

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE ASKED TO DO SO



DCA ENTRANCE EXAMINATION - IX
DEFENCE CAREER ACADEMY,
AURANGABAD.

As an ISO 9001 : 2008 - Certified

ENT : 2017-2018
TIME : 2.30 Hrs.

MATH & GAT

Sr. No.
MAXIMUM MARKS : 150

QUESTION - BOOKLET

GENERAL INSTRUCTIONS

1. Do not carry any book, paper or any other material with you inside the Examination Hall.
2. Carry only writing material with you in the Examination Hall.
3. Keep the Hall Ticket with you ready for scrutiny.
4. Result of this Examination will be displayed on the Notice Board. The Result Sheet will include the successful/ qualified candidates ONLY.
5. All successful candidates indicated on the list shall present themselves for the interview on the same day.
6. This Test Booklet contains 140 items (Questions). Question No. 1 to 140 (MCQ) carry 1 mark each and Question No. 141 (Descriptive) carries 10 marks. You have to 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 item.
7. All the answers must be marked on the Answer Sheet only. Do not write anything on this Test Booklet.
8. 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 QUESTION ETC. IF SO, GET IT REPLACED BY A NEW ONE.
9. Ask for a separate paper for rough work.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE ASKED TO DO SO

10. Read the questions carefully, Remember, answers are to be indicated in the Answer Sheet Only. Return the Test Booklet, Rough work papers and the Answer Sheet immediately when asked to do so. You are NOT permitted to take away with you any paper concerning the Examination.

ANSWER SHEET

11. The Answer Sheet contains 140 counts, each subdivided in four { (a) (b) (c) (d) } subdivisions for indicating the correct choice of answers. After having selected the correct choice from the test Booklet, you should indicate that choice by completely blackening the respective circle, DO NOT merely cross the circle. You should indicate correct answer by blackening ONLY ONE circle in each answer. Any answer having more than ONE blackened circle will be treated as WRONG answer.

12. Before starting the answering ensure that you have filled the complete information at the top of this Answer Sheet. Incomplete Answer Sheet will be regarded as invalid.

THANK YOU AND BEST OF LUCK

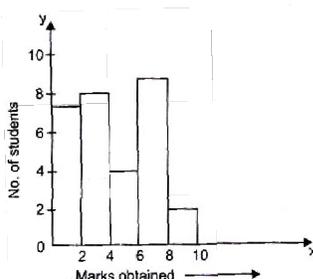
C

A

1. Which of the following statement is false?
 - a) Rational numbers are not closed under addition
 - b) Whole numbers are closed under addition.
 - c) Integers are closed under addition.
 - d) Natural numbers are closed under addition.
2. Which of the following statement is false?
 - a) Rational numbers are commutative for addition
 - b) Integers are not commutative for addition.
 - c) Natural numbers are commutative for addition.
 - d) Whole numbers are commutative for addition
3. Which of the following statement is true?
 - a) Integers are associative for subtraction.
 - b) Natural numbers are associative for subtraction
 - c) Whole numbers are not associative for subtraction
 - d) Rational numbers are associative for subtraction.
4. Which of the following statement is true?
 - a) Rational numbers are not associative for multiplication.
 - b) Integers are associative for multiplication.
 - c) Whole numbers are not associative for multiplication
 - d) Natural numbers are not associative for multiplication.
5. Which of the following statement is false?
 - a) Rational numbers are closed under subtraction.
 - b) Integers are closed under subtraction
 - c) Natural numbers are closed under subtraction.
 - d) Whole numbers are not closed under subtraction.
6. The standard form of a linear equation in one variable x is:
 - a) $ax + b = 0$
 - b) $ax^2 + bx + c = 0$
 - c) $ax^2 + bx^2 + cx + d = 0$
 - d) None of these
7. When 9 is added to two times a number, we get 67. The number is:
 - a) 25
 - b) 27
 - c) 29
 - d) 31
8. The root of the equation $x + 3 = 5$ is:
 - a) 1
 - b) 2
 - c) -1
 - d) -2
9. The difference of two numbers is 21. The larger number is x. The smaller number is :
 - a) $21 + x$
 - b) $21 - x$
 - c) $x - 21$
 - d) $-2 - 21$
10. The value of x is $\frac{-2}{3} = 2x$ is?
 - a) $\frac{1}{3}$
 - b) $-\frac{1}{3}$
 - c) 3
 - d) -3

11. Which of the following statement is true?
 a) Each trapezium is a parallelogram
 b) Each square is a parallelogram
 c) All the rhombuses are squares
 d) Each parallelogram is square.
12. Which of the following statemenet is true?
 a) All the squares are rhombuses.
 b) All the rectangles are squares.
 c) All the parallelograms are rhombuses.
 d) Each parallelogram is a trapezium
13. Which of the following statement is false?
 a) All the four angles of a rhombus are equal.
 b) All squares are trapezium
 c) A rectangle is a parallelogram
 d) The diagonals of a rhombus bisect each other at right angles.
14. Which of the following statement is false?
 a) The diagonals of a rectangle bisect each other.
 b) All the angles of a rectanlge are equal.
 c) No angle of a rectangle can be obtuse.
 d) The opposite sides of a retangle are not equal
15. What is the name of a regular polygon of 3 sides?
 a) Equilateral triangle b) Quadrilateral c) Regular hexagon d) Rectangle
16. A parallelogram PQRS is constructed with sides $QR = 6$ cm, $PQ = 4$ cm and $\angle PQR = 90^\circ$. Then PQRS is a
 a) Square b) rectangle c) rhombus d) trapezium
17. To construct a unique parallelogram, the minimum number of measurements required
 a) 2 b) 3 c) 4 d) 5
18. A quadrilateral has total parts
 a) 5 b) 7 c) 8 d) 10
19. To construct a quadrilateral minimum number of elements of quadrilateral that should be known are.
 a) 10 b) 8 c) 5 d) 3
20. If 3 sides of a quadrilateral are given then which other parts of quadrilateral are needed to determine it uniquely.
 a) one angle b) two angles c) two included angles d) one diagonal

* Observe the histogram and answer the questions given below:



21. The number of students getting marks 6 and above is:
 a) 11 b) 9 c) 12 d) 10
22. Which group contain the maximum no. of students.
 a) 8-10 b) 2-4 c) 6-8 d) 4-6
23. The number of students getting marks less than 4 is:
 a) 7 b) 15 c) 10 d) 8
24. By how much the number of students getting marks 6-8 greater than the number of students getting marks 2-4:
 a) 1 b) 4 c) 2 d) 3
25. The total no. of students is :
 a) 20 b) 25 c) 10 d) 30
26. What will be the number of zeroes in the square of the number 100?
 a) 2 b) 4 c) 6 d) 8
27. Which of the following is a perfect square number?
 a) 1067 b) 7822 c) 4333 d) 625
28. Which of the following is a perfect square number?
 a) 2222 b) 32543 c) 888 d) 10000
29. The square of which of the following numbers will be even?
 a) 11 b) 1111 c) 11111 d) 112
30. What will be the number of zeroes in the square of the number 9000?
 a) 2 b) 3 c) 4 d) 6
31. Which of the following number is a perfect cube?
 a) 125 b) 36 c) 75 d) 100
32. Which of the following number is not a cube number?
 a) 10000 b) 3125 c) 64 d) 729
33. The cube of an even natural numbers is ?
 a) even b) odd c) may be even, may be odd d) prime number
34. The one's digit of the cube of the number 242 is:
 a) 2 b) 4 c) 6 d) 8
35. The one's digit of the cube of the number 144 is:
 a) 1 b) 2 c) 3 d) 4
36. The ratio 1:4 is converted to percentage is :
 a) 50% b) 25% c) 75% d) 4%
37. The ratio 4:25 is converted to percentage is:
 a) 8% b) 4% c) 16% d) 25%

38. The fraction $\frac{2}{5}$ converted to percentage is:
- a) 20% b) 30% c) 40% d) 50%
39. Afata has Rs. 200 with her, she spent 80% amount she had. How much money is left with her?
- a) Rs. 10 b) Rs. 20 c) Rs. 30 d) Rs. 40
40. There are 50 students in 9 class of which 40 are boys and the rest are girls. The ratio of number of boys and number of girls is:
- a) 2 : 3 b) 1 : 5 c) 4 : 1 d) 2 : 5
41. The expression $4xy + 7$ is in
- a) one variable b) two variables c) no variable d) none of these
42. The expression $x + 3$ is in
- a) one variable b) two variables c) no variable d) none of these
43. The expression $x + y + 2$ is in
- a) one variable b) two variables c) no variable d) none of these
44. The value of $5x$ when $x = 5$ is
- a) 5 b) 10 c) 25 d) -5
45. The value of $x^2 + y^2$ when $x = 1, y = 2$ is
- a) 1 b) 2 c) 4 d) 5
46. Which of the following is a regular polyhedron
- a) cuboid b) triangular prism c) cube d) square prism
47. Which of the following is a two dimensional figure?
- a) rectangle b) rectangular prism c) square pyramid d) square prism
48. Which of the following can be the base of a pyramid?
- a) line segment b) circle c) octagon d) oval
49. which of the following 3D shapes does not have a vertex?
- a) pyramid b) prism c) cone d) sphere
50. Solid having only line segments as its edges is a
- a) polyhedron b) cone c) cylinder d) polygon
51. The surface area of a cube with edge 10 cm is
- a) 60 cm^2 b) 600 cm^2 c) 400 cm^2 d) None of these
52. Area of 4 walls of a cuboid whose length is 6 cm breadth is 4 cm and height is 2 cm is
- a) 60 cm^2 b) 20 cm^2 c) 40 cm^2 d) 80 cm^2

53. The length of diagonal of a cuboid with length 2 cm, breadth 4 cm and height 4 cm is.
 a) 6 cm b) 36 cm c) 12 cm d) 24 cm
54. Area of 4 walls of room is 144 cm^2 and height is 4 cm, then perimeter is
 a) 24 cm b) 18 cm c) 36 cm d) 576 cm^2
55. What is the cost of 50 sticks at Rs. 24 per score?
 a) Rs. 30 b) Rs. 40 c) Rs. 20 d) Rs. 50
56. $(a^m)^n$ is equal to:
 a) a^{m+n} b) a^{m-n} c) a^{mn} d) a^{n-m}
57. a^0 is equal to
 a) 0 b) 1 c) -1 d) a
58. $a^m \times a^n$ is equal to
 a) a^{m+n} b) a^{m-n} c) a^{mn} d) a^{n-m}
59. $\frac{a^m}{b^m}$ is equal to
 a) $\left(\frac{a}{b}\right)^m$ b) $\left(\frac{b}{a}\right)^m$ c) $\frac{a^m}{b}$ d) $\frac{a}{b^m}$
60. The multiplicative inverse of 10^5 is
 a) 5 b) 10 c) 10^{-5} d) 10^5
61. A horse eats 18 kg of corn in 12 days? How much does he eat in 9 days?
 a) 11.5 kg b) 12.5 kg c) 13.5 kg d) 14.5 kg
62. 120 copies of a book cost Rs. 600. What will 400 copies cost?
 a) Rs. 1000 b) Rs. 2000 c) Rs. 3000 d) Rs. 2400
63. A boy runs 1 km in 10 minutes. How long will he take to run 600 m?
 a) 2 minutes b) 3 minutes c) 4 minutes d) 6 minutes
64. A shot travels 90 m in 1 second. How long will it take to go 225 m?
 a) 2 seconds b) 2.5 seconds c) 4 seconds d) 3.5 seconds
65. 15 men can mow 40 hectares of land in 1 day. How much will 6 men mow in 1 day?
 a) 16 hectares b) 12 hectares c) 20 hectares d) 24 hectares
66. The common factor of x^2y^2 and x^3y^3 is:
 a) x^2y^2 b) x^3y^3 c) x^2y^3 d) x^3y^2
67. The common factor of a^2m^4 and a^2m^2 is:
 a) a^2m^2 b) a^2m^4 c) a^4m^4 d) a^4m^2

68. The common factor of $2a^2b^4c^2$, $8a^4b^3c^4$ and $6a^3b^4c^2$ is:
 a) $2a^2b^3c^2$ b) $6a^2b^3c^2$ c) $8a^2b^3c^2$ d) $2a^4b^4c^4$
69. The common factor of $14a^2b$ and $35a^4b^2$ is:
 a) $35a^4b^2$ b) $14a^4b$ c) a^2b^2 d) $7a^2b$
70. The common factor of $10ab$, $30bc$, $50ca$ is:
 a) 10 b) 50 c) abc d) 30
71. Comparison of parts of a whole may be done by a:
 a) bar graph b) pie chart c) linear graph d) line graph
72. A point which lies on both the axis is
 a) (0,0) b) (0,1) c) (1, 0) d) (1, 1)
73. The coordinates of a point at a distance of 3 units from the x-axis and 6 units from the y-axis is :
 a) (0,3) b) (6, 0) c) (3, 6) d) (6, 3)
74. The generalized form of the number 33 is:
 a) $10 \times 3 + 3$ b) 10×3 c) $3 + 3$ d) $3 \times 3 + 3$
75. The number $10 \times 7 + 5$ in usual form is:
 a) 57 b) 75 c) 55 d) 77

PART - II GAT

- * **Q.76. to 89: Read the following passage carefully and answer the questions choosing the correct option.**

Last week, Rahman's wife Shiela had an accident. Rahman's youngest child Samir was at home when it happened. He was playing with his new toy train. His father had given it to him for his third birthday the week before. Suddenly the little fellow heard his mother calling "Help! Help!" He left his toy and ran to the kitchen. The poor woman had burnt herself with some hot cooking oil. She was crying with pain and the pan was on fire. Rahman had gone to his office. Both the other children were at school. Samir was too small to help his mother, and she was too frightened to speak sensibly to her son. But he ran to the neighbour's house and asked her to come and help get to the clinic. When her husband came home, Shiela told him what had happened. Of course Rahman was very concerned about his wife, but he was also very proud of his sensible son. "When you are a man, you will be just like your father," He said.

76. A suitable title for this passage will be
 a) A Birthday Gift b) A Son to Be Proud of c) A Pan on Fire d) A Fire Accident
77. How old was Samir when this incident happened?
 a) Two years old b) Three years old c) Four years old d) We do not know
78. How many children had Rahmani?
 a) One b) Two c) Three d) Four
79. When the accident happened Samir was
 a) playing with his toy train b) celebrating his birth day
 c) in a neighbour's house d) in his school

- * **Q.80. to 82 : Read the following poem carefully and answer the questions choosing the correct option.**

“You are old, Father William,” the young man cried,
 And pleasures with youth pass away.
 And yet you lament not the days that are gone;
 Now tell me the reason, I pray.”
 “In the days of my youth,” Father William replied,
 “I remeber’d that youth could not last;
 I thought of the future, whatever I did
 That I never might grieve for the past.”

80. What was he thinking about?
 a) past b) future c) youth d) pleasures
81. Select similar word for lament.
 a) repent b) complain c) torture d) cry
82. The rhyme word for pray.
 a) last b) did c) cried d) away

- * **Instruction : Fill in the blanks with suitable alternative.**

83. Which one of the following is the extension of *I'll*.
 a) I will b) I shall c) I fall d) I was
84. The stream has a beautiful school of fish.
 a) Collective Noun b) Abstract Noun c) Common Noun d) Proper Noun
85. I saw beautiful flowers by the river.
 a) Adjective b) adverb c) noun d) pronoun
86. I am reading a novel.
 a) Verb b) adverb c) adjective d) noun
87. Rekha is good English.
 a) for b) at c) to d) with
88. Suresh looked his mother during her illness.
 a) after b) upon c) about d) at

- * **Instruction : Find the word with correct spellings.**

89. a) Relationship b) Relationsheep c) Rilationship d) none of these
90. a) Defination b) Definition c) Difenatioin d) None of these

- * **Instruction : Give the Synonyms of :**

91. He felt incensed at the way he was treated.
 a) Hurt b) Tortured c) Angry d) Insulted

92. Officers responsible for the abortive coup were punished
 a) Unsatisfying b) Bloodless c) Unsuccessful d) Chaotic
93. He never recovered from the loss of his wife.
 a) regain b) damage c) harm d) injury
94. The poor man stood abashed at the display of wealth.
 a) Embarrassed b) Humiliated c) Surprised d) Got rid
95. He received the accolade he deserved so well.
 a) Honour b) Appreciation c) Greeting d) Award

* **Instruction : Give the Antonyms of :**

96. The salesman's speech was punctuated with frivolous remarks.
 a) Profound b) Effective c) Grave d) Provocative
97. The drug gave him instant relief from pain
 a) Final b) Complete c) Genuine d) Delayed
98. His radical views made him unpopular.
 a) Conservative b) Narrow c) Outmoded d) Childish
99. The Indian cricketers put up a dismal performance in Australia.
 a) Cheerful b) Sprinted c) Bright d) Memorable
100. He was poor and arrogant.
 a) Modest b) Obedient c) Timid d) Earnest
101. If in a certain language, NATURE is coded as MASUQE, how is FAMINE coded in that code?
 a) FBMJND b) FZMHND c) GANIOE d) EALIME

* **Direction : In each of the following questions, four words have been given, out of which three are alike in some manner and one is different. Choose the odd one.**

102. a) Biscuits b) Chocolate c) Cake d) Break

* **Direction : In each of the following questions, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern and fill in the blank spaces.**

103. 4, 5, 9, 18, 34, (.....)
 a) 43 b) 49 c) 50 d) 59
104. A walks 10 metres in front and 10 metres to the right. Then every time turning to his left, he walks 5, 15 and 15 metres respectively. How far is he now from his starting point?
 a) 5 metres b) 10 metres c) 15 metres d) 20 metres

* **Direction : In each of the following questions, there is a certain relationship between two given words on one side of : : and one word is given on another side of : : while another word is to be found from the given alternatives, having the same relation with this word as the words of the given pair bear. Choose the correct alternative.**

105. Clock : Time : :
 a) Heat b) Radiation c) Energy d) Temperature

106. Cinnabar is an ore of
 a) Pb b) Zn c) Hg d) Cu
107. Which of them is not an ore of silver ?
 a) Ag_2S b) $AgNO_3$ c) $AgCl$ d) none of them
108. In the blast furnace/the flux is
 a) acidic b) basic c) amphoteric d) not matter
109. Liquation is used to refine
 a) iron b) tin c) copper d) gold
110. Metals have
 a) high melting and boiling point b) low melting and boiling point
 c) high melting and low boiling point d) low melting and high boiling point
111. Iron burns in air to form
 a) FeO b) Fe_2O_3 c) Fe_3O_4 d) FeO_2
112. Polymer used in making floor tiles is
 a) teflon b) polypropylene
 c) polyvinyl chloride d) buta-1, 3-diene
113. The carbon content in steel is
 a) 0.1-5.0% b) 2.0-2-5% c) 0.1-1.5% d) less than 0.1
114. Plaster of Paris is obtained by heating
 a) gypsum b) limestone
 c) sodium carbonate d) calcium sulphate
115. If a mango sapling grows too near the parent tree it:
 a) may not get sufficient sunlight b) may not get enough water
 c) may not be able to spread its branches d) all the above
116. Seeds are not used for reproduction in :
 a) lemons b) potatoes c) tomatoes d) jowar
117. a mango plant grows from a:
 a) stem cutting b) bud c) seed d) layering
118. Presence of fins and gills is a characteristic feature of :
 a) reptiles b) mammals c) amphibians d) fishes
119. Webbed feet is an adaptation of :
 a) aerial birds b) reptilian birds c) aquatic birds d) ostrich
120. ----- maintains balance in a monkey.
 a) tail b) hands c) legs d) head
121. Between which years, there had been battles between Marathas and the British?
 a) 1775 to 1818 b) 1785 to 1818, c) 1857 to 1885 d) 1818 to 1885

122. When was UNO founded?
 a) 24 Oct. 1945 b) 24 Oct. 1946 c) 24 Oct. 1984 d) 24 Oct. 1947
123. Who established National Congress on All India Level?
 a) Whyomeshchandra Banerjee b) Allen Hume,
 c) Sir. Willam Weder burn d) None of these
124. When did the frist session of National Congress took place.
 a) 24 Oct. 1885 b) 28 Oct. 1885 c) 23 oct. 1885 d) 26 Oct. 1885
125. In which types of rocks fossils are found?
 a) Sedimentary Rocks b) Igneous Rocks
 c) Metamorphic Rocks d) Metemorphosed Sedimentary Rocks
126. Which rocks are formed out of Magma?
 a) Sedimentary Rocks b) Metamorphic Rocks
 c) Igneous Rocks c) Metamorphiosed igneous Rocks
127. Which rocks are metal bearing rocks?
 a) Sedimentary Rocks b) Metamorphic Rocks
 c) Igneous Rocks c) Metamurphosed igneous Rocks
128. Which rock are formed due to the depositional work?
 a) Igneous Rock b) Sedimentary Rock c) Metamorphic Rock d) Extrogenic Igneous Rock
129. Which period is regarded as the extremist phase in the Indian freedom struggle.
 a) 1920 to 1935 b) 1914 to 1918 c) 1905 to 1920 d) 1930 to 1945
130. Lokmanya Tilak wrote the book called
- a) Geeta Rahasya b) Stree Purush Tulana c) Darpan d) Karmayoga
131. In which of the following States, is the child-sex ratio the lowest as per the 2011 Census ?
 a) Haryana b) Punjab c) Chhattisgarh d) Bihar
132. Which of the following was used as a chemical weapon in the First World War?
 a) Mustard gas b) Water gas c) Hydrogen cyanide d) Carbon monoxide
133. Who was chosen unanimously as the President of India ?
 a) K. R. Narayanan b) Dr. A.P.J. Abdul Kalam
 c) Dr. S. Radhakrishnan d) Neelam Sanjiva Reddy
134. Which one of the following taxes is not a direct tax?
 a) Sales tax b) Estate duty c) Gift tax d) Wealth tax
135. Who is/was the youngest Chief Minister of Uttar Pradesh?
 a) Akhilesh Yadav b) Mayawati c) Kalyan Singh d) Rajnath Singh
136. The black hole theory was discovered by—
 a) Hargobind Khurana b) C. V. Raman c) S. Ramanujan d) S. Chandrashekhar

137. Which one of the following rivers does not originate in India?

- a) Beas b) Chenab c) Sutlej d) Ravi

138. Who was the founder of the Ramakrishna Mission ?

- a) Sri Ramakrishna b) Swami Shraddhananda c) Keshab Chandra d) Swami Vivekananda

139. Standard cricket bats are made of

- a) Pine wood b) Rose wood c) Willow wood d) Rose wood

140. _____Kendriya Vidyalaya FRI was awarded by PM Narendra Modi as the cleanest school in the country

- a) Badrinath b) Mangalur c) Raipur d) Dehradun

PART - III ESSAY

* **Write an essay on any one of the following.**

10 M

a) My Favourite player.

b) My Favourite Game

c) My hobby.
