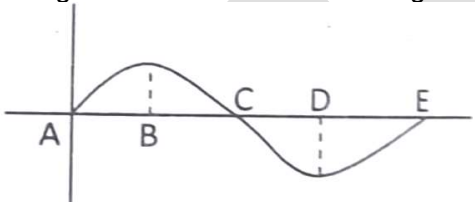
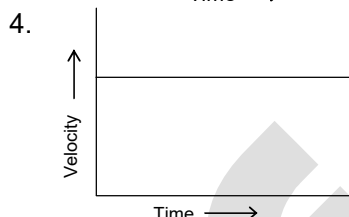
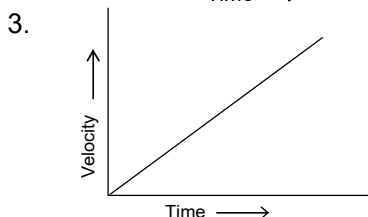
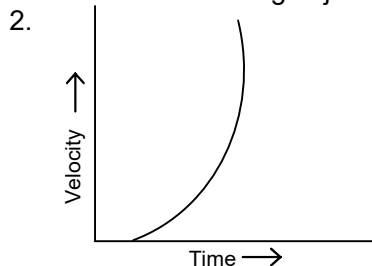
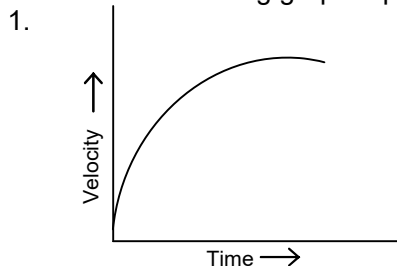


FIITJEE

MUKHYAMANTRI VIGYAN PRATIBHA PARIKSHA PART – II SCHOLASTIC APTITUDE TEST (SAT) Held on: February 27, 2022 QUESTION PAPER

101. Maximum weight of a body is:
1. At the center of Earth
2. On the surface of Earth
3. Above the surface of the Earth
4. A point between center of Earth and surface of Earth
102. Two sphere of the same diameter one of mass 5 kg and the other of 1 kg are dropped at the same time from the top of a tower when they are one meter above the ground both the sphere will have same.
1. Kinetic energy
2. Potential energy
3. Momentum
4. Acceleration
103. A body floating in water with its one fourth volume above the surface of water. If density of water is 1000 kg/m^3 then the density of the body is:
1. 250 kg/m^3
2. 750 kg/m^3
3. 1000 kg/m^3
4. 1250 kg/m^3
104. In the given curve half the wave length is:

1. AB
2. AD
3. BD
4. AE
105. Potential energy of a certain spring when stretched through a distance 's' is 10 Joules. The amount of work (in Joules) that must be done on this spring to stretch it through an additional distance 's' will be:
1. 30
2. 40
3. 10
4. 20
106. Kinetic Energy of a body is made one fourth of its initial value, then linear momentum of the body now becomes
1. Double
2. Half
3. One fourth
4. Four time
107. A wave has a frequency of 4 kHz and wave length 50 cm. How much distance it will travel in 4 seconds?
1. 8 km
2. 80 km
3. 800 m
4. 8 m

108. Which of the following graph represents uniform motion of a moving object correctly?



109. A car which is moving with speed u is stopped at a distance 's'. If the speed becomes nu at which distance it can be stopped if retarding acceleration is same in both cases.

1. s/u
2. ns
3. s/n^2
4. n^2/s

110. A body moves with a uniform acceleration when force applied on the body is:

1. Changing
2. Constant
3. Reducing
4. Increasing

111. A body can move with constant speed on a rough horizontal surface with frictional force F by applying a force of;

1. greater than F
2. less than F
3. equal to F
4. no force required for constant speed

112. A car is traveling at 30 m/sec along a road. A child runs out into the road 100 m ahead of car. The car driver steps on the break pedal. What must the car deceleration be, if the car is to stop just before it reaches the child.

1. 2.5 m/sec^2
2. 3.5 m/sec^2
3. 4.5 m/sec^2
4. 5.5 m/sec^2

113. If a wave complete 24 cycles in 0.8 seconds then frequency of the wave is:

1. 30 Hz
2. 8 Hz
3. 24 Hz
4. 12 Hz

114. If Atomic number $Z = 18$, for an element what would be the valency of the element?

1. 5
2. 8
3. 2
4. 0

115. Number of neutrons in tritium would be?

1. 3
2. 1
3. 0
4. 2

116. Identify the element which have equal number of electrons in its first and second orbit.

1. B
2. Be
3. Ba
4. Mg

117. Identify the correct chemical formula of iron (II) sulphate.

1. FeSO_4
2. Fe_2SO_4
3. $\text{Fe}_2(\text{SO}_4)_3$
4. $\text{Fe}(\text{SO}_4)_2$

118. 20 g of hydrogen gas have same number of hydrogen atoms as present in which of the following?
1. 180 g water
 2. 90 g water
 3. 18 g water
 4. 360 g water

119. Brass is an alloy. It is a mixture of which of these?
1. Iron, zinc and copper
 2. Only zinc and copper
 3. Copper and Tin
 4. Iron, carbon and copper

120. Identify the correct match:-

	Element		Atomicity
a)	Sulphur	i)	Tetra-atomic
b)	Chlorine	ii)	Diatomic
c)	Phosphorus	iii)	Mono atomic
d)	Oxygen	iv)	Poly-atomic

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

121. A colloid in which both dispersed phase and dispersing medium are liquid would be called:-
1. Aerosol
 2. Sol
 3. Gel
 4. Emulsion

122. Pumice is an example of which of the following?
1. Aerosol
 2. Solid sol
 3. Sol
 4. Gel

123. Which of them is a colourless gas with the smell of rotten eggs?
1. SO₂
 2. NO₂
 3. H₂
 4. H₂S

124. Which of these methods would be most suitable for separating a mixture of anthracene and common salt?
1. Sublimation
 2. Chromatography
 3. Evaporation
 4. Fractional distillation

125. Out of these, identify the names of states of matter:-
Solid, Plasma, Gas, Bose – Einstein condensate
1. Solid and gas
 2. Solid, Plasma and gas
 3. Solid, Plasma, Bose – Einstein condensate and gas
 4. Solid, Bose – Einstein condensate and gas

126. Increase in which of them cause a decrease in the rate of evaporation?
1. Surface area
 2. Temperature
 3. Humidity
 4. Wind speed

127. Hybrid in plants mean
1. Cross between two species
 2. Cross between two varieties
 3. Cross between two genera
 4. All of the above

128. Water resistant and waxy layer present on epidermis of cactus is called _____ and its function is to _____.
1. Guard layer, prevent water to enter inside
 2. Cuticle, prevent lost of water
 3. Stratum corneum, prevent loss of water

4. Hyperdermis. Prevent loss of water
129. Storage of enzymes for the digestion of cellular components like carbohydrates, proteins etc. is carried out by _____
- | | |
|-----------------|--------------|
| 1. Mitochondria | 2. Lysosomes |
| 3. Centrioles | 4. Ribosomes |
130. Which is not a feature of Annelid
- | | |
|---------------------------|--------------|
| 1. Metameric segmentation | 2. Nephridia |
| 3. Pseudocoelom | 4. Clitellum |
131. The type of tissue found in petiole is _____ and it provides _____.
- | | |
|--------------------------|-------------------------|
| 1. Sclerenchyma, support | 2. Collenchyma, support |
| 3. Sclerenchyma, storage | 4. Collenchyma, storage |
132. While doing practical you observed curd sample under microscope, which shape do you expect that of curd bacteria?
- | | |
|-----------------|------------------|
| 1. Round shaped | 2. Rod shaped |
| 3. Comma shaped | 4. Spiral shaped |
133. One of the following originates from secondary meristem in dicots.
- | | |
|--------------------|-----------------|
| 1. Husk of coconut | 2. Root tip |
| 3. Cork | 4. Chlorenchyma |
134. Which of the following has maximum production and is easy to handle as they sting less?
- | | |
|-----------------------|-------------------|
| 1. Apis dorsata | 2. Apis mellifera |
| 3. Apis cerina indica | 4. Apis florae |
135. Plant cell and bacterial cell have some of common features, these are:
- | |
|---|
| 1. Mitochondria, ribosomes, plasma membrane |
| 2. Plasma membrane, ribosomes, chromosomes |
| 3. Endoplasmic reticulum, ribosomes, chloroplast |
| 4. Endoplasmic reticulum, chloroplast and cytoplasm |
136. Which of the following is not considered in five 'F's?
- | | |
|-------------------------------------|---|
| 1. Treat sewage and proper drainage | 2. Eating fruits directly from the cart |
| 3. Washing hands after defecation | 4. Cover the food |
137. Oxygen enters the cell by the process of diffusion when the concentration of O₂ inside the cell
- | | |
|-------------|---------------------------------|
| 1. Increase | 2. First decrease then increase |
| 3. Decrease | 4. First increase then decrease |
138. Crop rotation is carried out for
- | | |
|---------------------------------|---------------------------------|
| 1. Increasing acidity of soil | 2. Decreasing fertility of soil |
| 3. Increasing fertility of soil | 4. All of the above |
139. The five kingdom classification system of organisms was proposed by
- | | |
|---------------------|--------------------|
| 1. Whittaker (1969) | 2. Linnaeus (1758) |
| 3. Copeland (1966) | 4. Haeckel (1866) |
140. 'Polio' is caused by
- | | |
|-----------------------------------|-----------------------------------|
| 1. A bacteriophage | 2. A virus with single strand RNA |
| 3. A virus with single strand DNA | 4. A virus with double strand DNA |

141. If $M = 5 + 5^{\frac{1}{3}} + 5^{\frac{2}{3}}$, then the value of $M^3 - 15M^2 + 60M - 40$ is
1. 50
 2. 40
 3. -50
 4. -10

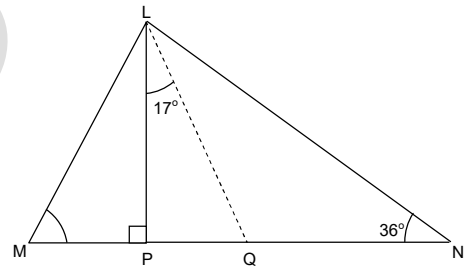
142. If $pqr = 1$, then the value of $\frac{1}{1+p+q^{-1}} + \frac{1}{1+q+r^{-1}} + \frac{1}{1+r+p^{-1}}$ is
1. 0
 2. 1
 3. -1
 4. $1+p+q+r$

143. If $A = \frac{1}{3-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2}$ then the value of $\frac{1}{A}$ is:
1. 1
 2. 5
 3. $\frac{1}{13}$
 4. $\frac{1}{5}$

144. If the sum of two numbers is 10 and sum of their cubes is 370, then sum of their squares is
1. 58
 2. 100
 3. 29
 4. 180

145. Ritika wants to type the first 160 natural numbers. The number of times she has to press the numbered keys is
1. 372
 2. 370
 3. 374
 4. 368

146. In the given figure, LQ is the bisector of $\angle L$ and $LP \perp MN$. If $\angle PLQ = 17^\circ$ and $\angle N = 36^\circ$ then $\angle M$ is
1. 72°
 2. 70°
 3. 53°
 4. 34°



147. From a pack of 52 cards, a red Jack, a black King and two black queens are removed. A card was drawn at random from the remaining pack of cards. The probability that the card is a king
1. $\frac{1}{52}$
 2. $\frac{1}{48}$
 3. $\frac{3}{48}$
 4. $\frac{3}{52}$

148. If $M = \sqrt{22 + \sqrt{5 + \sqrt{13 + \sqrt{9}}}}$ and $N = \sqrt{7 + \sqrt{1 + \sqrt{5 + \sqrt{16}}}}$ then the value of $M^3 - 3M^2N + 3MN^2 - N^3$ is
1. 0
 2. 1
 3. 8
 4. 64

149. If $a = b^{3x}$, $b = c^{3y}$ and $c = a^{3z}$ then the value of xyz is
1. 9
 2. $\frac{1}{9}$

3. 27
4. $\frac{1}{27}$
150. A conical tent is 12m high and radius of its base is 5m. If the cost of canvas is Rs. 28 per sq. m., then the total cost of canvas required to make the tent is
 1. Rs. 11440
 2. Rs. 28600
 3. Rs. 5720
 4. Rs. 2860
151. The value of $0.\overline{3} + 0.8\overline{3}$ is
 1. $0.8\overline{6}$
 2. $1.1\overline{3}$
 3. $1.1\overline{3}$
 4. $1.1\overline{6}$
152. If $p + \frac{1}{p} = 5$, then the value of $(p^4 + 3p^3 + 5p^2 + 3p + 1) \div (p^4 + 1)$ is
 1. $\frac{41}{23}$
 2. $\frac{43}{23}$
 3. $\frac{45}{21}$
 4. $\frac{47}{21}$
153. The numbers 3, 6, 7, 10, x, 15, 19, 20, 25, 28 are arranged in ascending order and their median is 13, then their mean is
 1. 14.4
 2. 14.6
 3. 15.4
 4. 16.4
154. If $1^3 + 2^3 + \dots + 9^3 = 2025$ then the value of $(0.11)^3 + (0.22)^3 + \dots + (0.99)^3$ is close to
 1. 0.2695
 2. 0.3695
 3. 2.695
 4. 3.695
155. If $\frac{x+1}{x+2} = 0$, then the value of $x^{33} + x^{32} + x^{13} + x^{12} + x + 1$ is
 1. 0
 2. 1
 3. -1
 4. 2
156. A swimming pool is 12m long and 9m wide. Its depth is uniformly increase from 1 m on shallow side to 4m on the deeper side. Its volume is
 1. 309 m^3
 2. 270 m^3
 3. 360 m^3
 4. 607 m^3
157. The ratio of areas of the incircle and circumcircle of a square is
 1. 2 : 3
 2. 1 : 2
 3. 3 : 2
 4. 2 : 1
158. The bisectors of two adjacent angles A and B of a quadrilateral ABCD intersect at a point 'O' such that $\angle C + \angle D = K(\angle AOB)$, then the value of K is
 1. 1
 2. $\frac{1}{2}$
 3. 2
 4. $\frac{3}{2}$
159. If $3a = 4b = 6c$ and $a + b + c = 27\sqrt{29}$ then the value of $\sqrt{a^2 + b^2 + c^2}$ is
 1. 47
 2. 97

3. 67
4. 87
160. If $x = \sqrt{3 + \sqrt{5}}$ then the value of $x^4 - 6x^2 + 4$ is
1. 1
2. $\sqrt{5}$
3. $3\sqrt{5}$
4. 0
161. Which of the following was not the part of Russian Empire?
1. Latvia
2. Finland
3. Hungry
4. Lithuanai
162. What was Dawes Plan?
1. A plan which imposed more fines on Germany
2. A plant which revoked the terms of reparation to ease financial burden on the Germany
3. A plan which withdrew all punishment form Germany
4. None of the above
163. Which of the following was not matched?
1. The "reds" : Bolshevik
2. The "greens" : Socialist Revolutionary
3. The "white" : Anti Tsar
4. The "minorities" : Mensevik
164. Who wrote the book "The Forests of India" in the year 1923?
1. Varrier Elvin
2. David Spurr
3. John Middleton
4. E.P Stebbing
165. Which of the following is not true?
1. Hitler was born in 1889 in Berlin
2. In 1919 Hitler joined "German Workers Party"
3. Hitler was a powerful speaker
4. Hitler was committed suicide in 1945
166. Which country became the bread basket of the world?
1. England
2. France
3. America
4. Japan
167. Which method of cultivation was adopted by the "White settlers" in the USA?
1. Primitive cultivation
2. Shifting cultivation
3. Intensive cultivation
4. None of the above
168. "A History of British India" written by
1. James Mill
2. Charles Grant
3. Elphinston
4. Wilson
169. After the defeat at plassey who among the following made the Nawab of Bengal.
1. Mir Jafar
2. Mir Kasim
3. Hussain Khan
4. Ali Bardi Khan II
170. "Hindustan Socialist Republican Association" (HSRA) founded in
1. 1927
2. 1928
3. 1922
4. 1921
171. The poor who played cricket for a living were called
1. Commons
2. Needy
3. Entainers
4. Professionals
172. Which one of the following straits separates India from Srilanka?
1. Sunda strait
2. Johar strait

3. Bering strait
4. Palk strait
173. According to the "Theory of Plate Tectonic" when some plates come towards each other, which of the following is formed?
1. Convergent boundary
2. Divergent boundary
3. Transform boundary
4. None of the above
174. Which place is located on the water divide between the Indus and the Ganga river system?
1. Ambala
2. Nainital
3. Haridwar
4. Allahabad
175. Which of the following is a component of upper air circulation?
1. North-easterlies
2. Jet-stream
3. South-west monsoon
4. Kal baishakhi
176. Which type of vegetation zone is found in the higher reaches of the Himalayas?
1. Tropical
2. Alpine
3. Temperate
4. None of these
177. What year is considered great demographic divide in India?
1. 1911
2. 1921
3. 1931
4. 1971
178. In which of the following states of Nanda Devi Bio-reserve located?
1. Himachal Pradesh
2. Rajasthan
3. Assam
4. Uttarakhand
179. Karbi Anglong of North East India is considered an extension of which of the following physiographic division of Indian
1. Peninsular India
2. Coastal Plains
3. The Himalayan Mountain
4. The Northern Plains
180. Which of the following countries is not larger than India on the basis of size?
1. Brazil
2. Canada
3. France
4. China
181. Which of the following states does not share any International boundary with Bangladesh?
1. Tripura
2. Manipur
3. Meghalaya
4. Mizoram
182. What was the name of the cyclonic storm that hit the coast of Gujarat in India may 2021
1. Amphan
2. Yaas
3. Fani
4. Tauktae
183. When the first meeting of the Constituent Assembly of India was held?
1. 26 November 1949
2. 09 December 1946
3. 14 August 1947
4. 26 January 1950
184. What is a "by-election"?
1. Elections are held in few constituencies
2. Elections are held in all constituencies at the same time, either on the same day
3. Elections are held on different days in different constituencies
4. Sometimes elections are held only for one constituency to fill the vacancy caused by the death or resignation of a member
185. By how many members of Rajya Sabha delay a "MONEY BILL"?
1. 10 days
2. 14 days

3. 21 days
4. 30 days
186. How many members of Rajya Sabha are nominated by President?
1. 2 Members
2. 8 Members
3. 12 Members
4. 14 Members
187. Which one of the following was the Governor of Uttar Pradesh?
1. Sarojini Naidu
2. Sheela Dixit
3. Durgabai Deshmukh
4. Indira Gandhi
188. Which is the permanent house of the Indian Parliament?
1. Rajya Sabha
2. Lok Sabha
3. President
4. Both, Rajya Sabha and Lok Sabha
189. How many Fundamental Rights does the Indian Constitution provide?
1. 7
2. 6
3. 5
4. 8
190. In India election are regularly held at Local level, after every _____ ?
1. 5 years
2. 6 years
3. 9 years
4. 4 years
191. When the National Human Rights Commission of India was set up?
1. 1993
2. 1994
3. 1995
4. 1996
192. How many members of Rajya Sabha retire in every two year?
1. 1/4
2. 1/5
3. 1/3
4. 1/2
193. Match the following
- | | | | |
|-------|----------------------------------|-----|--|
| (i) | Universal Adult Suffrage | (a) | Each constituency has roughly the same population |
| (ii) | Representation of weaker section | (b) | Everyone who is 18 years of age or older has a right to vote |
| (iii) | Open Political Competition | (c) | Anyone can form a party or contest elections |
| (iv) | One vote one value | (d) | Reservation of seats for the SCs and STs |
1. (i) → a, (ii) → b, (iii) → c, (iv) → d
2. (i) → b, (ii) → c, (iii) → a, (iv) → d
3. (i) → b, (ii) → d, (iii) → c, (iv) → a
4. (i) → c, (ii) → b, (iii) → d, (iv) → a
194. Which group is the main target of "Annapurna Scheme"?
1. Minorities
2. Pregnant Ladies
3. Indigent senior citizens
4. Children
195. "Green Revolution" is related to?
1. Tree-Plantation
2. Use of HYV seeds
3. Horticulture
4. All of the above
196. Investment in Human capital can be made through.
1. Education
2. Health
3. On the job training
4. All of the above
197. Crop produced on a given piece of Land during a single season is called?
1. Yield
2. Marginal product
3. Average product
4. Total product

198. What is accepted calories required in India in rural areas?
1. 2400 calories
 2. 2000 calories
 3. 2100 calories
 4. None of the above
199. Which of the following example does not fall under organized sector?
1. A farmer irrigating his field
 2. A doctor in a hospital treating a patient
 3. A daily wage labour working at a shop
 4. A handloom worker working from home
200. Land reform measures helped to reduce poverty in which state?
1. Haryana
 2. West Bengal
 3. Tamil Nadu
 4. Kerala

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