MAI BHAGO ARMED FORCES PREPARATORY INSTITUTE FOR GIRLS, MOHALI

NDA PREPARATORY WING ENTRANCE EXAM

Marks : 500 **Jan 2026** **Time : 2 hours 30 minutes**

ROLL NO._____	**SIGNATURE**_____
NAME_____	**DATE/TIME**_____

INSTRUCTIONS FOR CANDIDATES

i.	Before attempting the paper, carefully read all the Instructions & Examples given on Side 1 of Answer Sheet (OMR Sheet) supplied separately.
ii.	An OMR Answer Sheet is being provided separately along with this Test Booklet. Please fill up all relevant entries like Roll Number, Test Booklet Code etc in the spaces provided on the OMR Answer Sheet and put your signature in the box provided for this purpose.
iii.	Make sure to fill the correct Booklet Code on Side 2 of the OMR Answer Sheet. If the space for the Booklet Code is left blank or more than one Booklet Codes are indicated, it will deem to be incorrect Booklet Code and thus, the Answer Sheet will not be evaluated. The Candidate herself will be solely responsible for all the consequences arising out of any error or omission in writing the Test Booklet Code.
iv.	At the start of the examination, please ensure that all pages of your Test Booklet are properly printed; your Test Booklet is not damaged in any manner and contains **125 questions**. In case of any discrepancy, the candidate should immediately report the matter to the Invigilator for replacement of the Test Booklet. No claim in this regard will be entertained at a later stage.
v.	This Test Booklet comprises 12 pages containing **125 questions** in two Sections. **Section I** consists of **65 question** and **Section II** of **60 questions**. **Section I** includes questions on General English, General Science and Awareness and **Section II** includes questions on Mathematics. A total of **2 hours 30 minutes** will be given to solve the Test Paper. No separate indication will be given with respect to any Section. Against each question, four alternatives (1), (2), (3), (4) are given, out of which only one is correct. Indicate your choice of answer by darkening the circle with **BLACK/BLUE** pen in the OMR Answer Sheet supplied to you separately. Use of pencil is **NOT ALLOWED**. More than one answers indicated against a question will be deemed as incorrect response.
vi.	The maximum marks are **500**. Each question carries **FOUR** marks. Each right answer will carry four marks. There will be **NEGATIVE MARKING. One mark** will be deducted for every wrong answer.
vii.	Do not fold or make any stray marks on the OMR Answer Sheet. Any stray marking or smudge on the OMR Sheet will be taken as wrong answer. Any damage to OMR Answer Sheet may result in disqualification of the candidate.
viii.	On completion of the test, the candidate must hand over the OMR Answer Sheet, Test Booklet Paper and Admit Card to the invigilator on duty in the examination hall.
ix.	Use of Mobile phone or any other similar electronic gadget is not permitted.
x.	All belongings must be kept outside the Examination Hall. Other than the Admit Card, no other paper of any kind can be retained while taking the Test.

SECTION I : GENERAL ENGLISH, GENERAL SCIENCE & AWARENESS

(65 Questions – 260 Marks; Minimum **65 Marks** to Qualify**; Minus1 Mark** for every **wrong Answer**)

Directions (Questions 1-4) : In these questions, out of the four alternatives, choose the one which best expresses the meaning of the word in bold.	
1.	Their position is so utterly **preposterous** it could be construed as libel. 1. practical 2. absurd 3. praiseworthy 4. forlorn
2.	I cannot believe in the **veracity** of his statement. 1. truth 2. usefulness 3. sincerity 4. falsity
3.	There is not a single word that is **redundant** in the report. 1. unimportant 2. not needed 3. bombastic 4. flowery
4.	Old photos of Maggie show her young and **demure**. 1. competent 2. shy 3. confident 4. elegant
Directions (Questions 5-8) : Four alternatives are given for the idiom/phrase. Choose the one which best expresses its meaning.	
5.	They **call the shots**, and we're just here to help them figure out whatever they need. 1. To continue doing something 3. To be the center of attraction 2. To be in charge of something 4. To give up doing something
6.	The mob, **egged on** by the republicans, attacked the palace where the king was lodged, and he escaped with difficulty. 1. Forced 2. Pleased 3. Urged 4. Duped
7.	He's going to announce his candidacy for mayor - **the balloon goes up** on Monday. 1. Try very hard to understand or do something. 2. To go down a course of action that leads to a bad outcome. 3. The situation turns serious. 4. Doing something risky.
8.	The senator said that her opponent was quite competent for someone so inexperienced; you hear nothing but **left-handed compliments** in these debates. 1. A controversial statement 2. A statement meant to provoke someone 3. Something that gives encouragement 4. An insult in the guise of an expression of praise
Directions (Questions 9-12) : Each item in this section has four possible substitutions for the underlined part. Choose the one that can correctly replace the underlined words/phrases.	
9.	We are doing this **in the interest of the poors.** 1. in the interests of the poors. 2. in the interests of the poor. 3. for the interests of the poor. 4. No improvement
10.	There is many a slip between **the cup and lip.** 1. cup and lip 2. cups and lips 3. the cup and the lip 4. No improvement
11.	If Ramesh **will be promoted** he will get a higher salary. 1. was promoted 2. is promoted 3. would be promoted 4. No improvement
12.	He persisted **to do it** in spite of my advice. 1. to doing it 2. in doing it 3. for doing it 4. from doing it

Directions (Questions 13-16) : You have one brief passage with four questions following the passage. Read the passage carefully and choose the best answer to each question out of the four alternatives.

In the modern world, progress is often measured in terms of economic growth, technological innovation, and increased productivity. While these indicators suggest advancement, they do not always reflect the overall well-being of society. In many cases, rapid development has widened social inequalities and placed immense pressure on natural ecosystems. As a result, the idea of "sustainable development" has gained prominence in policy discussions and educational discourse.

Sustainable development refers to a model of growth that meets present needs without compromising the ability of future generations to meet their own. It demands a careful balance between economic expansion, environmental protection, and social equity. However, achieving this balance is complex, as short-term economic benefits often appear more attractive than long-term environmental responsibility.

Education plays a crucial role in addressing this challenge. When students are encouraged to think critically about consumption, resource use, and social responsibility, they are better equipped to make informed decisions. Rather than viewing development as unlimited exploitation, education can promote an understanding of growth that is inclusive, ethical, and environmentally conscious.

Ultimately, the success of sustainable development depends not only on government policies or technological solutions, but also on a shift in individual attitudes. Recognising the interdependence between humans and nature is essential for creating a future that is both prosperous and sustainable.

13. What is the central idea of the passage?
1. Industrialisation should be stopped completely
2. Environmental conservation requires collective effort
3. Governments alone can protect the environment
4. Urban expansion is unavoidable

14. According to the passage, technological advancement has
1. only improved living standards
2. reduced the use of natural resources
3. improved life but increased environmental damage
4. had no impact on the environment

15. Which of the following environmental problems is **NOT** mentioned in the passage?
1. Deforestation 2. Water pollution 3. Climate change 4. Air pollution

16. Which action is suggested as a sustainable practice?
1. Increased industrial production
2. Excessive use of resources
3. Conserving water and electricity
4. Ignoring environmental laws

Directions (Questions 17-20) : In following questions, there are four alternatives for each of the given words. Choose the one which is opposite in meaning to it.

17. **REVOKE**
1. repeal 2. withdraw 3. implement 4. discard

18. **AMATEURISH**
1. skilled 2. professional 3. seasoned 4. trained

19. **EXTRAVAGANT**
1. Sensible 2. Careful 3. Economical 4. Balanced

20. **COMPLACENT**
1. Discontented 2. Self-satisfied 3. Curious 4. Militant

DIRECTIONS (Questions 21-23): Each of the following items in this section consists of a sentence the part of which have been jumbled. These parts have been labelled P, Q, R and S. Given below each sentence are four sequences namely 1, 2 ,3 and 4. You are required to re-arrange the jumbled part of the sentence and mark your response accordingly.

21. Is often worse than / to make him sad / to hurt a person's heart / breaking his head
P Q R S
1. PSQR 2. SRQP 3. QPRS 4. RQPS

22.	relieve nausea, pain and stress / aromatherapy may also help / using lavender oil on their skin / P Q R but patients are cautioned against S 1. RQPS 2. SQPR 3. QPSR 4. RPSQ
23.	in the years following / india achieved remarkable economic development / P Q liberalization in the year 1991 / the landmark reforms inaugurated via R S 1. PQRS 2. PRSQ 3. QSPR 4. QPSR
DIRECTIONS (Questions 24-27): Each of the following sentences in this section has a blank space and four words or group of words given after the sentence. Select the word or group of words you consider the most appropriate for the blank space and indicate your response on the Answer Sheet accordingly.	
24.	It is time we _____with determination. 1. act 2. acted 3. have acted 4. will act
25.	Are you really desirous _____ visiting Japan? 1. of 2. in 3. to 4. about
26.	Population increase _____ with depletion of foreign reserves has led to great daily hardships. 1. joined 2. mixed 3. added 4. coupled
27.	When Indians from the south move north, they find certain aspects of life quite _____ from their own. 1. strange 2. separate 3. different 4. divergent
DIRECTIONS: (Questions. 28-30) In each of the questions given below are words spelt in four different ways. Choose the option that gives the correct spelling of the word.	
28.	1. Diarrhea 2. Dierrhoea 3. Diarrhoea 4. Dairrhoea
29.	1. Heterogenous 2. Heterogeneous 3. Hetrogeneous 4. Heterogenuous
30.	1. Simultaneous 2. Simultanuous 3. Simultenous 4. Simaltaneous
31.	The focal length of a concave mirror is 30 cm. Where should an object be placed to get an image of the same size as the object? 1. At 15 cm 2. At 30 cm 3. Between 15 cm and 30 cm 4. Beyond 30 cm
32.	The pH of an acidic solution is 3. On dilution, the pH will: 1. Decrease 2. Increase 3. Remain the same 4. Become zero
33.	The excretory unit of the kidney is called: 1. Neuron 2. Nephron 3. Neurilemma 4. Nephridium
34.	What are the two-tier tax structure approved in GST 2.0? 1. 5% & 12% 2. 12% & 28% 3. 5% & 18% 4. 12% & 18%
35.	What commodity marked the beginning of Civil Disobedience Movement? 1. Rice 2. Salt 3. Cotton 4. Pulses
36.	Name the type of soil most suitable for growing Cotton in India. 1. Alluvial soil 2. Red soil 3. Black soil 4. Laterite soil
37.	What is a system of government in which the power is divided between a central authority and various constituent units of the country? 1. Federalism 2. Democracy 3. Socialism 4. Union

38.	The refractive index of water is 1.33. The speed of light in water is approximately: 1. 3×10^8 m/s 2. 2.25×10^8 m/s 3. 1.33×10^8 m/s 4. 1.5×10^8 m/s
39.	Which statement about carbon compounds is incorrect? 1. They have low melting and boiling points 2. They are generally good conductors of electricity 3. They form covalent bonds 4. They can show isomerism
40.	The primary function of the lymphatic system is to? 1. Produce red blood cells 2. Transport oxygen to tissues 3. Maintain fluid balance and immunity 4. Store carbohydrates
41.	Group Captain Shubhanshu Shukla's travel to space and experiences at International Space Station has paved way for which space programme for India? 1. Mangalyaan 2. Gaganyaan 3. Chandrayaan 4. Aditya-L1
42.	On which date did Jallianwala Bagh massacre happen? 1. 13 March 1919 2. 13 April 1921 3. 13 April 1919 4. 13 March 1921
43.	A land that includes rocky, arid and desert areas is known as :- 1. Waste Land 2. Fertile Land 3. Wet land 4. Dry Land
44.	A direct vote in which an entire electorate is asked to either accept or reject a particular proposal is called as :- 1. Electoral 2. Coalition 3. Referendum 4. Voting
45.	The current flowing through a resistor and the potential difference across it are each doubled. By what factor does the heat produced increase: 1. 2 2. 3 3. 4 4. 8
46.	When a small piece of sodium is added to water: 1. It sinks and reacts slowly 2. It floats and reacts vigorously 3. It dissolves without reaction 4. It forms a greenish gas
47.	In blood, platelets are required for: - 1. transporting oxygen 2. transporting carbon dioxide 3. initiating blood clotting 4. initiating degradation of urea
48.	Which of the following structures in a flower **directly takes part in fertilisation**? 1. Sepal 2. Petal 3. Ovule 4. Ovary wall
49.	Who won the Nobel Peace Prize for year 2025? 1. Lazlo Krasznahorkai 2. John Clarke 3. Maria Corina Machado 4. Susumu Kitangwa
50.	The Ashoka Chakra in our National Flag denotes :- 1. Renunciation 2. Dharma 3. Peace 4. Equality
51.	Who initiated the Bhoodan-Gramdan movement, also known as the Blood-less Revolution? 1. Vinoba Bhave 2. Mahatma Gandhi 3. Ishwar Chander Vidyasagar 4. Dr B.R. Ambedkar
52.	A car starts from rest and attains a speed of 20 m/s in 10 s. The distance covered is: 1. 50 m 2. 100 m 3. 150 m 4. 200 m
53.	Which of the following reactions represents a **redox reaction**? 1. $CaCO_3 \rightarrow CaO + CO_2$ 2. $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$ 3. $HCl + NaOH \rightarrow NaCl + H_2O$ 4. $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$
54.	Baking soda is obtained by the reaction of: 1. $NaCl + NH_3 + CO_2 + H_2O$ 2. $NaCl + H_2O$ 3. $Na_2CO_3 + CO_2$ 4. $NaOH + HCl$

55.	Which of the following statements about photosynthesis is correct? 1. Oxygen is consumed during photosynthesis 2. CO_2 is produced during photosynthesis 3. Chlorophyll absorbs sunlight for the process 4. Photosynthesis occurs in mitochondria
56.	Who won the ICC women's cricket world cup 2025? 1. Australia 2. England 3. South Africa 4. India
57.	In 1870, a hymn to the motherland **'Vande Matram'** was written by :- 1. Bal Gangadhar Tilak 2. Bankim Chandra Chattopadhyay 3. Bankim Chandra Chatterjee 4. Rabindranath Tagore
58.	Rabi and Kharif are the two major cropping seasons in India. Which is a short cropping season in between the two? 1. Summer season 2. Zaid season 3. Harvesting season 4. Monsoon season
59.	The temperature at which "vapour pressure of the liquid in an open vessel becomes equal to the atmospheric pressure" is called : 1. Melting Point 2. Boiling Point 3. Liquid Point 4. None of the above
60.	An electric bulb is rated 220 V and 100 W. The resistance of the filament is: 1. 484 Ω 2. 220 Ω 3. 440 Ω 4. 500 Ω
61.	Which of the following has the **highest electrical conductivity** in aqueous solution? 1. CH_3COOH 2. NaCl 3. NH_4OH 4. C_2H_5OH
62.	In human females, the fertilization of egg takes place in the: 1. Uterus 2. Ovary 3. Fallopian tube 4. Cervix
63.	Name the river over which world's highest railway arch bridge was inaugurated by our Prime Minister in year 2025? 1. Ganga 2. Chenab 3. Jhelum 4. Brahmaputra
64.	Bhagat Singh, Jatin Das and Ajoy Ghosh were associated with which organization founded in 1928? 1. Hindustan Socialist Republican Army 2. Indian National Congress 3. Swaraj party 4. Indian National Army
65.	Only 2.5 percent of the total volume of world's water is estimated to exist as freshwater. Nearly 70 percent of this freshwater occurs in the form of :- 1. Ice sheets 2. Glaciers 3. Neither 1&2 4. Both 1&2

…….. End of Section-1……..

SECTION II : MATHEMATICS

(60 Questions – 240 Marks; Minimum **60 Marks** to Qualify**; Minus 1 Mark** for every **wrong Answer**)

66.	If n is an even integer and x > 0, x ≠ 1, then the median of the data a, ax, ax^2, ax^3, …, ax^n is: 1. ax^{n-1} 2. $a\,x^{\left(\frac{n}{2}\right)-1}$ 3. $ax^{(n/2)}$ 4. $ax^{(n/2)+1}$
67.	The sum of the length, breadth and height of a cuboid is $6\sqrt{3}$ cm and the length of its diagonal is $2\sqrt{3}$ cm . The total surface area of the cuboid is: 1. 48 cm^2 2. 72 cm^2 3. 96 cm^2 4. 108 cm^2
68.	A cylinder vessel of radius 4 cm contains water. A solid sphere of radius 3 cm is lowered into the water until it is completely immersed. The water level in the vessel will rise by: 1. $\frac{2}{9}\,cm$ 2. $\frac{4}{9}\,cm$ 3. $\frac{9}{4}\,cm$ 4. $\frac{9}{2}\,cm$
69.	If $\sin A - \cos A = 0$, then, the value of $sin^4A - cos^4A$ is : 1. 2 2. 1 3. $\frac{3}{4}$ 4. 0
70.	If $(\sin\theta + \text{cosec}\,\theta)^2 = (\cos\theta + \sec\theta)^2 = k\tan^2\theta + \cot^2\theta$, then k = 1. 1 2. 2 3. 5 4. 7
71.	If one of the zeroes of the quadratic polynomial $(k-1)x^2 + kx + 1$ is -3, then value of k is: 1. $\frac{4}{3}$ 2. $-\frac{4}{3}$ 3. $\frac{2}{3}$ 4. $-\frac{2}{3}$
72.	Rani and Maya are very close friends. They decided to go to Amritsar with their families in separate cars. Rani's car travels x km/hr while Maya's car travels 5km/hr faster than Rani's car. Rani took 4 hours more than Maya to complete journey of 400 km. The speed of Rani's car is (in Km/hr): 1. 20 2. 15 3. 25 4. 10
73.	If the line segment joining the points (3, -4) and (1, 2) is trisected at points P (a , -2) and Q ($\frac{5}{3}$, b). Then: 1. a = $\frac{8}{3}$, b = $\frac{2}{3}$ 2. a = $\frac{7}{3}$, b = 0 3. a = $\frac{1}{3}$, b = 1 4. a = $\frac{2}{3}$, b = $\frac{1}{3}$
74.	A bus takes three hours less for a journey of 360 km if its speed is increased by 10 km/hr from its original speed. Its original speed is: 1. 50 km/hr 2. 30 km/hr 3. 20 km/hr 4. 70 km/hr
75.	ABCD is a trapezium with AB ll DC. The diagonals AC and BD meet at O. If $\text{AO} = 3x - 19, \text{OC} = x - 5, \text{BO} = x - 3$ and $\text{OD} = 3$, then the value of x is: 1. 4 2. 8 3. 6 4. 12
76.	Two numbers 'a' and 'b' are selected successively without replacement in that order from the integers 1 to 10. The probability that $\frac{a}{b}$ is an integer, is: 1. $\frac{17}{45}$ 2. $\frac{1}{5}$ 3. $\frac{17}{90}$ 4. $\frac{8}{45}$
77.	The average marks of 42 students in an examination are 76. The ratio of the number of boys to girls is 10 : 11. The average marks obtained by the boys are 18% more than the average marks obtained by the girls. Find the average marks obtained by the boys. 1. 75.6 2. 73.5 3. 82.6 4. 75.2
78.	The number of solid spheres, each of diameter 6 cm that can be made by melting a solid metal cylinder of height 100 cm and diameter 18 cm is: 1. 325 2. 250 3. 225 4. 350
79.	If $\frac{tan^3\theta - 1}{\tan\theta - 1} = A\,sec^2\theta + B\tan\theta$, then $A + B$ is equal to 1. 1 2. -1 3. 2 4. - 2

80. If cos θ = $\frac{4}{5}$, then 4 $\sec^2\theta$ + 4 $\tan^2\theta$ -7 is equal to :

1. $\frac{1}{2}$ 2. $\frac{3}{2}$ 3. $\frac{2}{3}$ 4. 2

81. If $\frac{x}{b-c} = \frac{y}{c-a} = \frac{z}{a-b}$, then the value of $ax + by + cz$ is:

1. 0 2. -1 3. 1 4. xyz

82. Rajesh can row a boat 4 km upstream in 2 hours and 20 km downstream in 2 hours. The speed of boat in still water and the speed of stream respectively are:

1. 10 km/hr; 2 km/hr 2. 6 km/hr; 4 km/hr
3. 6 km/hr;2 km/hr 4. 10 km/hr;4 km/hr

83. A line intersects the y-axis and x-axis at P & Q, respectively. If (2-5) is the mid-point of PQ then the coordinates of P & Q are , respectively:

1. (0 ,- 5) & (2, 0) 2. (0 , 10) & (-4, 0)
3. (0 4) & (-10, 0) 4. (0 ,- 10) & (4, 0)

84. A trader purchases a table and a chair for ₹4250/-. He sells them making a profit of 10% on the table and 15% on chair. He earns a profit of ₹550.50. The difference between the original price of table and the chair is equal to:

1. ₹ 800/- 2. ₹ 900/- 3. ₹ 770/- 4. ₹ 950/-

85. Rs 366 is to be divided among A, B and C in such a way that three times A's share is equal to four times B's share and seven times C's share. Then B's share is:

1. Rs 168 2. Rs 366 3. Rs 126 4. Rs 72

86. Two different coins are tossed simultaneously. The probability of getting at least one head is:

1. $\frac{1}{4}$ 2. $\frac{1}{8}$ 3. $\frac{3}{4}$ 4. $\frac{7}{8}$

87. The median of the following data is 50. Find the value of p and q, if the sum of all the frequencies is 90.

Marks	20 - 30	30 – 40	40- 50	50 – 60	60 - 70	70 – 80	80 – 90
No of students	p	15	25	20	q	8	10

1. p = 5, q = 7 2. p = 7, q = 9 3. p = 5, q = 3 4. p = 3, q = 9

88. The diameter of a sphere is 12 cm. It is melted and drawn into a wire of diameter 4 mm. The length of the wire is:

1. 72 m 2. 64 m 3. 76 m 4. 68 m

89. If a 1.5 m tall girl stands at a distance of 3 m from a lamp-post and casts a shadow of length 4.5 m on the ground, then the height of the lamp-post is:

1. 1.5 m 2. 2 m 3. 2.5 m 4. 2.8 m

90. If 15 $\tan^2\theta$ + 4 $\sec^2\theta$ = 23, then the value of (sec θ +cosec θ)^2 – $\sin^2\theta$ is:

1. 7 2. $\frac{15}{2}$ 3. $\frac{9}{2}$ 4. $\frac{11}{2}$

91. If $\frac{a^3+3ab^2}{b^3+3a^2b} = \frac{63}{62}$, $a : b$ equals:

1. 2: 3 2. 1: 3 3. 3: 2 4. 3 : 1

92. If $\frac{2}{x} + \frac{3}{y}$ = 13 and $\frac{5}{x}$ - $\frac{4}{y}$ = -2 , then x + y equals:

1. $\frac{1}{6}$ 2. $-\frac{1}{6}$ 3. $\frac{5}{6}$ 4. $-\frac{5}{6}$

93. Three horses are tied to three posts placed at the vertices of an equilateral triangular field. The edges of the field measure 10 m each and the length of the rope tied to each horse measures 5m. The area of the field that cannot be grazed by the horses is (take $\sqrt{3} = 1.73$ and π =$\frac{22}{7}$):

1. 3.96 m^2 2. 3.54 m^2 3. 3.25 m^2 4. 3.69 m^2

94. A father's age is six times his son's age. Four years hence, the age of the father will be four times the son's age. The present age of the son and the father respectively are:

1. 4 years & 24 years
2. 5 years & 30 years
3. 6 years & 36 years
4. 3 years & 24 years

95. Forty-eight men, working 8 hours a day, can dig a tunnel 200 metres long, 3 metres wide, and 2 metres deep in 10 days. How many days will it take 10 men, working 6 hours a day, to dig a tunnel 100 metres long, 4 metres wide, and 3 metres deep?

1. 100 days
2. 60 days
3. 120 days
4. 64 days

96. The probability of guessing the correct answer to a certain test question is $\frac{x}{12}$. If the probability of not guessing the correct answer to this question is $\frac{2}{3}$, then x =

1. 2
2. 3
3. 4
4. 6

97. A 100 m race was organized in school sports meet. The time was recorded with the help of a stopwatch. The table shown describes the times in which the race was finished by the number of students.

Time (sec)	0 – 20	20 – 40	40 – 60	60 – 80	80 - 100
No of students	15	18	21	29	17

Estimate the mean time taken by a student to finish the race.

1. 40
2. 53
3. 43
4. 47

98. If the height and base of a cone, each is increased by 50%, then the ratio between the volume of the given cone to the new cone is:

1. 8 : 27
2. 27 : 8
3. 4 : 9
4. 2 : 3

99. Two persons are 'a' meters apart and the height of one is double that of the other. If from the middle point of the line joining their feet, an observer finds the angular elevation of their tops to be complementary, then the height of the shorter person is:

1. $\frac{a}{4}$
2. $\frac{a}{\sqrt{2}}$
3. $a\sqrt{2}$
4. $\frac{a}{2\sqrt{2}}$

100. The value of $\frac{\cos^3 20° - \cos^3 70°}{(\sin^3 70° - \sin^3 20°)}$ is :

1. $\frac{1}{2}$
2. $\frac{1}{\sqrt{2}}$
3. 1
4. 2

101. The LCM of two numbers is 90 times their HCF. The sum of LCM and HCF is 1456. If one of the numbers is 160, then what is the other number?

1. 120
2. 136
3. 144
4. 184

102. The quadratic polynomial whose zeroes are reciprocal of the zeroes of quadratic polynomial $ax^2 + bx + c$, $a \neq 0$, $c \neq 0$, are given by:

1. $k(cx^2 + ax + b)$
2. $k(cx^2 + bx + a)$
3. $k(cx^2 - bx + a)$
4. $k(cx^2 + bx - a)$ where k is anon zero real number

103. The perimeter of a triangle with vertices (0, 4) and (0, 0) and (3, 0) is:

1. $7 + \sqrt{5}$
2. 5
3. 10
4. 12

104. Which term of the A.P 24, 21, 18, …….is the first negative term?

1. 7^{th}
2. 8^{th}
3. 9^{th}
4. 10^{th}

105. A shopkeeper marks his goods 25% above the cost price and allows his customers a discount of $\frac{25}{2}$%. His profit, then, is:

1. 8 %
2. 8.5 %
3. 9.625 %
4. 9.375 %

106. Hundred cards marked with numbers 1 to 100 are placed in a box. If a card is selected randomly from the box, then the probability that the number on the card selected is perfect square is:

1. $\frac{1}{100}$
2. $\frac{1}{25}$
3. $\frac{1}{10}$
4. $\frac{9}{10}$

107.	The mean of first n odd natural numbers is $\frac{n^2}{81}$, then n is:						
	1. 9	2. 81		3. 27		4. 18	
108.	If the radii of the bases of a cylinder and a cone are in the ratio 3 : 4 and their heights are in the ratio 2 : 3, then the ratio between the volume of cylinder to that of the cone is:						
	1. 7 : 5	2. 5 : 7		3. 8 : 9		4. 9 : 8	
109.	The angles of depression of two ships from the top of a light housed are 45° and 30° towards east. If the ships are 100 m apart, then height of the light house is:						
	1. $\frac{50}{\sqrt{3}+1}$ m	2. $\frac{50}{\sqrt{3}-1}$ m		3. $50(\sqrt{3}+1)$ m		4. $50(\sqrt{3}-1)$ m	
110.	$\frac{2\tan(30°)}{(1-\tan^2(30°)}$ is equal to:						
	1. cos 60 °	2. sin60 °		3. tan 60 °		4. sin30 °	
111.	What least number must be subtracted from 1294 so that the remainder when divided by 9, 11,13 will leave in each case the same remainder 6 ?						
	1. 0	2. 1		3. 2		4. 3	
112.	A shopkeeper buys some books for Rs 80. If he had bought 4 more books for the same amount, each book would have costed Rs 1.0 less. Then, the number of books he bought is:						
	1. 20	2. 80		3. 10		4. 16	
113.	If the coordinates of one end of a diameter of a circle are (2 , 3) and the coordinates of its center are (-2, 5), then the coordinates of the other end of the diameter are:						
	1. (-6 , 7)	2. (6, -7)		3. (6, 7)		4. (-6 , -7)	
114.	If the first term of an A.P. is p and the common difference is q , then its 10^{th} term is:						
	1. q + 9p	2. P – 9q		3. P +9q		4. 2p + 9q	
115.	Harnoor decided to donate 5% of her salary. On day of the donation, she changed her mind and donated ₹1627.50, which was 75% of what she had decided earlier. How much is Harnoor's salary?						
	1. ₹ 43,750/-	2. ₹ 45,500/-		3. ₹ 43400/-		4. ₹ 43,500/-	
116.	The three-digit number is chosen at random, the probability that its hundred's digit, ten's digit and unit's digit are consecutive integers in descending order, is:						
	1. $\frac{1}{75}$	2. $\frac{4}{225}$		3. $\frac{2}{225}$		4. $\frac{1}{45}$	
117.	If the median of the data $\frac{x}{5}$, x, $\frac{x}{3}$, $\frac{2x}{3}$, $\frac{x}{4}$, $\frac{2x}{5}$, $\frac{3x}{4}$, x > 0 is 4, then x=						
	1. 5	2. 10		3. 8		4. 7	
118.	The edge of a cube whose volume is equal to that of a cuboid of dimensions 16 cm x 8 cm x 4 cm is:						
	1. 12 cm	2. 8 cm		3. 4 cm		4. 6 cm	
119.	A ladder makes an angle of 60° with the ground when placed against a wall. If the foot of the ladder is 2 m away from the wall, then the length of the ladder (in meters) is:						
	1. $\frac{4}{\sqrt{3}}$	2. $4\sqrt{3}$		3. $2\sqrt{2}$		4. 4	
120.	A pendulum of length $\sqrt{3}$ m is attached to point 2.3 m from the ground. It swings through an angle 30^o on each side of the vertical. The height above the ground at ends of its path is:						
	1. 0.9 m	2. 0,6 m		3. 0.7 m		4. 0.8 m	
121.	$\frac{\cot\theta}{\cot\theta-\cot 3\theta}+\frac{\tan\theta}{\tan\theta-\tan 3\theta}$ is equal to:						
	1. 0	2. 1		3. -1		4. 2	
122.	If the polynomial $f(x) = ax^3 + bx - c$ is divisible by the polynomial $g(x) = x^2 + bx + +c$ and $c \neq 0$, then ab =						
	1. 1	2. $\frac{1}{c}$		3. -1		4. $-\frac{1}{c}$	

123.	If A (2, 2), B (-4 , -4) and C (5 , - 8) are the vertices of a triangle , then the length of median through vertex C is: 1. $\sqrt{65}$ 2. $\sqrt{117}$ 3. $\sqrt{85}$ 4. $\sqrt{113}$
124.	If the sum of n terms of two A.P's are in the ratio (2n + 3) : (3n +2), then ratio of their m^{th} term is: 1. (4m -1) : (6m + 1) 2. (6m + 1) : (4m + 1) 3. (4m + 1) : (6m - 1) 4. (4m + 1) : (6m + 1)
125.	A mixture of 150 litres of milk and water contains 20 % water. The amount of water that must be added to dilute the mixture to 25 % water is: 1. 7 litres 2. 10 litres 3. 15 litres 4. 9 litres

…….. End of Section-II……..

Space for Rough Work

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