ENTRANCE EXAMINATION - X

DEFENCE CAREER ACADEMY, AURANGABAD.

As an ISO 9001 : 2008 - Certified

SET 1

ENT : 2023
TIME : 2.00 Hrs.

Sr. No.
MAXIMUM MARKS : 100

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 invetview on the same day.

6. This Test Booklet contains 100 items (Questions). Each item comprises four responses (Answers). 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.

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 100 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

1. Can we write O in the Form of *P/q*?
   a) Yes   b) No   c) Cannot be explained   d) None of the above

2. The degree of $4x^3 - 12x^2 + 3x + 9$ is
   a) 0   b) 1   c) 2   d) 3

3. The points $(-5, 2)$ and $(2, -5)$ lie in the
   a) Same quadrant   b) II & III quadrant respectively
   c) II & IV quadrant respectively   d) I & IV quadrant respectively

4. The graph of $x = 3$ is line
   a) Parallel to *x*-axis at distance of 3 units a from the origin
   b) Parallel to *y*-axis at a distance of 3 units from the origin
   c) Makes an intercept 3 on *x*-axis
   d) Makes an intercept 3 on *y*-axis

5. The diagonals of the rectangle ABCD intersect at O. If $\angle COD = 78^0$, then $\angle OAB$ is :
   a) 35^0 b) 51^0 c) 70^0 d) 110^0

6. $\triangle ABC = \triangle PQR$, then which of the following is ture?
   a) CB = QP   b) CA = RP   c) AC = RQ   d) AB = RP

7. The diagonals of parallelogram :
   a) Equal   b) Unequal   c) Bisesct each other   d) Have no relation

8. The region between chord & either of the are is called......?
   a) a sector   b) semicircle   c) a segment   d) quarter circle

9. With the help of a ruler and compasses, which of the following is not possible to construct?
   a) 70^0 b) 60^0 c) 135^0 d) 150^0

10. If the perimeter of one of the faces of a cube is 40 cm then its volume is
    a) 6000 cm³   b) 1600 cm³   c) 1000 cm³   d) 600cm²

11. 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

12. In $\triangle PQR$, if $\angle R > \angle Q$ then
    a) QR > PR   b) PQ > PR   c) PQ < PR   d) QR < PR

13. The point of concurrence of all angle bisectors of a triangle is called the ....
    a) centroid   b) circumcentre   c) incentre   d) orthocentre

14. $\sin^2\theta + \cos^2\theta = $ ....
    a) 0   b) 2   c) 1   d) 3

15. In equation $y = mx + c$, *m* is
    a) Intercept   b) Slope   c) Solution of the equation d)None of the above

16. Equal .... of the congruent circles subtend equal angles at the centess.
    a) Segments   b) Radii   c) Arcs   d) Chords

17. The curved surface area of a right circular cylinder of height 14 cm is 88 cm². The diameter of the base is
    a) 2 cm   b) 3 cm   c) 4 cm   d) 6 cm

18. If ABC & DBC are two isosceles triangles on the same base BC. Then
    a) $\angle ABD = \angle ACD$ b) $\angle ABD > \angle ACD$ c) $\angle ABD < \angle ACD$ d) None of the above

19. The zero of the polynomial $F(x) = 2x + 7$ is
    a) 2/7   b) – 2/7   c) 7/2   d) –7/2

20. $3\sqrt{6} + 4\sqrt{6}$ is equal to
    a) $6\sqrt{6}$ b) $7\sqrt{6}$ c) $4\sqrt{12}$ d) $7\sqrt{12}$

21. $Sin(90 - \theta) = $ ....
    a) $\sin\theta$ b) $\sec\theta$ c) $\cos\theta$ d) $\tan\theta$

22. The angles of a quadrilateral are in the ratio 4 : 5 : 10 : 11. The angles are :
    a) $36^0, 60^0, 108^0, 156^0$ b) $48^0, 60^0, 120^0, 132^0$ c) $52^0, 60^0, 122^0, 126^0$ d) $60^0, 60^0, 120^0, 120^0$

23. Two angles whos sum is equal to 180° are called ....
    a) Vestically opposite angles   b) Complementary angles
    c) Adjacent angles   d) Supplementary angles

24. Ratio of $\sin\theta = $ ....
    a) $\dfrac{\text{adjacent side}}{\text{hypotenuse}}$ b) $\dfrac{\text{opposite side}}{\text{hypotenuse}}$ c) $\dfrac{\text{opposite side}}{\text{adjecent side}}$ d) $\dfrac{\text{adjacent side}}{\text{opposite side}}$

25. The value which appears very frequently in a data is called ....
    a) Mean   b) Median   c) Mode   d) Central tendeng

26. In $\triangle ABC$, $AB = AC$ and $\angle B = 50^0$. Then $\angle C$ is equal to
    a) 40^0 b) 50^0 c) 80^0 d) 130^0

27. If a, b and c are the lengths of three sides of a triangle, then ....
    a) $a + b > c$ b) $a - b > c$ c) $a + b = c$ d) $a - b = c$

28. Ay point on line $x = y$ is of the form ....
    a) (K, – K)   b) (O, K)   c) (K, O)   d) (K, K)

29. A : B : C is in the ratio of 3 : 2 : 5. How much money will c get out of C 1260?
    a) 252   b) 125   c) 503   d) None of these

30. The surface area of a cube is 600 cm². The length of its diagonal is ....
    a) $\dfrac{10}{\sqrt{3}}$ cm   b) $\dfrac{10}{\sqrt{2}}$ cm   c) $10\sqrt{3}$ d) $10\sqrt{2}$ cm

31. The value of $\dfrac{2}{\tan 30^0}$ is.................
    a) $1\sqrt{3}$ b) $2\sqrt{3}$ c) $3\sqrt{3}$ d) $4\sqrt{3}$

32. The value of $\sqrt{10}$ times $\sqrt{15}$ is equal to
    a) $5\sqrt{6}$ b) $2\sqrt{3}$ c) $3\sqrt{3}$ d) $4\sqrt{3}$

33. Find the value of k, if $x^2 + kx + 6 = (x + 2)(x + 3)$
    a) – 1   b) 1   c) 3   d) 5

34. If X - coordinate of a point is zero, then the point lies on
    a) First quadrant   b) Second quadrant   c) x-axis   d) y-axis

35. If one of the angles of a triangle is 130^0, then the angle between the bisectors of the other two angles can be
    a) 50^0 b) 65^0 c) 145^0 d) 155^0

36. If ABC is an equilateral triangle, then each angle equals to ....
    a) 90^0 b) 180^0 c) 120^0 d) 60^0

37. Which of the following is the value of sin 90°?

a) $\frac{\sqrt{3}}{2}$ b) 0 c) $\frac{1}{2}$ d) 1

38. A diagonal of a rectangle is inclined to one side of the rectangle at 25°. The acute angle between the diagonals is

a) 25° b) 40° c) 50° d) 55°

39. If we want to construct a triangle, given its perimeter, then we need to know :

a) Sum of two sides of a triangle b) Difference between two sides of triangle

c) one base angles d) Two base angles

40. A Cone is 8.4 cm high and the radius of its base is 2.1 cm. It is melted and recast into Sphere. The radius of the sphere is

a) 4.2 cm b) 2.1 cm c) 2.4 cm d) 1.6 cm

41. The angles of a triangle are in the ratio 5:3:7. The triangle is

a) a right triangle b) an acute angled triangle

c) an obtuse angled triangle d) an isosceles triangle

42. ABCD is a cyclic quadrilateral such that AB is a diameter of the circle circumscribing it and ∠ADC = 140°, then ∠BAC is equal to

a) 30° b) 40° c) 50° d) 80°

43. Every rational number is

a) Whole number b) Natural number c) Integer d) Real number

44. The degree of $4x^3 - 12x^2 + 3x + 9$ is

a) 0 b) 1 c) 2 d) 3

45. The linear equation $3x - 11y = 10$ has

a) a unique solution b) Two Solutions c) Infinitely many solutions d) No Solutions

Choose the correct option:

46. Fill in the blank with the present perfect continuous tense form of the verb given in the bracket. "Workers _____ day and night." (work)

a) had been working b) have been working c) has been working d) are working

47. Fill in the blank with the past perfect tense form of the verb given in the bracket. "Vikram _____ his job." (do)

a) did b) was doing c) had done d) had been doing

48. Choose the correct sentence.

a) I did not accompanied them. b) I do not accompanied them.

c) I does not accompany them. d) I do not accompany them.

49. Identify the tense used in the given sentence. "Sasha scolds and asks her to go away."

a) Past indefinite tense b) Past perfect tense

c) Present indefinite tense d) Present perfect tense

50. Neither Rishi nor Rhea _____ a laptop.

a) has b) was c) are d) have

51. A series of seminars _____ conducted

a) was b) were c) are d) have

52. We did not _____ window.

a) closed b) has c) close d) closing

Identify the correct indirect speech of given direct speech:

53. Jacob said to me, "Have you read this book?"
    a) Jacob asked me if I have read this book
    b) Jacob asked me if I had read that book.
    c) Jacob asked me if I would read this book.
    d) Jacob asked me if I had been reading this book

54. Daniel said to me, "Where have you been?"
    a) Daniel asked me where I had been.
    b) Daniel told me where I should have been.
    c) Daniel told me where I was.
    d) Daniel said that I had not been there

55. The boss said, "Call him right now."
    a) The boss shouted and said to call him right then.
    b) The boss ordered me to call him quickly.
    c) The boss told me to call him now.
    d) The boss ordered me to call him right then

56. Person who does not believe in the existence of God:
    a) Theist
    b) Heretic
    c) Atheist
    d) Fanatic

57. A paper written by hand
    a) Handicraft
    b) Manuscript
    c) Handiwork
    d) Thesis

58. The absence of law and order
    a) Rebellion
    b) Anarchy
    c) Mutiny
    d) Revolt

59. This is _____ car I wanted
    a) The
    b) A
    c) An
    d) None of the Above

60. Two dollars_____ a small amount.
    a) are
    b) has
    c) have
    d) is

Read the given passage carefully and choose the best answer from the given alternatives:

Nepal lies between India and Tibet, among the Himalayan Mountains. The tallest mountain in the world, Mount Everest, is in Nepal, and there are several mountains nearly as high. When mountaineers try to climb Mount Everest, they take the help of the Sherpas, the strong and hardy people who live in these mountains, to carry heavy loads and to act as guides.

A long time ago, the Sherpas crossed over the mountains from Tibet and made their homes along the southern slopes of the Himalayas in Nepal.

Some Sherpa families have three houses, one house in the lower hills, one a little higher, and one further up. The houses are in small village groups of about forty or fifty. Round each group of houses there are cultivated fields, usually built in the shape of terraces right up the hillsides. In the highest fields the Sherpas grow potatoes; In the lower fields they grow barley; and turnips, garlic and other vegetables in the lower ones. They also graze their yaks on the higher mountain slopes in the summer and on the lower slopes in the winter. Yaks are very hardy, large cattle with thick, hairy blackish-brown coats and long horns. The Sherpas use them for almost everything they need. They ride them, plough with them, and use them to carry their goods. The hairy wool of these animals is made into cloth and their skins into leather boots and tents. The yaks also provide milk, fat and meat. Their dung is dried and used as fuel instead of wood or coal.

Answer the questions by choosing the best alternatives:

61. Nepal is situated :
    a) between Mount Everest and Tibet
    b) between Tibet and India
    c) between Tibet and Himalaya
    d) between Tibet and Mount Everest

62. Sherpas are not known for :
    a) their strength and hardness
    b) for cunningness
    c) their carrying heavy loads
    d) acting as guides.

63. Where do the Sherpas have their houses ?
    a) on the lower hills
    b) on a little higher
    c) another a little higher up
    d) all the three above

64. These things Sherpas do not grow on the lower fields :
    a) potatoes
    b) turnip and garlic
    c) other vegetables
    d) barley

65. What are the things for which yaks are not used ?
    a) for sports   b) wool of these animals is made into cloth
    c) their skins into leather boots and tents   d) to carry their goods.
66. 26, 37, 50, 65, ?, 101
    a) 77   b) 80   c) 81   d) 82
67. Find the wrong number in the series : 225, 289, 338, 374, 397, 415, 424
    a) 415   b) 397   c) 338   d) 374
68. Find the wrong number in the series : 10, 12, 28, 90, 368, 1840, 11112
    a) 1840   b) 368   c) 90   d) 8728
69. 'Numismatic' is related to 'Coin' in the same way as 'Paleontology' is related to
    a) Earth   b) Soil   c) Fossils   d) Stones
70. 'Seismograph' is related to 'Earthquakes' in the same way as 'Thermometer' is related to
    a) Fever   b) Doctor   c) Temperature   d) mercury
71. Which muscles act involuntarily?
    (i) Striated muscles   (ii) Smooth muscles   (iii) Cardiac muscles   (iv) Skeletal muscles
    a) (i) and (ii)   b) (ii) and (iii)   c) (iii) and (iv)   d) (i) and (iv)
72. Meristematic tissues in plants are
    a) localised and permanent   b) not limited to certain regions
    c) localised and dividing cells   d) growing in volume
73. Which plant kingdom can survive both on land and in the water?
    a) Tracheophyta   b) Pteridophyta   c) Thallop nyta   d) Bryophyta
74. A plant that has seeds but no flowers and fruits?
    a) Bryophytes   b) Gymnosperms   c) Mosses   d) Pteridophytes
75. What would be the displacement of a particle moving in a circular path of radius r after a displacement
    of half a circle?
    a) $2\pi r$ b) πr c) $2r$ d) Zero
76. The path length travelled by a body in a given time interval is known as
    a) distance   b) velocity   c) acceleration   d) moment
77. What is true about homogeneous mixture?
    a) Homogeneous mixture is the mixture of two or more than two components.
    b) In homogeneous mixture the composition and properties are uniform throughout the mixture
    c) both (a) and (b) are true
    d) none of the above
78. Which of the following properties does not describe a compound?
    a) It is composed of two or more elements
    b) It is a pure substance.
    c) It cannot be separated into constituents by physical means
    d) It is mixed in any proportion by mass
89. When a body falls freely towards the earth, then its total energy
    a) increases   b) decreases   c) remains constant   d) first increases and then decreases
80. A car is accelerated on a levelled road and attains a velocity 4 times of its initial velocity.
    In this process the potential energy of the car
    a) does not change   b) becomes twice to that of initial
    c) becomes 4 times that of initial   d) becomes 16 times that of initial
81. S&P lowers India GDP growth forecast by 30 bps to_____ in 2022-23
    a) 3%   b) 4%   c) 7%   d) 4%

82. Which of the following film won the 'Golden Pecock' for the best film of the 53rd edition of the International Film Festival
a) Cinema Bandi   b) No End   c) I Have electric Dreams   d) Spotlight

83. Who has become the first Women President of Indian Olympic Association?
a) Ashwini Nachappa   b) G.V. Dhanalakshmi   c) P.T. Usha   d) Dutee Chand

84. What is the name of rules which govern the International Gymnastics under the aegis of FIG?
a) International Rules for Sport of Gymnastics   b) Gymnastics Code
c) Rules of Conduct of Gymnastics   d) Code of Points

85. The Summer and Winter Olympic Games are spaced how many years apart?
a) 2   b) 3   c) 4   d) 1

86. Who among the following is the union minister of coal
a) Prahlad Joshi   b) PiyushGoyal   c) Dr. Virendra Kumar   d) None of these

87. Who is the School Education and Marathi Language Minister of Maharastra
a) Atul Save   b) Deepak Kesarkar   c) TanajiSawant   d) None of These

88. Why is the Nobel Prize Award Ceremony held on December 10 each year?
a) Alfred Nobel discovered dynamite on this day   b) Alfred Nobel was born on this day.
c) Alfred Nobel passed away on this day   d) Alfred Nobel received his patent for the discovery of dynamite

89. Who was the only Secretary General of the UNO to have died while in office?
a) U Thant   b) Dag Hammarskjöld c) Trygve Lie   d) Kurt Waldhiem

90. Who started vaccination?
a) Jonas E. Salk   b) Edward Jenner   c) Paul Muller   d) Robert Frost

91. _____ is not included in physical sources.
a) Coins   b) Ornaments   c) Buildings   d) Proverbs

92. _____ is the father of the Green Revolution in India.
a) D. R. Verghese Kurien b) Homi Bhabha c) M. S. Swaminathan d) Dr Norman Borlaug.

93. Which one of the following countries does not have veto power in the Security Council of the United Nations?
a) United States   b) Britain   c) Germany   d) China

94. The Central powers during the First World War included countries like Germany, Turkey and ....
a) France   b) Austria   c) Britain   d) Russia

95. What is 'Parliament'?
a) Assembly of elected representatives at the national level   b) A body consisting of appointed ministers
c) Body comprising judges   d) Assembly of only appointed members

96. Which body acts as the guardian of Fundamental Rights?
a) District Courts   b) Supreme Court   c) Election Commission   d) Legislature

97. Whom does the President appoint as the Prime Minister?
a) Anyone he likes   b) Leader of the majority party
c) MP who has secured the largest number of votes   d) None of the above

98. Migration change the number, distribution & composition of the population.
a) the area of departure   b) the area of arrival
c) both the area of departure & arrival   d) none of the above

99. A large proportion of children in a population is a result of
a) high birth rate   b) high life expectancies c) high death rate   d) more married couples

100. Which one of the following country has higher population density than India?
a) Bangladesh   b) Nepal   c) Korea   d) Canada