101.

$$\left[9\left(\frac{1}{4^{-1}}+5\right)\right]^{\frac{1}{4}}$$

$$= [9 \times 9]^{1/4}$$

$$= 3$$

Ans(2)

102.

$$\sqrt{m} + \sqrt{n} = \sqrt{p}$$

$$m + n + 2\sqrt{mn} = p$$

$$(m + n - p) = -2\sqrt{mn}$$

$$(m + n - p)^2 = 4\,mn$$

Ans(4)

103.

$$x^2 + \frac{1}{x^2} = 14$$

$$x + \frac{1}{x} = 4$$

$$x^3 + \frac{1}{x^3} = 4(13\ )$$

$$= 52$$

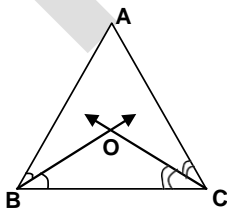Ans(1)

104.

$$27a + 36 + 9 - 4 = 27 - 12 + a$$

$$26a = 15 - 41$$

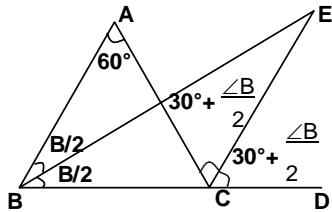$$a = \frac{-26}{26}$$

$$a = -1$$

Ans(1)

105.

$$\angle BOC = 180° - \left(\frac{\angle B + \angle C}{2} \right)$$
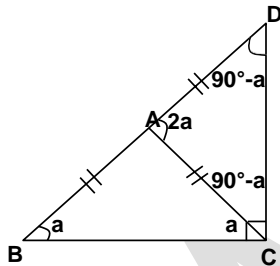
$$= 180° - 60°$$

$$= 120°$$

Ans(4)

106.

$$30° + \angle C + \frac{\angle B}{2} + \frac{\angle B}{2} + \angle E = 180°$$

$$30° + 120° + \angle E = 180°$$

$$\angle E = 30°$$

Ans(2)

107.

$$\angle BCD = 90°$$

Ans(4)

108.

$$Sm = n \qquad\qquad Sn = m$$

$$\Rightarrow 2a + (m-1)n = \frac{2n}{m}$$

$$\Rightarrow 2a + (n-1)n = \frac{2m}{n}$$

$$(m-n)n = 2\left[\frac{n^2 - m^2}{mn} \right]$$

$$n = -2\left(\frac{n+m}{mn} \right)$$

$$2a = \frac{2n}{m} + (m-1)2\left(\frac{m+n}{mn} \right)$$

$$2a = \frac{2n^2 + 2(m-1)(m+n)}{mn}$$

$$S_{m+n} = \frac{m+n}{2}\left[\frac{2n^2 + 2(m-1)(m+n)}{mn} - 2\frac{(m+n-1)(m+n-1)}{mn}\right]$$

$$= \frac{m+n}{mn}\left[n^2 + m^2 + mn - m - n - m^2 - mn - mn - n^2 + m + n\right]$$

$$= -(m+n)$$

109.

$$A = a^2 + b^2$$

$$B = -2b(a+c)$$

$$C = b^2 + c^2$$

$$B^2 - 4AC = 0$$

$$B^2 = 4AC$$

$$4b^2(a+c)^2 = 4(a^2 + b^2)(b^2 + c^2)$$

$$4b^2 a^2 + 4b^2 c^2 + 8b^2 ac = 4a^2 b^2 + 4a^2 c^2 + 4b^4 + 4b^2 c^2$$

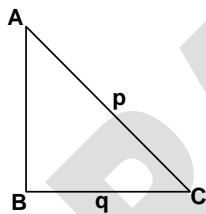$$8b^2 ac = 4a^2 c^2 + 4b^4$$

$\div$ by 4

$$b^4 + a^2 c^2 - 2b^2 ac = 0$$

$$(b^2 - ac)^2 = 0$$

$$b^2 = ac$$

Ans(3)

110.

$$p^2 = q^2 + AB^2$$

$$AB^2 = p^2 - q^2$$

$$= (p+q)(p-q)$$

$$= p + q$$

$$AB^2 = 2q + 1$$

$$AB = \sqrt{2q+1}$$

Ans(2)

111.

$d = 2\sqrt{5 + 16 + 4}$

$= \sqrt{45}$

$= 3\sqrt{5}$

Ans(3)

112.

$\dfrac{4}{3}\pi r^3 = 4\pi r^2$

$r = 3$

$2\pi r = 6\pi$

Ans(3)
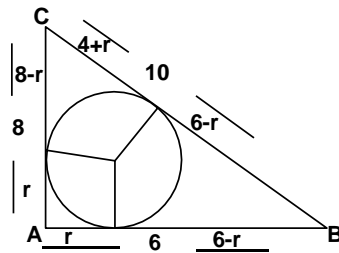
113.

$8 - r = 4 + r$

$2r + 4$

$r = 2$ cm

Ans(1)

114.

$\dfrac{1}{6}$(Direct ans)

Ans(4)

115.

$\alpha\beta + \beta\gamma + \gamma\alpha = 11$

$\alpha\beta\gamma = 6$

$\gamma = 3$

Ans(3)

116.

$11 = 55m - 44$

$55m = 55$

$m = 1$

Ans(2)

117.

$x + y = 1$

$2x + 2y = 2$

Both lines coincide. Thus there will be infinite number of solution

Ans (3)

118.
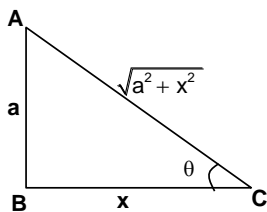
$\cos\theta = \dfrac{x}{\sqrt{a^2 + x^2}}$

Ans(1)

119.

$x^n + n = (x - 1)q(x) + r$

$1 + n = r$

Ans(3)

120.

Ans (2) Direct answer

121. Ans: C
Solution:-

$V_{avg} = \dfrac{2\,V_1 V_2}{V_1 + V_2}$

$= \dfrac{2 \times 60 \times 40}{100}$

$= 48\ \text{KMPH}$

122. Ans:

$p_i = mv,\ p_f = 4mv$

$\Delta p = 4mv - mv$

$= 3mv$

% of change 300%

123. Ans: C

$$\frac{V_A}{V_B} = \frac{Tan\,30}{Tan\,60} = \frac{\frac{1}{\sqrt{3}}}{\sqrt{3}}$$

$$= \frac{1}{3}$$

124.

Ans: A

$$a_{OA} = \frac{V_2 - V_1}{t_2 - t_1} = \frac{10 - 0}{2 - 0}$$

$$= 5m/s^2$$

$$a_{AB} = 0\,m/s^2$$

$$a_{BC} = \frac{0 - 10}{10 - 8} = -5m/s^2$$

125.

2kg	1 kg	4 kg
•	•	•

$\overleftrightarrow{\qquad x \qquad}$ $\overleftrightarrow{\qquad 2 - x \qquad}$
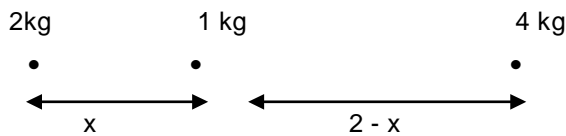
Ans: 4

$$F_{21} = F_{41}$$

$$\frac{G(2)(1)}{x^2} = \frac{G(4)(1)}{(2-x)^2}$$

$$2x^2 = 2(2-x)^2$$

$$\sqrt{2}x = 2 - x$$

$$\left(\sqrt{2} + 1\right)x = 2$$

$$x = \frac{2}{2.414} = 0.828$$

$$= 0.83m$$

126. Ans: C

$$m = 3 \times 10^7\,kg; \ F = 5 \times 10^4\,N$$

$$a = \frac{5 \times 10^4}{3 \times 10^7} = \frac{5}{3} \times 10^{-3}$$

$$v^2 - u^2 = 2as$$

$$v^2 = 2.\frac{5}{3} \times 10^{-3} \times 3$$

$$= 10^{-2}$$

$$v = 0.1\,m/sec$$

127.

Ans: D

$$R = \frac{V^2}{P} = \frac{220 \times 220}{110}$$

$$= 440\Omega$$

$$P = \frac{V^2}{R} = \frac{110 \times 110}{440} = 27.5w$$

128.
    Ans: A

$$R_{eq} = 8\ \Omega$$

$$i = \frac{16}{8} = 2A$$

$$V_5 = 5 \times 2 = 10V$$

129.
    Ans: A
    Solution:-

$$R_{eq} = \frac{100}{25} = 4\Omega$$

$$i = \frac{20}{4} = 5A$$

130.
    Ans: B

$$i = \frac{5}{2} = 2.5A$$

$$2.5 = \frac{n \times e}{1sec} = n \times 1.6 \times 10^{-19}$$

$$n = \frac{2.5}{1.6} \times 10^{19} = 15.6 \times 10^{18}$$

131.
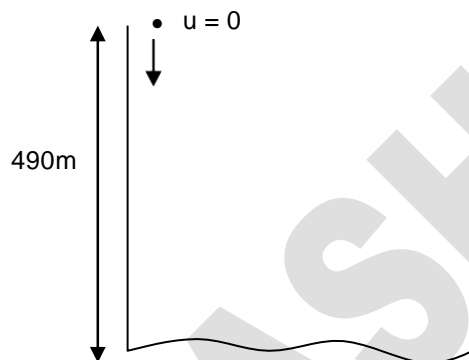
    Ans: A

$$T = t_f + t_s$$

$$490 = \frac{1}{2}\ 9.8\ t_f^2$$

$$980 = 9.8\ t_f^2$$

$$t_f = 10\,\text{sec.}$$

$$t_s = \frac{490}{350}$$

$$= 1.4\ \text{sec}$$

$$T = 11.4\ \text{sec}$$

132. Ans: C
    Solution: Conceptual

133. Ans: D
    Solution: Conceptual
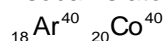
134.
   K = 2 electrons
   L = 8 electrons
   M = 6 electrons
     = 16 electrons $\Rightarrow$
   oxygen $\Rightarrow$ 16th group
           3rd period

135. Isobar is atoms have same mass number & different atomic number
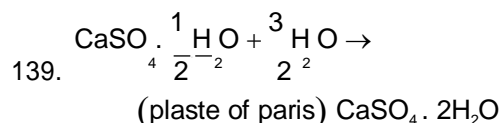 $_{18}Ar^{40}$ $_{20}Co^{40}$

136. Homo atomic molecule is molecule with same atom
   Ex: Ozone = O_3

137. pH of the acid is less than 7

138. Metal present in chlorphyllis Mg

139. $CaSO_4 . \dfrac{1}{2}H_2O + \dfrac{3}{2}H_2O \rightarrow$
   (plaste of paris) $CaSO_4 . 2H_2O$

140. Foul. Surelling of etable is due to decomposition

141. Because Mg is light than water. It will react with hot water slowly to form
   $HgO + H_2\,Mg + HO + H_2O \rightarrow MgO + H_2$

142. Hydrogen is also called as protiumatoms

143. Forces of attraction order is
   gas $<$ liquid $<$ solid
   $O_2 <$ $H_2O <$ Sugar

144. Ionic compounds are solids at room temperature due to strong electrostatic force between the opposite ions.

145. Greater the surface area of the reactant greater the rate of chemical reaction

146. Chromatography.

147. Ans: (A) (a) – (iii), b -(iv), (c) – (i), d – (ii)
   Solution:-

	Column - I		**Column – II**
(a)	Seed borne disease	(i)	Leaf spot of rice
(b)	Soil borne disease	(ii)	Tikka disease of groundnut
(c)	Air borne disease	(iii)	Blast of rice
(d)	Water borne disease	(iv)	Bacterial blight of rice

148. Ans: D $\rightarrow$ Nucellus, Integuments, Antipodals, Micropyle
   Solution:-
   (a) Nourishment for the developing embryosac is by Nucellees
   (b) Seed coat develops from integuments
   (c) Nuclei facing towards the chalazal end are antipodals
   (d) When a seed is soaked and pressed, water always oozes out through an opening called micropyle

149. Ans: B $\rightarrow$ Bio – Geo Chemical cycle
   Solutions:-
   Nutrient elements get recycled among earth crust, plants and animals called Bio-Geo chemical cycles

150. Ans: A
Solutions:-
Malaial sporozoites when enter the human blood, they reach to liver for hepatic schizogony. After the asexual reproduction, new daughter cells (merozoites) enter RBC for erythrocytic cycle (merozoites) enter RBC for erythrocytic cycle/ Golgi cycle. Δt the end of erythrocytic are formed which enter the body of mosquito during its feeding. In mosquito body sexual reproduction and asexual reproduction occur to produce sporozoites that reach the salivary glands of mosquito

151. Ans: 2 → a - True
                B – False
                C – True
                D – True
Solution:-
(a) Pepo type fruits develop from tricapellary, syncapous and inferior ovary
(b) Orupe type fruits develop from multicarpellary or moncarpellary, syncarpous and superior ovary
(c) Pome type fruits develop from bi 81 multicarpellary, syncarpous and inferior ovary. Here true fruit/ovary remains hard and dry. Thalamus develops into a fruit like structure. Hence pome is false fruit 81 pseudo fruit
(d) Hesperidium type fruits develop from multicarpellary, syncarpous and superior ovary.

152. Ans: 4 → Exosmosis – Turgidity
Solution:-
Turgidity is caused due to endosmosis.

153. Ans: A →(A) is correct; (R) is wrong
Mule is produced from male donkey and female house. Donkey and hose belong to different species (interspecific) but belong to same genus (intrageneric)

154. Ans: A → Arthropoda and Annelida
Solution:-
Centipede has jointed legs (nearly about 100) and belongs to Arthropoda pylum. Earthworm has segmented body and belongs to Annelida phylum (Annula = Rings)

155. Ans: B → Lysosomes contain lytic enzyme to digest the whole cell content.
Solution: - During infections, lysosomes bulge in size, burst and digest the entire cell, Hence, it is called suicidal bags of cell.

156. Ans: C → Leptotene → Zygotente → Pachytene → Diplotene → Diakinesis
The sequencial arrangement of subphases in prophase I of meiosis I is Leptotene → Zygotente → Pachytene → Diplotene → Diakinesis

157. Ans: A → Both (A) and (R) are true and (R) explains (A)
Solution:- Pituitary gland is called "Conductor of endocrine orchestra" 81 " Master gland" 81 "Band Master of orchestra" as it controls the function of all other endocrine glands

158. Ans: D → 0%

159. Ans: D → It dilates the blood vessels and raises the blood pressure.
Solution:-
a. Vasopressin helps in reabsorption of water and salts from urine and adds to blood
b. Less production of vasopressin leads to Diabetes insipidus
c. Vaso pressin constricts the blood vessels to increase the blood pressure

160. Ans: A → Crossing over process of sexual reproduction.
Solution: -
Subsequent generations show greater improvement in genetic characters. It is seen inhigher animals particularty because, in sexual reproduction of higher animals gametes are formed by meiosis cell division. This meiosis shows crossing over at one particular stage [Meiosis I → Prophase I → pachytene] where new and better traits are expressed

161.   Ans: D (b, d, a, c)
    Solution:
    (b) The League of Nations Society
    (d) The World League for peace
    (a) The League of Free Nations Association
    (c) The League of Nations

162. Ans: 3 → Pingali Venkayya
    Solutions:
    The disiner of Indian Nation flag is

163. Ans: Charminar
    Solutions:
    The famous monument built to commemorate the end of plague in India in the year 1591.

164. Ans: Aruna Asaf Ali
    Solutions:
    The Heroine for Quit India Movement

165. Ans: Aristotle
    Solutions:
    The teacher for Alexander the Great is

166. Ans: Aihole
    Solutions:
    Cradle for Indian Temple Architechture'

167.   Ans: Jallianwalbagh Massacre
    Solutions:
    Knighthood' surrendered to British after

168.   Ans: (A) Sodium Carbonate and sodium bicarbonate
    Solutions:
    Mumcification of dead bodies by egyptions using

169. Kamarajar's birthday is celebrated as "Educational Development Day" in
        Ans : 2006

170. The Indian ruler who organized pilgrimage to maj at the experise of state
        Ans ;- Akbar

171. The first Balkan war held between
        Ans 1912 – 1914

172. Salem – Kolli hills
     Correct option :- Salem – Chennimalai hills

173. Coimbatore Soil is
     Correct option : Black Soil

174. Appiko movement is started in
     Correct option : Karnataka

175. Planet has it axis highly titled
     Correct option : Uranus

176. The famous pass between India and chim reopened :
        Ans: Nathula

177. Minor ports are
        Ans: Anchorage Ports

178. Wild life reserver in Karnataka in 1974
    Ans : Bandipur National Park

179. Rivers marked is
    Ans :- Yamum, Mahamdi, Krishna

180. Instrument to measure wind speed
    Ans : Beacefort Scale

181. Old names of Zambia and Zimbabwe.
    Ans :- Northern Rhodesia and Southern Rhodesia

182. None Option : 4
    Red and Yellow soil develop due to from lack of phosphorous.
    Black Soil rich in 1

183. Comprehensive Nuclear Test Ban Treaty 1968
    Bandung Conference – 1955
    Nuclear Test Ban Treaty – 1963
    Non – Proliferation Treaty – 1996

184. People's representative should be elected through election option : 2

185. First transgender Judge of Lok Adalat
    Ans :- Jyotiba Mondal

186. Saudi Arabia is monarchial rule.

187. Option A is correct because supreme court cannot interfere in Military Tribunali

188. The authority to suggestions to the president on politically
    Ans : Supreme Court

189. 61st amendment made in
    Ans : 1988

190. Two countries got Independence in 1971 are
    Ans :- Bangladesh and Bahrain

191. They worker forced to render a free service is not a exercise of fundamental right.

192. Two countries with tamil as official language
    Sri lanka, Singapore

193. Chief Justice of India acted as Acting President of India
    Mohammad Hidyarullah

194. 1st woman chairperson of SRI is
    Ans : Arundhati Shattacharya

195. 10th largest and oldest stock exchange in Asia
    Ans : Bombay Stock exchange

196. Finance minister who presented maximum number of union budgets is
    Ans: Morarji Desai

197. FERA – Financial Exchange Regulation Act.

198. Percapita Income = $\dfrac{\text{National Income}}{\text{Total population}}$

199. MGNREGA 2005 guarantees
Ans : 100 days of employment

200. State Bank of India before Nationalisation was known as
Ans Imperial Bank of India