PART - II: SCHOLASTIC APTITUDE TEST
(For Students of Class VIII)

Time: 90 Minutes  Max. Marks: 90

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you open the Question Booklet.

1. Answers are to be given on the same OMR Answer Sheet provided for Part – I.

2. There are 90 questions in this test. All are compulsory.

3. The question numbers 91 to 110 belong to Mathematics, 111 to 145 pertain to Science and 146 to 180 are on Social Science subjects.

4. Choose the correct answer from the options given for each question and darken the corresponding circle with black ball point pen in the OMR Answer Sheet.

5. Since the time allotted for this Question Paper is very limited you should make the best use of it by not spending too much time on any one question.

6. If you do not know the answer to any question, do not waste time on it and pass on to the next one. If time permits, you can come back to the questions, which you have left in the first instance and attempt them.

7. Rough work can be done anywhere in the Question Booklet but not in the OMR Sheet / loose paper.

8. Each correct answer will be awarded One Mark.

9. Please return the OMR Answer Sheet only to the invigilator after the test. You can retain the Question Booklets.

10. English version of the Question Paper will be considered as final in case of any dispute arising out of variation in translated version.

11. Quote your seven digit Roll Number without fail for any future correspondence.

PLEASE TURN OVER THE PAGE AND START ANSWERING.
91. The simplified value of \( \left( \frac{a^{11}}{a^{13}} \right)^{\frac{1}{143}} \times \left( \frac{a^{13}}{a^7} \right)^{\frac{1}{91}} \times \left( \frac{a^7}{a^{11}} \right)^{\frac{1}{77}} \) is ……

(1) 1  (2) -1  (3) a  (4) \( \frac{1}{a} \)

92. Which of the following rational number lies between \( \frac{3}{4} \) and \( \frac{4}{5} \) ?

(1) \( \frac{29}{40} \)  (2) \( \frac{31}{40} \)  (3) \( \frac{33}{40} \)  (4) \( \frac{27}{20} \)

93. The value of \( \sqrt[4]{\frac{729}{561}} - \sqrt[4]{\frac{729}{564}} \) is ……

(1) 0  (2) 1  (3) 2  (4) not defined

94. The angle of rotation for an equilateral triangle is ……

(1) 60°  (2) 90°  (3) 120°  (4) 180°

95. Which of the following measurements are not the sides of a triangle?

(1) 8 cm, 9 cm, 10 cm  (2) 4 cm, 5 cm, 6 cm  (3) 3 cm, 4 cm, 5 cm  (4) 1 cm, 2 cm, 3 cm
96. The nature of the coordinates of the points that lie on the third quadrant is:
   (1) \( x > 0, y > 0 \)  (2) \( x > 0, y < 0 \)
   (3) \( x < 0, y > 0 \)  (4) \( x < 0, y < 0 \)

97. If \( a = 3 \) and \( b = 2 \), then the value of \( a^b - b^a \) is .......
   (1) 0  (2) 1  (3) 5  (4) 6

98. If the sum of three consecutive odd integers is 75, then the smallest number among the three is .......
   (1) 21  (2) 23  (3) 25  (4) 27

99. If the area of a rhombus is 50 \( m^2 \), then the product of their diagonals is .......
   (1) 25  (2) 50  (3) 100  (4) 200

100. A road can be repaired in 16 hours by 45 workers. How many workers are to be dropped if the work is extended for 8 more hours?
    (1) 15  (2) 30  (3) 20  (4) 25

101. Which of the following is an irrational number?
    (1) 0  (2) \( \pi \)  (3) \( \frac{22}{7} \)  (4) 3.14
102. \( \frac{1}{0.2} \) is equal to .......

(1) \( \frac{1}{2} \)  
(2) 0.2  
(3) 5  
(4) 2

103. A bag contains 50 paise coins, 25 paise coins and 10 paise coins in the ratio 5 : 9 : 4 respectively. The value of the total coins is Rs.309. Find the number of 50 paise coins.

(1) 300  
(2) 450  
(3) 240  
(4) 250

104. Which one of the following is the smallest value?

(1) 7/8  
(2) 15%  
(3) 1%  
(4) 0.75

105. If the area of a semicircle is 308 cm\(^2\), then the perimeter of the circle is .......

(1) 156 cm  
(2) 88 cm  
(3) 44 cm  
(4) 72 cm

106. The average of even prime numbers is .......

(1) 2  
(2) 4  
(3) 6  
(4) 0
107. If the hypotenuse of an Isosceles Right Triangle is 10\sqrt{2} cm, then the area is ........

(1) 100 cm² (2) 50 cm² (3) 25 cm² (4) 200 cm²

108. Which one of the following is not a polynomial?

(1) $x^2 + 7x - 5$
(2) $\frac{x}{x}$
(3) $\sqrt{3}x^2 + 7x + \sqrt{2}$
(4) $\frac{7}{2}x^3 + \frac{6}{7}x^2 - \frac{5}{3}$

109. If $a + b = 8$ and $a - b = 7$, then $a^2 + b^2 = ?$

(1) 56 (2) 65 (3) $65\frac{1}{2}$ (4) $56\frac{1}{2}$

110. If $2 \times 2 \times 2 \times 2 \times \ldots \ldots \times n$ (1024 terms) = 1024, then $n =$?

(1) 8 (2) 9 (3) 10 (4) 11
111. A bus travels 54 km in 90 minutes. The speed of the bus is:

(1) 0.6 m/s
(2) 10 m/s
(3) 5.4 m/s
(4) 3.6 m/s

112. The following figure shows an oscillating pendulum.

[Diagram of pendulum with points A, C, O, and B]

Time taken by the bob to move from A to C is $t_1$ and from C to O is $t_2$. The time period of this simple pendulum is:

(1) $t_1 + t_2$
(2) $2(t_1 + t_2)$
(3) $3(t_1 + t_2)$
(4) $4(t_1 + t_2)$

113. One litre of water at 30°C is mixed with one litre of water at 50°C. The temperature of the mixture will be:

(1) 80°C
(2) more than 50°C but less than 80°C
(3) 20°C
(4) between 30°C and 50°C

113. $30^\circ C \rightarrow A \rightarrow C \rightarrow B \rightarrow O \rightarrow C$ – pendulum

A, O, B and C are points on a rod.

The time taken by the bob to move from A to C is $t_1$ and from C to O is $t_2$. The period of this pendulum is:

(1) $t_1 + t_2$
(2) $2(t_1 + t_2)$
(3) $3(t_1 + t_2)$
(4) $4(t_1 + t_2)$

113. $30^\circ C \rightarrow A \rightarrow C \rightarrow B \rightarrow O \rightarrow C$ – pendulum

The temperature of the mixture will be:

(1) 80°C
(2) more than 50°C but less than 80°C
(3) 20°C
(4) between 30°C and 50°C

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114. Among the following smallest temperature is:
(1) 1 K
(2) 1°C
(3) 1°F
(4) all are equal

115. Three bulbs A, B, C and battery are connected in series with a switch and forms an electric circuit. When the switch is ‘ON’:
(1) bulb C will glow first.
(2) bulb B and C will glow simultaneously and bulb A will glow after some time.
(3) all the bulbs A, B and C will glow at the same time.
(4) the bulbs will glow in the order A, B and C.

116. A person at a distance of 1 m in front of a plane mirror seems to be _______ from his image.
(1) 0.5 m
(2) 1 m
(3) 2 m
(4) 4 m

117. Which of the following can be used to form a real image?
(1) Concave mirror only
(2) Plane mirror only
(3) Convex mirror only
(4) Both Concave and Convex mirrors.
118. An electric current can produce:

1. heating effect only.
2. chemical effect only.
3. magnetic effect only.
4. chemical, heating and magnetic effects.

119. Which one of the following solutions will not conduct electricity?

1. lemon juice
2. tap water
3. vinegar
4. vegetable oil

120. When two charged objects are brought close to each other,

1. they may attract
2. they may repel
3. they may attract or repel depending on the type of charges they carry.
4. there will be no effect.

121. 1 cent = ______ sq. ft.

1. 100
2. 2400
3. 30.48
4. 435.60

122. Which among the following is not a mineral acid?

1. HCl
2. CH₃COOH
3. HNO₃
4. H₂SO₄
123. The increasing order of forces of attraction between the molecules - Water, Oxygen, Sugar are given below. Choose the correct order.

(1) Oxygen < Sugar < Water
(2) Sugar < Water < Oxygen
(3) Water < Sugar < Oxygen
(4) Oxygen < Water < Sugar

124. The ratio of Hydrogen and Oxygen in water by mass is:

(1) 2 : 8
(2) 1 : 8
(3) 2 : 1
(4) 1 : 16

125. ‘X’ is a mixture of iron filings and Sulphur and ‘Y’ is the product obtained by heating the mixture ‘X’. On bringing a magnet over both ‘X’ and ‘Y’ we observe that:

(1) ‘X’ and ‘Y’ both are attracted.
(2) ‘X’ is attracted while ‘Y’ is not
(3) ‘Y’ is attracted while ‘X’ is not
(4) Both ‘X’ and ‘Y’ are not attracted

126. Milk of Magnesia is used in:

(1) Fertilizer industry
(2) Textile Industry
(3) Water purification Plant
(4) Pharmaceutical industry
127. The chemical formula of rust is:

(1) FeO  
(2) Fe₂O₃  
(3) FeS₂  
(4) Fe₃O₄

128. The modern atomic theory was proposed by:

(1) J.J. Thomson  
(2) John Dalton  
(3) Rutherford  
(4) James Chadwick

129. The molecular formula of Glucose is:

(1) C₅H₁₂O₆  
(2) C₁₂H₂₂O₁₁  
(3) (C₆H₁₀O₅)ₙ  
(4) C₄H₁₀

130. The acid present in Red Ant is:

(1) Formic acid  
(2) Acetic acid  
(3) Carbonic acid  
(4) Oxalic acid

131. Calamine is:

(1) Calcium Carbonate  
(2) Magnesium Carbonate  
(3) Sodium Carbonate  
(4) Zinc Carbonate

132. 1 Å is:

(1) 10⁻⁹ m  
(2) 10⁻¹² m  
(3) 10⁻¹⁰ m  
(4) 10⁻⁶ m
133. Match the following:

(a) Rice  
(i) Solanum tuberosum
(b) Mango  
(ii) Oryza sativa
(c) Tomato  
(iii) Mangifera indica
(d) Potato  
(iv) Lycopersicon esculentum

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

134. Environment Act was passed in the year:

(1) 1956  
(2) 1966
(3) 1976  
(4) 1986

135. The study of virus is called virology. The study of Algae is called:

(1) Psychology
(2) Phycology
(3) Mycology
(4) Algalogy

136. Who discovered the Penicillin?

(1) Hippocrates
(2) Alexander Flemming
(3) Edward Jenner
(4) Carolus Linnaeus
137. The trade name of bio-degradable plastic material is:
1. Poly hydroxy butyrate
2. Alcaligens
3. Polyvinyl Chloride
4. Plastic

138. Which tree yields fruits for many years?
1. Guava
2. Mango
3. Orange
4. Apple

139. _______ cures mouth ulcer.
1. Tulsi
2. Gooseberry
3. Veldt grape
4. Turmeric

140. Pneumatic bones are found in:
1. Reptiles
2. Amphibians
3. Birds
4. Human beings

141. Air contains _______ of Oxygen.
1. 78%
2. 20.9%
3. 0.03%
4. 71%

142. Suicidal bags of the cell organelles are:
1. Ribosomes
2. Mitochondria
3. Nucleus
4. Lysosomes
143. A child receives hereditary characters from:

1. Mother only
2. Father only
3. Both Mother and Father
4. None of these

144. Match the following:

(a) Long bone (i) 12
(b) Short bone (ii) 4
(c) Flat bone (iii) 7
(d) Irregular bone (iv) 5

1. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
2. (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)
3. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
4. (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)

145. The Endocrine part of Pancreas is Islets of Langerhans, it has Alpha and Beta cells. Alpha cells secrete Glucagon, Beta cell secrete:

1. Thyroxine
2. Glucose
3. Insulin
4. Adrenaline
146. “துருக்கவானியம் தெறை” என்று அழைக்கப்படும் பொருள் என்ன ?
(1) அமரிசு ராணி
(2) அமரிசு காங்கர்
(3) விஜய-சோம் காங்கர்
(4) கிருபா-சக்தி

146. _______ is called as “Parrot of India”.
(1) Alberuni
(2) Amir Khusru
(3) Zia-Ul-Barani
(4) Khizr-Khan

147. தேங்கோயம் சுபத்திக்கிய விளம்பர்கள் என்று குறிப்பிட்டது ?
(1) ராமேசர் காங்கர்
(2) ராஜா ராஜா சோலன்
(3) ராஜா ராமகுளன்
(4) ஆதியா சோலன்

147. The town Thanjavur was built by :
(1) Raja Raja Cholan
(2) Rajendra Cholan
(3) Vijayalaya Cholan
(4) Adithya Cholan

148. ‘சுருக்கவானியம்’ என்று அழைக்கப்படும் பொருள் என்ன ?
(1) சூருக்கவானியம்-சோம் காங்கர்
(2) சூருக்கவானியம் அமரிசு
(3) பார்த் காங்கர்
(4) பானள் சக்தி

148. _______ was called as ‘Quadir-Wali’.
(1) Qwajamoin-ud-din-Shisti
(2) Nizam-ud-din Awlia
(3) Nagoor Aandavar
(4) Baba Fareed

149. காஜிராஹோ கோயில்கள் என்று குறிப்பிட்டது ?

149. The Khajuraho temples were built by _______.
(1) The Palas
(2) The Chandellas
(3) The,Prathiharas
(4) The Chalukyas

150. இலங்கா பார்மபாக கீழை பகுதியைப் படுத்தும் நாள் ?
(1) ஜனவரி 10
(2) ஜனவரி 15
(3) ஜனவரி 18
(4) ஜனவரி 25

150. World Heritage Day is celebrated on :
(1) 10th January
(2) 15th April
(3) 18th April
(4) 25th April
151. Pick the odd man out.
(1) The Brahadeeswara Temple
(2) The Gangai Konda Choliswaram Temple
(3) The Arivateswara Temple
(4) The Thirubuvaneswara Temple

152. Match the following:

<table>
<thead>
<tr>
<th>Rajput Clans</th>
<th>Kingdoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) The Pratiharas</td>
<td>(i) Bundelkhand</td>
</tr>
<tr>
<td>(b) The Chauhans</td>
<td>(ii) Kannaaj</td>
</tr>
<tr>
<td>(c) The Rathors</td>
<td>(iii) Delhi</td>
</tr>
<tr>
<td>(d) The Chandellas</td>
<td>(iv) Avanti</td>
</tr>
</tbody>
</table>

153. Arrange the following Mughal Emperors in the chronological order.
(a) Akbar
(b) Humayun
(c) Jahangir
(d) Babur

154. His invasion rang the death knell to the Mughal Rule in India.
(1) Ahmad Shah Abdali
(2) Nadir Shah
(3) Bahadur Shah
(4) Sher Shah
155. The Cornwallis Code was compiled by:

1. Sir Thomas Roe
2. Sir George Barlow
3. Sir Lawrance Roy
4. Sir John Shore

156. The first king to establish a Welfare State in India was:

1. Bimbisara
2. Kanishka
3. Akbar
4. Ashoka

157. The postal stamp of Chandragupta Maurya, the greatest Mauryan king was released in the year:

1. 2001
2. 2002
3. 2005
4. 2004

158. Madras Presidency was renamed as "Tamil Nadu" in the year:

1. 1966
2. 1967
3. 1956
4. 1969

159. Father of Modern Civil Services:

1. Warren Hastings
2. Lord Dalhousie
3. Lord Cornwallis
4. Lord Ripon
160. A Cartographer is a person who:
   (1) makes carts
   (2) makes chariots
   (3) makes maps
   (4) makes cars

161. The Indian Standard Time is calculated from a clock tower located in:
   (1) Kolkata
   (2) Bhopal
   (3) Mirzapur
   (4) New Delhi

162. Waterfalls of greater dimensions are known as:
   (1) rapids
   (2) cataracts
   (3) downstreams
   (4) channels

163. These industries are located near the fields of:
   (1) Sugar Industries
   (2) Cotton Textile Industries
   (3) Jute Industries
   (4) Flour Industries

164. The upper mantle of the earth’s crust is called ........
   (1) Sial
   (2) Sima
   (3) Barrysphere
   (4) Asthenosphere
165. The thin layer that lies between the troposphere and the stratosphere is called:
(1) Ionosphere
(2) Exosphere
(3) Atmosphere
(4) Tropopause

166. The study of the lower layer of the atmosphere is called:
(1) Weather forecasting
(2) Meteorology
(3) Astronomy
(4) Astrology

167. The shape of Pacific Ocean is:
(1) Rectangle
(2) Triangle
(3) Long S
(4) Square

168. The symbol for expressing saltiness in the sea water:
(1) $0^0/0^0$
(2) $10^0/00$
(3) $0^0/00$
(4) $00^0/10$

169. Pick the odd man out.
(1) Mediterranean Sea
(2) Caspian Sea
(3) Aral Sea
(4) Dead Sea

170. The first scientist who drew the latitudes and the longitudes on the world map is:
(1) Kepler
(2) Ptolemy
(3) Bhaskar
(4) Varagamithrath
171. Match the following:

(a) Comet (i) galaxy
(b) Meteoroids (ii) found between Mars and Jupiter
(c) Milky way (iii) rock made of dust and ice
(d) Asteroids (iv) sudden streaks of light

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

172. In India there are equal days and nights on:

(1) March 23rd and September 12th
(2) March 23rd and September 21st
(3) March 21st and September 23rd
(4) March 12th and September 23rd

173. Choose the correct order in terms of area:

(1) Indian Ocean – Arctic Ocean – Atlantic Ocean – Pacific Ocean
(2) Atlantic Ocean – Arctic Ocean – Indian Ocean – Pacific Ocean
(3) Arctic Ocean – Indian Ocean – Atlantic Ocean – Pacific Ocean
(4) Indian Ocean – Arctic Ocean – Pacific Ocean – Atlantic Ocean
174. State which of the following statements are true.

(a) The tributaries of Cauvery are Kabini and Noyyal.
(b) River Krishna drains into Arabian Sea.

(1) (a) is true but (b) is false
(2) (a) is false but (b) is true
(3) both are true
(4) both are false

175. Choose the incorrect pair from the following:

(1) Planetary winds – Polar winds
(2) Seasonal winds – Sea breeze
(3) Variable winds – Cyclone
(4) Periodic winds – Westerlies

176. The Central and the State Governments derive their authority from:

(1) The Legislative Assembly
(2) The Parliament
(3) The people
(4) The political parties

177. The backbone of democracy is:

(1) The Central Government
(2) The State Government
(3) Political Parties
(4) The Election Commission
178. The present (2017) Chief Justice of High Court of Madras is:

(1) Justice Indra Banerjee
(2) Justice Sanjai Kishan Kaul
(3) Justice Satish K Agnihotri
(4) Justice Deepak Mishra

179. The Chairperson of the Corporation is:

(1) Commissioner
(2) Mayor
(3) Councillor
(4) Secretary

180. An Indian Economist who received Nobel Prize for Economics:

(1) Kailash Satyarthi
(2) Amartya Sen
(3) Har Gobind Khorana
(4) Dr. Chandra Sekar
FOR ROUGH USE (Not for evaluation)
FOR ROUGH USE (Not for evaluation)