान्य भविष्यत
(d) इनमें से कोई नहीं।

66. जिस वाक्य में कर्ता प्रधान हो, क्रिया कर्ता के अनुसार आए, वह होता है -

(a) कर्तवाच्य
(b) कर्मवाच्य
(c) भाववाच्य
(d) कर्तृवाच्य।

67. उतना खाओ, जितना खा सकते हो। वाक्य निम्नलिखित में से किसके अंतर्गत आता है?

(a) कालवाचक क्रियाविशेषण
(b) परिमाणवाचक क्रियाविशेषण
(c) रीतिवाचक क्रियाविशेषण
(d) विधानवाचक क्रियाविशेषण।

68. 'बेखटके' किस समास का उदाहरण है -

(a) तत्पुरुष समास का
(b) कर्मधारय समास का
(c) अव्ययीभाव समास का
(d) बहुव्रीहि समास का

69. किसी संस्था या व्यक्ति के साठ वर्ष पूर्ण होने पर मनाए जाने वाले उत्सव को कहते हैं?

(a) प्लेटिनम जुबली
(b) रजत जयंती
(c) हीरकोत्तर जयंती
(d) हीरक जयंती।

70. 'कागजी घोड़े दौड़ाना' का सटीक अर्थ होगा -

(a) असर न होना
(b) लिखना
(c) केवल बहुत लिखा-पढ़ी करना
(d) मूर्ख

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SECTION – III: SOCIAL SCIENCE

71. Name the Governor General who banned the Sati system in India?
(a) Lord Cornwallis (b) Lord Dalhousie
(c) Lord William Bentick (d) None of these

72. Who was the first woman President of Indian National Congress?
(a) Annie Besant (b) Sarojini Naidu
(c) Nellie Sengupta (d) None of these

73. Name the place from which the Quit India Movement was launched by Mahatama Gandhi?
(a) Lucknow (b) Bombay
(c) Delhi (d) Calcutta

74. Where did the formation of Azad Hind fauj take place?
(a) Thailand (b) Singapore
(c) Russia (d) Germany

75. Who said "Every blow on my body will prove a nail in the coffin of the British Empire"-
(a) Lala Lajpat Rai (b) Bipin Chandra Pal
(c) Chandra Shekhar Azad (d) Bal Gangadhar Tilak

76. Mahatama Gandhi Launched the Kheda Satyagraha in Gujarat in 1948 to support the cause of?
(a) Mil Owners (b) Land Lords
(c)The Peasants (d) Kol Rebellions

77. Who among the following was the court poet of Harsha?
(a) Kalidas (b) Banabhatta
(c) Jayasi (d) Kalhan

78. The battle of Buxar was fought in -
(a) 1526 (b)1576
(c) 1764 (d) 1757

79. Who gave the slogan 'Back to Vedas'?
(a) Swami Vivekananda (b) Swami Sampurnanda
(c) Swami Dayanand Saraswati (d) Mahatama Gandhi

80. Who was the last Viceroy of India?
(a) Lord Canning (b) Lord Mountbatten
(c) Lord Rippon (d) Lord Wellesley

81. Which amendment of the constitution added the word 'Secular' in the Preamble?
(a) 41st Amendment (b) 42nd Amendment
(c) 43rd Amendment (d) 44th Amendment

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82. Domestic Violence Act came into effect in
(a) 2005 (b) 2006
(c) 2007 (d) 2008

83. What is the term of Prime Minister as mentioned in the Constitution?
(a) 5 Years (b) 6 Years
(c) No Fixed Term (d) None of the Above

84. Who is the interpreter of constitution?
(a) Supreme Court (b) Lok Sabha
(c) Rajya Sabha (d) President

85. Supreme Court has made Right to Free Education as the part of which among the following rights?
(a) Right to life
(b) Right against Exploitation
(c) Right to freedom of speech and expression
(d) Cultural and Educational Rights

86. Who administers oath to the Chief Justice of High Court?
(a) Chief Minister of the state (b) Chief Justice of Supreme Court
(c) Governor of the state (d) President of India

87. Which of the following is related to Bharat Nirman Scheme?
(a) Food grain production self-sufficiency
(b) Family welfare programme
(c) Infrastructure development
(d) Employment generation program

88. What is the minimum age for a candidate to be elected as President of India?
(a) 21 Years (b) 25 Years
(c) 30 Years (d) 35 Years

89. What is the number of Schedules in Constitution of India?
(a) 8 (b) 10
(c) 12 (d) 21

90. Who among the following reserves the right to initiate the Constitutional Amendments?
(a) President of India (b) Supreme Court of India
(c) High Court (d) Parliament

91. Which of the following is the World's largest archipelago country?
(a) Japan (b) Indonesia
(c) Malaysia (d) Philippines

92. Indus river originates in
(a) Kinnaur (b) Ladakh
(c) Nepal (d) Tibet

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93. Name the canal joining North Sea and Baltic Sea?
(a) Suez Canal (b) Panama Canal
(c) Kiel Canal (d) None of the above

94. Which country is the largest producer of Mica in the world?
(a) USA (b) India
(c) China (d) Australia

95. Which of the following rock contains fossils?
(a) Igneous Rock (b) Sedimentary Rock
(c) Metamorphic Rock (d) All of these

96. Which type of forests occupies the highest percentage of area in India?
(a)Tropical Deciduous Forest (b) Tropical Evergreen Forest
(c) Thorny Forest (d) Tidal Forest

97. River Krishna originate from
(a) Eastern Ghats (b) Northern Ghats
(c) Western Ghats (d) Southern Ghats

98. Which of the following is India's largest Salt Producing state?
(a) Maharashtra (b) Gujarat
(c) Orissa (d) Kerala

99. Which of the following desert is situated in South Africa?
(a) Patagonia Desert (b) Sahara Desert
(c) Kalahari Desert (d) Gobi Desert

100. Name the place from which River Narmada originates.
(a) Nasik (b) Amarkantak
(c) Lake Mansarovar (d) Mahabaleshwar

PART-II

SECTION-IV: MATHEMATICS

101. A cube of side 5 cm is painted on all its faces. If it is sliced into 1 cubic centimeters cubes, how many 1 cubic centimeters cubes will have exactly one of their faces painted?
(a) 27 (b) 42 (c) 54 (d) 142

102. A circle of maximum possible size is cut from a square sheet of board. Subsequently, a square of maximum possible size is cut from the resultant circle. What will be the area of the final square?
(a) 3/4 of Original Square. (b) 1/2 of Original Square.
(c) 1/4 of Original Square. (d) 2/3 of Original Square.

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103. The surface area of the three co-terminus faces of a cuboid are 6, 15 and cm^2 respectively. The volume of the cuboid is
(a) 30 cm^3 (b) 40 cm^3 (c) 20 cm^3 (d) 35 cm^3

104. A point which lies on both the axes is
(a) (1, 1) (b) (0, 1) (c) (1, 0) (d) (0, 0)

105. If 5A + 25 is equal to B2 (a two digits number), then the value of A + B is
(a) 15 (b) 10 (c) 8 (d) 7

106. Between two given rational numbers, we can find
(a) one and only one rational number.
(b) only two rational numbers.
(c) only ten rational numbers.
(d) infinitely many rational numbers.

107. A dice is thrown two times and sum of the numbers appearing on the dice are noted. The number of possible outcomes is
(a) 6 (b) 11 (c) 18 (d) 36

108. In a pie chart, the total angle at the centre of the circle is
(a) 180° (b) 270° (c) 360° (d) 90°

109. Listed below is the temperature in °C for 10 days. What is the range of the data?
–6, –8, 0, 3, 2, 0, 1, 5, 4, 4
(a) 8°C (b) 13°C (c) 10°C (d) 12°C

110. Monthly salary of a person is Rs 15000. The central angle of the sector representing his expenses on food and house rent on a pie chart is 60°. The amount he spends on food and house rent is
(a) Rs 2500 (b) Rs 5000 (c) Rs 6000 (d) Rs 9000

111. Which of the following is not a perfect square?
(a) 361 (b) 1156 (c) 1128 (d) 1681

112. A perfect square number having *n* digits where *n* is even will have square root with
(a) n+1 digit (b) n/2 digit (c) n/3 digit (d) (n+1)/2 digit

113. The digit in the tens place of a two digit number is 3 more than the digit in the units place. Let the digit at units place be *b*. Then the number is
(a) 11*b*+ 30 (b) 10*b* + 30 (c) 11*b* + 3 (d) 10*b* + 3

114. Aruna's present age is thrice of Shilpa. If Shilpa's age three years ago was x. Then Aruna's present age is
(a) 3(*x* – 3) (b) 3*x* + 3 (c) 3*x* – 9 (d) 3(*x* + 3)

115. If two adjacent angles of a parallelogram are $(5x - 5)^\circ$ and $(10x + 35)^\circ$, then the ratio of these angles is

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

116. Length of one of the diagonals of a rectangle whose sides are 10 cm and 24 cm is

(a) 25 cm (b) 20 cm (c) 26 cm (d) 3.5 cm

117. Sum of $a - b + ab$, $b + c - bc$ and $c - a - ac$ is

(a) $2c + ab - ac - bc$ (b) $2c - ab - ac - bc$
(c) $2c + ab + ac + bc$ (d) $2c - ab + ac + bc$

118. On dividing $p(4p^2 - 16)$ by $4p(p - 2)$, we get

(a) $2p + 4$ (b) $2p - 4$ (c) $p + 2$ (d) $p - 2$

119. The value of $(7^{-1} - 8^{-1})^{-1} - (3^{-1} - 4^{-1})^{-1}$ is

(a) 44 (b) 56 (c) 68 (d) 12

120. If the cost price of 10 shirts is equal to the selling price of 8 shirts, then which of the following is true for the transaction?

(a) Profit of 25% (b) Loss of 25%
(c) Profit of 20% (d) Loss of 20%

121. To gain 25% after allowing a discount of 10%, the shopkeeper must mark the price of the article which costs him Rs 360 as

(a) Rs 500 (b) Rs 450 (c) Rs 460 (d) Rs 486

122. The mean of five numbers is 30. If one number is excluded, their mean becomes 28. The excluded number is:

(a) 28 (b) 30 (c) 35 (d) 38

123. Radhika bought a car for Rs 2,50,000. Next year its price decreased by 10% and further next year it decreased by 12%. In the two years overall decrease per cent in the price of the car is

(a) 3.2% (b) 22% (c) 20.8% (d) 8%

124. If two quantities x and y vary directly with each other, then

(a) x/y remains constant. (b) $x - y$ remains constant.
(c) $x + y$ remains constant. (d) $x \times y$ remains constant.

125. One of the factors of $(25x^2 - 1) + (1 + 5x)^2$ is

(a) $5 + x$ (b) $5 - x$ (c) $5x - 1$ (d) $10x$

126. The factorisation of $4x^2 + 8x + 3$ is

(a) $(x + 1)(x + 3)$ (b) $(2x + 1)(2x + 3)$
(c) $(2x + 2)(2x + 5)$ (d) $(2x - 1)(2x - 3)$

127. Which of the following is a factor of $(x + y)^3 - (x^3 + y^3)$?

(a) $x^2 + y^2 + 2xy$ (b) $x^2 + y^2 - xy$
(c) xy^2 (d) $3xy$

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128. Which of the following cannot be the empirical probability of an event?
(a) 2/3 (b) 3/2
(c) 0 (d) 1

129. In a sample study of 640 people, it was found that 512 people have a school certificate. If a person is selected at random, the probability that the pers a high school certificate is:
(a) 0.5 (b) 0.6
(c) 0.7 (d) 0.8

130. The range of the data:
25, 81, 20, 22, 16, 6, 17,15,12, 30, 32, 10, 91, 8, 11, 20 is
(a) 10 (b) 75
(c) 85 (d) 26

131. In a frequency distribution, the mid value of a class is 10 and the width o class is 6. The upper limit of the class is:
(a) 6 (b) 7
(c) 10 (d) 13

132. Let m be the mid-point and 1 be the lower class limit of a class in a contin frequency distribution. The upper class limit of the class is:
(a) 2m + l (b) 2m – l
(c) m – l (d) m – 2l

133. If the perimeter of one of the faces of a cube is 40 cm, then its volume is:
(a) 6000 cm^3 (b) 1600 cm^3
(c) 1000 cm^3 (d) 600 cm^3

134. In a cylinder, radius is doubled and height is halved, curved surface area w be
(a) halved (b) doubled
(c) same (d) four time

135. The length of the longest pole that can be put in a room of dimension (10 m 10 m × 5 m) is
(a) 15 m (b) 16 m
(c) 10 m (d) 12 m

136. The radii of two cylinders are in the ratio of 2 : 3 and their heights are in th ratio of 5 : 3. The ratio of their volumes is
(a) 10 : 17 (b) 20 : 27
(c) 17 : 27 (d) 20 : 37

137. The perimeter of an equilateral triangle is 60 m. The area is
(a) $10\sqrt{3}$ m^2 (b) $15\sqrt{3}$ m^2
(c) $20\sqrt{3}$ m^2 (d) $100\sqrt{3}$ m^2

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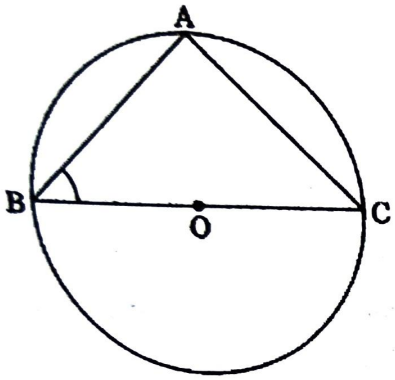
138. The sides of a triangle are 56 cm, 60 cm and 52 cm long. Then the area of the triangle is

(a) 1322 cm^2
(b) 1311 cm^2
(c) 1344 cm^2
(d) 1392 cm^2

139. An equilateral triangle of side 9 cm is inscribed a circle. The radius of the circle is

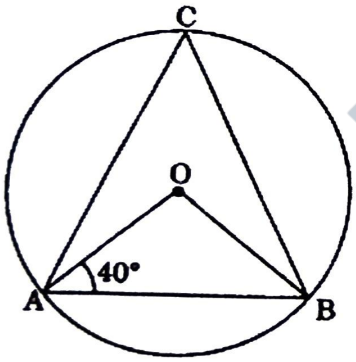
(a) 3 cm
(b) $3\sqrt{2}$ cm
(c) $3\sqrt{3}$ cm
(d) 6 cm

140. In the given figure, BOC is a diameter of a circle and AB = AC. Then, $\angle ABC$ =



(a) 30°
(b) 45°
(c) 60°
(d) 90°

141. In the given figure, O is the centre of a circle. If $\angle OAB = 40°$ and C is a point on the circle, then $\angle ACB$ =



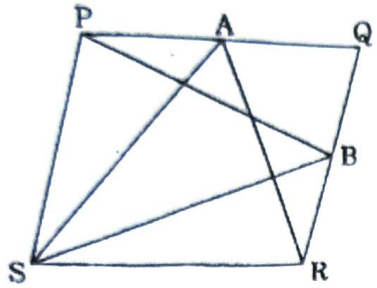
(a) 40°
(b) 50°
(c) 80°
(d) 100°

142. If a triangle and a parallelogram are on the same base and between same parallels, then the ratio of the area of the triangle to the area of parallelogram is

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

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143. PQRS is a parallelogram and A and B are any points on PQ and QR. If area(PQRS) = 48 cm², then area(ΔPBS) + area(ΔASR) is equal to



(a) 96 cm²
(b) 36 cm²
(c) 48 cm²
(d) 24 cm²

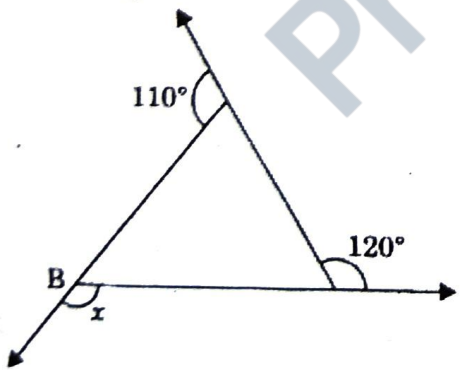
144. Three angles of a quadrilateral are 75°, 90°and 75°, the fourth angle is
(a) 90°
(b) 95°
(c) 105°
(d) 120°

145. ABCD is a rhombus such that ∠ACB = 40°, then ∠ADB is
(a) 40°
(b) 45°
(c) 50°
(d) 60°

146. The diagonals AC and BD of a || gm ABCD intersect each other at the point O. If ∠DAC = 32° and ∠AOB = 70°, then ∠DBC is equal to
(a) 24°
(b) 86°
(c) 38°
(d) 32°

147. ABCD is a rhombus such that ∠ABC = 40°, then ∠ADC is equal to
(a) 40°
(b) 45°
(c) 50°
(d) 20°

148. In figure the value of x is



(a) 120°
(b) 130°
(c) 110°
(d) 100°

149. If the point P lies in between M and N and C is mid-point of MP, then:
(a) MC + PN = MN
(b) MP + CP – MN
(c) MC + CN = MN
(d) CP + CN = MN

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150. Cost of book (x) exceeds twice the cost of pen (y) by Rs 10. This statement can be expressed as linear equation.

(a) $x - 2y - 10 = 0$ (b) $2x - y - 10 = 0$
(c) $2x + y - 10 = 0$ (d) $x - 2y + 10 = 0$

SECTION –V: SCIENCE

151. Acceleration is a vector quantity, which indicates that its value
(a) Can be positive, negative or zero
(b) Is always negative
(c) Is always positive
(d) Is zero

152. Two boys A and B are applying force on a block. If the block moves towards the boy A, which one of the following statements is correct?
(a) Magnitude of force applied by A is greater than that of B.
(b) Magnitude of force applied by A is smaller than that of B.
(c) Net force on the block is towards B.
(d) Magnitude of force applied by A is equal to that of B.

153. The distance between any two compressions or rarefactions in a longitudinal wave is
(a) Half wavelength (b) Twice the wavelength
(c) One wavelength (d) One fourth wavelength

154. The frequency of subsonic sound is
(a) more than 20 Hz (b) 100 Hz
(c) less than 20 Hz (d) more than 20,000 Hz

155. Mirage is due to
(a) unequal heating of different parts of the atmosphere
(b) magnetic disturbances in the atmosphere
(c) depletion of ozone layer in the atmosphere
(d) equal heating of different parts of the atmosphere

156. Magnetism at the center of a bar magnet is
(a) minimum (b) maximum
(c) zero (d) minimum or maximum

157. A pendulum oscillates 20 times in 4 seconds. Find its time period.
(a) 0.05 sec (b) 0.001 sec
(c) 0.2 sec (d) 0.1 sec

158. What is the name of instrument which is used to determine atmospheric pressure?
(a) Barometer (b) Altimeter
(c) Fathometer (d) Ammeter

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159. The action and reaction forces referred to in Newton's third law
(a) Must act on the same object
(b) May act on different objects
(c) Must act on different objects
(d) Need not be equal in magnitude but act in the same direction

160. Myopia can be corrected by using a
(a) concave lens
(b) convex lens
(c) opaque lens
(d) micro lens

161. Pure water is a _____ Conductor of electricity.
(a) Super conductor
(b) Bad conductor
(c) Speed conductor
(d) None of these

162. 1 dyne (a unit of force in CGS system) equals to
(a) 10^3 g cm/s^2
(b) 10^{-3} g cm/s^2
(c) 10^5 kg m/s^2
(d) 10^{-5} kg m/s^2

163. A body is falling freely under the action of gravity alone in vacuum. Which one of the following remains constant during the fall?
(a) Potential energy
(b) Kinetic energy
(c) Total linear momentum
(d) Total mechanical energy

164. The power of an earthquake is expressed in terms of magnitude on a scale called
(a) Righter scale
(b) Quake scale
(c) Richter scale
(d) Earth scale

165. Which one of the following statements about energy is correct?
(a) Energy can be created as well as destroyed
(b) Energy can be created but not destroyed
(c) Energy can neither be created nor destroyed
(d) Energy cannot be created but can be destroyed

166. The synthetic material which can be used for making fabric as well as Shatter proof bottles and jar is-
(a) Nylon
(b) Rayon
(c) Polyester
(d) Acrylic

167. The substance having the highest Calorific value is-
(a) Hydrogen
(b) Bio gas
(c) LPG
(d) CNG

168. The following that are stored in water and kerosene respectively are
(a) Mercury and Potassium
(b) Potassium and Mercury
(c) Phosphorous and Sodium
(d) Sodium and Phosphorous

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169. In destructive distillation the solid black residue is called
(a) Coal (b) Ash
(c) Coke (d) Coal-tar

170. Sulphur dioxide dissolves in water to give
(a) Sulphurous acid (b) Sulphur acid
(c) Sulphur oxide (d) Sulphuric acid

171. Fire fighters' uniform is coated with a plastic that is fire resistant. Identify the plastic from the given options.
(a) Teflon (b) Melamine
(c) PET (d) Polyester

172. A student classifies chromium as ductile but not carbon. What explains the classification?
(a) Chromium can be drawn into thin wires, but carbon cannot.
(b) Chromium can be made into thin sheets, but carbon cannot
(c) Chromium can be beaten to make sound, but carbon cannot.
(d) Chromium can be plated overother metals, but carbon cannot.

173. Two elements X and Y are reacted with oxygen to form their respective oxides. They are then dissolved in water. Element X forms a hydroxide which is basic in nature. Element Y forms an acid. What can element X and Y?
(a) X- Metal; Y - Non-metal
(b) X- Non-metal; Y- Metal
(c) X- Metal; Y- Metal
(d) X- Non-metal; Y- Non-metal

174. Name the element that can displace copper from the copper sulphate solution?
(a) Iron (b) Platinum (c) Gold (d) Silver

175. Sodium and Phosphorous can be used in
(a) Machinery (b) Electric wires
(c) Fertilizers (d) Fuel

176. Electricity is produced using many natural resources. Which inexhaustible resource should be used to produce electricity?
(a) Coal (b) Natural gas (c) Petroleum (d) Water

177. By-product obtained after processing coal is useful in manufacturing plastics synthetic dyes, naphthalene balls etc. The by-product is
(a) Coal gas (b) Coal tar
(c) Coke (d) Paraffin wax

178. Shooting stars are called
(a) Asteroids (b) Galaxies
(c) Meteors (d) Andromeda

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179. The thermosetting material considered versatile is
(a) Bakelite (b) melamine
(c) PVC (d) plastic

180. Production of Thyroxin requires
(a) Sodium (b) Magnesium
(c) Iodine (d) Bromine

181. Cell wall of which of these is not made up of cellulose
(a) Bacteria (b) Mango tree
(c) Cactus (d) both a and c

182. Sowing the seed manually is known as
(a) Ploughing (b) Transplantation
(c) Broadcasting (d) Seed drilling

183. Coloured bodies found scattered in the cytoplasm of plant cells are called
(a) Plastids (b) Centrosomes
(c) Mitochondria (d) Nucleus

184. The level of glucose in the blood is controlled by
(a) Pancreas (b) Thyroid gland
(c) Parathyroid (d) Adrenal

185. Leaving the agricultural land uncultivated for one or more seasons is known as
(a) Intercropping (b) composite farming
(c) Mulching (d) field fallow

186. The role of *Nitrobacter in* Nitrogen cycle is
(a) Denitrification (b) Nitrogen fixation
(c) Decomposition (d) Converting nitrite to nitrate

187. Yeast is
(a) Multicellular (b) Unicellular
(c) Eukaryote (d) both b and c

188. The bacterial disease of plant is
(a) Rust disease (b) Smut disease
(c) Citrus canker (d) Mosaic disease

189. During the developmental stages, the silkworm emerges from the
(a) Larva (b) Pupa
(c) Tadpole (d) Cocoon

190. Bandipur situated in Karnataka is an example of
(a) Wildlife Sanctuary (b) Biosphere Reserve
(c) National Park (d) Sacred Groove

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191. Nilgiri Tahr is an example of
(a) Endemic Species
(b) Extinct Species
(c) Migratory Animal
(d) Threatened Species

192. 70 to 80% of volume of a mature plant cell is occupied by
(a) Nucleus
(b) Vacuole
(c) Cytoplasm
(d) Endoplasmic reticulum

193. Animal cell in which nucleus is absent would also lack in
(a) Chromosomes
(b) Ribosomes
(c) Cytoplasm
(d) Plasma membrane

194. The fusion of male and female gametes takes place in
(a) Ovary
(b) Uterus
(c) Cervix
(d) Fallopian Tube

195. Egg laying animals are called
(a) Viviparous
(b) Hermaphrodite
(c) Oviparous
(d) both b and c

196. A sperm is
(a) Single celled
(b) Multicellular
(c) Multi-layered
(d) single layer with three cells

197. Once a person is infected with smallpox, he does not suffer from it again as his body contains
(a) Antigens
(b) Antibodies
(c) Anticoagulants
(d) Antibiotics

198. Fumigation helps in
(a) Manuring
(b) Storage of grains
(c) Weeding
(d) Harvesting

199. The scientific name of common bread mould is
(a) Rhizobium
(b) Rhizopus
(c) Penicillium
(d) Yeast

200. An example of exocrine gland is
(a) Salivary gland
(b) Thyroid
(c) Adrenal
(d) Ovary and Testis

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