NMMS MODEL TEST 2 (SAT) – EM – (2023 – 24)
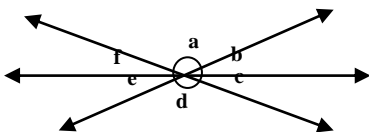
TOTAL MARKS: 90   **TIME : 90 MUNITES**

91. The value of $\dfrac{10^{22}+10^{20}}{10^{20}}$ is

   (1) 10   (2) 101   (3) 10^{22} (4) 10^{42}

92. If $\sqrt{1+\dfrac{x}{144}}=\dfrac{13}{12}$, then the value of x

   (1) 1   (2) 12   (3) 13   (4) 25

93. If a rectangle's length and breadth are both doubled by what percentage is the area of rectangle increases ?

   (1) 300%   (2) 200%   (3) 100%   (4) 50%

94. Choose the correct statements.

   (i). $x^0 \times x^0 = x^0 \div x^0$ [x is a non zero rational number]   (ii). $[10+10]^4 = 10^4 + 10^4$

   (iii). $3^0 = 1000^0$ (iv). $2^3 \times 3^2 = 6^5$

   (1) (i) and (ii)   (2) (iii) and (iv)   (3) (i) and (iv)   (4) (i) and (iii)

95. Which equation does not have the solution -1 ?

   (1) x+1=0   (2) 3x+4=1   (3) 5x+7=2   (4) x-1=2

96. The area of a circle of diameter d is

   (1) $\dfrac{\pi d^2}{4}$ (2) πd^2 (3) $\dfrac{\pi d^2}{2}$ (4) $2\pi d^2$

97. A sum of money triples itself in 8 years then the rate of interest (simple interest)

   (1) 20%   (2) 25%   (3) 30%   (4) 35%

98. One year ago Venthan was 8 times as old as his daughter. Now his age is equal to the square of his daughter's age. The present age of the daughter

   (1) 5   (2) 6   (3) 7   (4) 8

99. Choose the correct statements.

   (i) a + b = d + e

   (ii) a + c + e = 180^0

   (iii) b + f = c + e

1

(1) (i) and (ii)   (2) (i) and (iii)   (3) (ii) and (iii)   (4) (i), (ii) and (iii)

100. The following observation have been arranged in ascending order. If the median of the data is 1(3) Find the value of x.   3, 6, 7, 10, x, x+4, 19, 20, 25, 28
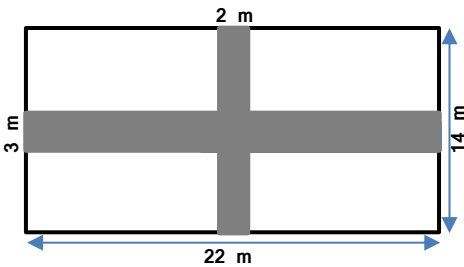
(1) 15   (2) 11   (3) 14   (4) 12

101. If each exterior angle of a triangle is 120^0, then the type of the triangle is

(1) Right angled triangle   (2) Isosceles triangle   (3) Scalene triangle   (4) Equilateral triangle

102. The single discount in % which is equivalent to two successive discounts of 20% and 25% is.

(1)40%   (2) 45%   (3) 5%   (4) 2(2)5%

103.

The area of the shaded part is

(1) 94 m^2 (2) 90 m^2

(3) 88 m^2 (4) 308 m^2

104.The coefficient of $5a^2$ in $-5a^3bc$ is

(1) -bc   (2) a^2bc (3) $-a^2bc$ (4) -abc

105. The solution of the inequation $-2 \leq x < 3$ is $(x \in w)$

(1) -1,0,1,2,3   (2) -2,-1,0,1,2   (3) 0,1,2,3   (4) 0,1,2

106. A quadrilateral having exactly 2 lines of symmetry and a rotational symmetry of order 2 is a

(1) Square   (2) Parallelogram   (3) Rhombus   (4) Kite

107. Which among the following statement is incorrect ?

. `(1) 0.008 is equalent to 8%.

(2) If selling price of an article is ₹540 and loss is ₹40, then it's cost price is ₹500.

(3) If selling price of an article is ₹50 and loss is 10%, then it's cost price is ₹60.

(4) 20% more than 30 is 36.

108. In a Isosceles trapezium PQRS, PQ ∥ RS and $\angle P=55^0$ the measure of $\angle R$ is

(1)55^0 (2)125^0 (3)65^0 (4)110^0

109. Which of the following measures represents the right angled triangle?

(1) 2, 3, 4   (2) 4, 5, 6   (3) 3, 4, 5   (4) 5, 6, 7

110. The point of concurrence of the three angle bisectors of a triangle is called _____.

   (1) Circumcentre (S)   (2) Orthocentre (H)   (3) Centroid (G)   (4) Incentre (I)

Science

111. Number of seconds in a Year is _____.

   (1) 3.153×10^{7} (2) 1.496×10^{11} (3) 9.46×10^{15} (4) 86400

112. 159.67^{0} F temperature is equal to _____ Rankine temperature.

   (1) 273.15   (2) 300   (3) 459.67   (4) -40

113. An example for Secondary Cell _____.

   (1) Volta Cell   (2) Daniel Cell   (3) Edison Cell   (4) Leclanche Cell

114. Frequency of visible light is _____.

   (1) 300 nm to 500 nm   (2) 20 nm to 20000 nm   (3) 650 nm to 975 nm   (4) 400 nm to 700 nm

115. The reason for formation of water droplets on the outer surface of a glass containing ice is _____.

   (1) Water droplets came out from the tiny openings of the glass.

   (2) The atmospheric water vapour condensed to form water droplets.

   (3) Atmospheric Hydrogen and Oxygen combine to form Water.

   (4) None of the above

116. The Specific heat Capacity of a metal is 160 JKg-1K-1. What heat energy is needed to increase the temperature of 500 g weight of that metal from 150^{0}C to 350^{0}C?

   (1) 16000000 J   (2) 16000 J   (3) 40000 J   (4) 12000 J

117. If a sound has a frequency of 50 Hz and wavelength of 10 meter, what is the velocity of the sound?

   (1) 5 m/s   (2) 500 m/s   (3) 60 m/s   (4) 1/5 m/s

118. **Match**

   (i)   Displacement   −   (a) Knot

   (ii) Speed of light in vacuum   −   (b) Geometric Centre

   (iii) Speed of a Ship   −   (c) meter

   (iv) Centre of gravity of regular shape   −   (d) Broad base

   (v)   Stable Equilibrium   −   (e) Uniform Velocity

   (1) (i) - b (ii) - c (iii) - d (iv) - e (v) - a   (2) (i) - c (ii) - e (iii) - a (iv) - b (v) - d

   (3) (i) - d (ii) - c (iii) - e (iv) - b (v) - a   (4) (i) - c (ii) - d (iii) - d (iv) - b (v) - a

119. Find out the correct match?

   (1) Absolute Zero   - 273 K

3

(2) Temperature during Big Bang   - 273.15 K

(3) Normal body temperature   - 310.15 K

(4) Lowest temperature recorded in Earth   - 148.75 K

120. Find out the incorrect pair?

(1) Chandrayan-1   - 2008

(2) Mangalyaan   - 2003

(3) Aryabhata   - 1975

(4) ISRO   - 1969

121. Find out the correct Statement / Statements.

(a) The nearest Star in the Solar System is Proxima Centari

(b) The rate of change of velocity is acceleration.

(c) In neutral equilibrium, the Centre of gravity is very low.

(d) Fuse has high electrical conductivity and high melting point

(1) a and b   (2) a and c   (3) c and d   (4) All are correct

122. Who is used the word Element first?

(1) Robert Boyle   (2) J.J.Thomson   (3) Rutherford   (4) John Dalton

123. When Magnesium ribbon is burnt and dissolves in water to give _____.

(1) Magnesium Oxide   (2) Magnesium Hydroxide   (3) Magnesium Carbonate   (4) Magnesium Chloride

124. Which is not an organic acid?

(1) Acetic acid   (2) Tartaric acid   (3) Hydrochloric acid   (4) Citric acid

125. Producer gas contains _____.

(1) Methane + Carbon Monoxide

(2) Butane + Propane

(3) Carbon dioxide + Nitrogen

(4) Carbon Monoxide + Nitrogen

126. **Match**:

(i) Antacid   –   (a) Penicillin

(ii) Antibiotic   –   (b) Aspirin

(iii) Analgesic   –   (c) $Mg(OH)_2$

(iv) Antipyretics   –   (d) Codeine Phosphate

(1) (i) - c (ii) - b (iii) - d (iv) - a   (2) (i) - c (ii) - a (iii) - d (iv) - b

(3) (i) - d (ii) - a (iii) - b (iv) - c   (4) (i) - c (ii) - b (iii) - a (iv) - d

127. Among the following which is correctly matched?

(1) Phenol	- C_6H_5	(2) Epsom	- $MgSO_4.7H_2O$
(3) Gypsum	- $CaSO_4.1/2\ H_2O$	(4) Plaster of Paris	- $CaSO_4.2H_2O$

128. Among the following which is wrongly matched?

   (1) Anthracite   –   High quality Coal

   (2) Coke   –   Used as reducing agent in metallurgy

   (3) Cetane Number   –   Petrol

   (4) Black Gold   –   Petroleum

129. Find out the wrong Statement / Statements

   (a) Litmus paper is prepared from Lichens.

   (b) In acidic solution, turmeric turns into Red.

   (c) Sulfuric salts of fatty acid are called as Soaps

   (d) Acid + Base → Salt + Water

   (1) a and b   (2) b and c   (3) a, b and c   (4) All of the above

130. Which is the polymeric form of amino acid?

   (1) Lignin   (2) Cellulose   (3) Chitin   (4) Protein

131. An example of Plant containing haustorial roots _____.

   (1) Avicinia   (2) Cuscutta   (3) Wanda   (4) Bryophyllum

132. Microbes which cause Measles is _____.

   (1) Varicella zoster   (2) Mycobacterium tuberculae

   (3) Salmonella Typhi   (4) Hepatitis

133. Plasmodesmata is _____.

   (1) Hole present in nuclear membrane

   (2) Hole present in Endoplasmic reticulum

   (3) Hole present in Cell membrane

   (4) Hole present in Golgi body

134. Find out the odd one out.

   (1) Lizard   (2) Frog   (3) Tortoise   (4) Garden Lizard

135. Botanical name of Neem tree _____.

   (1) *Oryza sativa*   (2) *Cocos nucifera*

   (3) *Allium sativum*   (4) *Azadirachta indica*

136. Silk farming is named as _____.

   (1) Horticulture   (2) Sericulture   (3) Epiculture   (4) Arboriculture

137. Amoeba and Protozoa belong to?

   (1) Ciliata   (2) Flagellate   (3) Pseudopodia   (4) Sporozoan

138. Which medicinal plant is used to improve liver health and to treat liver based diseases?

    (1) Kuppaimeni   (2) Thoothuvalai   (3) Aloe vera   (4) Kelanelli

139. When Glucose level is decreased in blood which hormone balance the level of glucose?

    (1) Insulin   (2) Glucagon   (3) Adrenalin   (4) Thyroxin

140. **Match**:

    (i) Epithellial cells   –   (a) Conduction of Commands

    (ii) Nerve cells   –   (b) Movement

    (iii) Muscle cells   –   (c) Transportation of Oxygen

    (iv) Red blood cells   –   (d) Protects the body by covering

    (1) (i) - b (ii) - c (iii) - d (iv) - a   (2) (i) - b (ii) - d (iii) - a (iv) - c

    (3) (i) - d (ii) - a (iii) - b (iv) - c   (4) (i) - c (ii) - b (iii) - d (iv) - a

141. Among the following which is correctly matched?

    (1) Runner   –   Eichhornia

    (2) Stolen   –   Grass

    (3) Sucker   –   Chrysanthemum

    (4) Offset   –   Centella

142. Find out the correct Statement / Statements

    (a) Carolus Linnaeus introduced Binomial nomenclature

    (b) ICN gives the formal botanical names to plants.

    (c) Augustin Pyramus de Candolle introduced the term Taxonomy

    (d) Bentham and Hooker Wrote Species Plandorum.

    (e) a and b   (2) b and c   (3) a, b and c   (4) All of the above

143. Find out the correct order.

    (1) Kingdom, Phylum, Class, Order, Family, Genus, Species

    (2) Phylum, Kingdom, Class, Family, Order, Genus, Species

    (3) Kingdom, Phylum, Family, Order, Class, Genus, Species

    (4) Kingdom, Order, Family, Class, Phylum, Genus, Species

144. Find out the correct order

    (1) Cell, Tissue, Atom, Molecule, Cell organelles, Organ, Organ system, Organism

    (2) Cell, Tissue, Organ, Organ system, Organism, Cell organelles, Molecule, Atom

    (3) Atom, Molecule, Cell, Tissue, Organ system, Organ, Cell organelles, Organism

    (4) Atom, Molecule, Cell organelles, Cell, Tissue, Organ, Organ system, Organism

145. Among the following which is incorrect?

    (1) Glucose   - Methane

    (2) Protein   - Amino acid

    (3) Fat   - Glycerol

    (4) Carbohydrate   - Glucose

Social Science

146. Where the "Industrial Revolution" took place?
    (1) Greenland   (2) England   (3) Holland   (4) Finland

147. Which is called "Precursor to the First Indian War of Independence"?
    (1) Indigo Mutiny   (2) Deccan Mutiny   (3) Vellore Mutiny   (4) Pabna Mutiny

148. Statement : The British did not like the farmers' struggle in Punjab
    Reason: There is no arable land in the province of Punjab.
    (1) The statement and the reason are correct   (2) The statement is correct; Reason is wrong
    (3) The statement is false; The reason is correct (4) The statement and Reason are wrong

149. Below are the kings and the regions they ruled. Choose the correct counterpart among them.
    (1) Poolithevan   -   Chiruvayal
    (2) Kattabomman   -   Panjalakurichi
    (3) Theeran Chinnamalai   -   Nerkattumcheval
    (4) Marudu Brothers   -   Odanilai

150. Arrange the following in chronological order.
    (1) Third Karnatic War   (2) Second Anglo-Maratha War
    (3) Fourth British - Mysore War   (4) First Battle of Tharain

    (1) 1, 2, 3, 4   (2) 1, 3, 2, 4   (3) 4, 3, 2, 1   (4) 4, 2, 3, 1

151. The year of establishment of Chennai University is _____.
    (1) 1857   (2) 1957   (3) 1757   (4) 1917

152. Select the correct statement / statements from the statements given below.:
    (i) It was the Portuguese who introduced railways and roads in India
    (ii) Bhulidevan was the first Indian king to oppose the British
    (iii) First Indian to crack the ICS exam held in India is Sathyanthranath Tagore
    (iv) Mamallapuram was a famous educational center in the 16th and 17th centuries
    (1) i. and ii   (2) ii. and iii   (3) iii. and iv   (4) ii. and iv

153. Match the following:
    (i) Delhi   –   (a) Rani Lakshmibai
    (ii) Kanpur   –   (b) Dandiya Dhope
    (iii) Jhansi   –   (c) Badusha II
    (iv) Gwalior   –   (d) Nanasakib
    (1) (i) – b   (ii) – c   (iii) – d (iv) - a   (2) (i) – d   (ii) – b   (iii) – c (iv) – a
    (3) (i) – c   (ii) – d   (iii) – b (iv) - a   (4) (i) – c   (ii) – d   (iii) – a (iv) – b

154. Which of the following animals featured prominently in the pillars of the temple constructions of the Vijayanagara kings?
    (1) Elephant   (2) Horse   (3) Cow   (4) Bull

155. Which of the following buildings was not built by the Mughal emperor Shah Jahan?
    (1) Taj Mahal   (2) Pearl Mosque   (3) Red Fort   (4) Qutub Minar

156. The land grants made by the Chola kings are given below Select the incorrect pair.
    (1) Temples   -   Educational institutions
    (2) Devadanam   -   Salaphokam

(3) Brahmins   -   Gurukula education

(4) Jain Religious Institutions   -   Palichandam

157. Select the false statement / statements from the statements given below.

(i)   The capital of the Cholas was Vanji

(ii) Pondicherry was the capital of the Pandyas

(iii) Uraiyur was the capital of the Cheras

(1) (i) and (ii)   (2) (ii) and (iii)   (3) (i) and (iii)   (4) All of the above

158. Place of functioning of the Chief Secretariat of Tamil Nadu is _____.

(1) Fort St. Louis   (2) Fort St. George   (3) St. David's Fort   (4) Fort St. Francis

159. Which of the following countries is not one of the countries with multi-party system of government?

(1) India   (2) France   (3) Norway   (4) Cuba

160. Select the false statement / statements from the statements given below.

(i)   Voting Age – 18

(ii) Minimum age for holding the office of Chief Minister – 25

(iii) Minimum age to hold the post of Governor – 30

(iv) Minimum age to hold office as a member of Legislative Council – 35

(1) (i) and (ii)   (2) (ii) and (iii)   (3) (iii) and (iv)   (4) (i) and (iv)

161. Which is called "Backbone of Democracy"?

(1) Election returns   (2) Media

(3) Political parties   (4) Members of Legislative Assembly

162.

The above traffic code is classified under which of the following categories?

(1) Mandatory Codes   (2) Warning codes

(3) Information Codes   (4) Common codes

163. Select the correct statement / statements from the statements given below.

(i)   Helmet should be worn while riding a two-wheeler

(ii) Seat belt must be worn while driving a four-wheeler

(iii) Do not talk on mobile phone while driving

(iv) Don't drink and drive

(1) (i) and (ii)   (2) (ii) and (iv)   (3) All of the above   (4) None of the above

164. Match the following:

(i)   White Color Plate   –   (a) President of the Republic

(ii) Yellow color plate   –   (b) Commercial vehicles

(iii) Blue plate   –   (c) Foreign delegations

(iv) Red color plate   –   (d) Ordinary citizens

(1) (i) – d   (ii) – b   (iii) – c   (iv) - d   (2) (i) – b   (ii) – d   (iii) – a   (iv) – c

(3) (i) – c   (ii) – d   (iii) – b   (iv) - a   (4) (i) – d   (ii) – c   (iii) – a   (iv) – b

165. Documents to be carried by driver at all times are _____.

(1) Driving license   (2) Vehicle Registration Certificate

(3) Certificate of Insurance   (4) All of the above

166. Inverted triangular shaped continent is _____.

(1) North America   (2) South America   (3) Asia   (4) Australia

167 First Indian to be elected Secretary of the UN General Assembly is _____.

(1) Mrs. Muthulakshmi Reddy   (2) Mrs. Vijayalakshmi Pandit

(3) Mrs. Kalpana Chawla   (4) Mrs. Savitribai Phule

168. Statement: The sun's rays do not fall uniformly on the earth's surface
   Reason: Earth is spherical in shape
   (1) The statement and reason are correct,   (2) The statement is correct but reason is false
   (3) The statement is false; The reason is correct   (4) Both are False

169. The waterfall known as "Niagara of India"is _____.
   (1) Athirapalli Falls   (2) Suruli Falls   (3) Thalaiyar Falls   (4) Cauvery Falls

170. . Find the wrong pair.
   (1) Air pressure   -   Aneroid parameter
   (2) Humidity   -   Hydrometer
   (3) Earthquake   -   Radar
   (4) Wind direction   -   Wind direction Indicator

171. Which of the following landslides is not one of the landslides caused by a river?
   (1) Horseshoe Lake   (2) Delta   (3) Lewis   (4) Pargana

172. Select the false statement / statements from the statements given below.
   (i) Human Rights Day is celebrated on 5th December every year.
   (ii) "The Wealth of Nations" was written by Adam Smith.
   (iii) Alluvial soils are more fertile than other soil types
   (iv) The Deccan Plateau in India was formed by volcanic eruptions
   (1) (i) Only   (2) (i) and (ii)   (3) (iii) Only   (4) All of the above

173. Find the correct counterpart
   (1) Isohyets   -   equal rainfall   (2) Isohel   -   equal barometric pressure
   (3) Isobar   -   equal heat   (4) Isoneph   -   Even illumination line

174. Match the following:
   (i) Metamorphic rocks   – (a) chemical rocks
   (ii) Salt flat rocks   – (b) Volcanic rocks
   (iii) Stratified rocks   – (c) basement rocks
   (iv) Bedrocks   – (d) Sedimentary rocks
   (1) (i) – d   (ii) – b   (iii) – c   (iv) - d   (2) (i) – b   (ii) – d   (iii) – a   (iv) – c
   (3) (i) – b   (ii) – a   (iii) – d   (iv) - c   (4) (i) – d   (ii) – c   (iii) – a   (iv) – b

175. The elements found in the core of one of the layers of the earth are _____.
   (1) Nickel   (2) Iron   (3) Both of the above   (4) None of the above

176. Select the correct statement / statements from the following statements.
   (i) The temperature increases by 6.5^0C for every 1000 meters of altitude.
   (ii) The temperature increases by 1^0C for every 32 meters you go down from the Earth's surface.
   (iii) Temperature decreases by 6.5^0C for every 1000 meters of altitude
   (iv) The temperature drops by 1^0C for every 32 meters you go down from the Earth's surface
   (1) (i) and (ii)   (2) (ii) and (iii)   (3) (i) and (iii)   (4) (i) and (iv)

177. Meaning of the Sanskrit word "Rupee" is _____.
   (1) Money   (2) Gold coin   (3) Silver coin   (4) Copper coin

178. Which year is Niti Aayog commenced its operations _____.
   (1) January 1, 2012   (2) January 1, 2013   (3) January 1, 2014   (4) January 1, 2015

179. Government of India collects money as Goods and Services Tax (GST) is _____.
   (1) 18%   (2) 17%   (3) 16%   (4) 15%

180. Year of introduction of "Modern National Education Policy" is _____.
   (1) 1968   (2) 1986   (3) 1992   (4) 2002