

INTERNATIONAL HEALTH OLYMPIAD

REFERENCE BOOK

CATEGORY 2 - IHO SENIORS
(Classes 8 to 10)



INTERNATIONAL HEALTH OLYMPIAD
REFERENCE BOOK

Category 1: Senior

MESSAGE

Dear Aspirants,

International Health Olympiad is a mission to figure out young blooming talents who has extraordinary potential in learning. International Health Olympiad is conceived as an international quiz competition for students of class 5-12 on Science subjects including Physics, Chemistry, Biology and Mathematics, giving special focus on health related topics so as to educate the young generation about health and health related topics so as to create a generation well aware about Health issues and importance of health care and hence the name International Health Olympiad.

International Health Olympiad has a syllabus that spreads across various fields of Science based on the school academic syllabi of the three categories of the three categories of competition. We want each of the participants to win in International Health Olympiad and this reference book is a designed with a view of helping the participants in preparing for the competition.

The book contains a large number of questions that would enrich your knowledge in all areas covered in the syllabus of IHO and also it will help you enlarge your knowledge bank. With this Reference book, you can take your preparations for International Health Olympiad to the next level and thus make yourself a strong competitor for all other participants. The book is so designed not just for International Health Olympiad but to equip the participants to participate in many other competitions as well.

I wish good luck to you all and may god almighty bless you to become the winner of International Health Olympiad.



Fr. Davis Chiramel

Chairman, Kidney Federation of India

MESSAGE

Dear Knowledge Seekers,

It gives me immense pleasure to wish success to all aspirants competing to win International Health Olympiad. Let the thirst for knowledge in you take you all to heights of glory!

International Health Olympiad is a unique platform where the true talents gets rewarded for the knowledge they have. Besides being a talent hunt for students and related fields, International Health Olympiad keeps its primary focus on making the current generation aware about health and importance of health care. As the new health issues are arising every day, it becomes a necessity to educate the young generation about health care. This unique idea of spreading knowledge and thereby making people healthy is the factor which connects VPS Lakeshore Hospital and International Health Olympiad. VPS Lakeshore has been serving the society in health care since more than a decade and we have always tried to be innovative on our own and VPS lakeshore is proud to be the associating partner with International Health Olympiad for the same reason.

It's really happy to know that International Health Olympiad is publishing a free reference book to help the participants in preparing for the competition, covering the syllabus of the competition. I hope this material could help you prepare better for the competition and be a good asset for you in gathering knowledge.

With Best Wishes,



S.K. Abdulla

Chief Executive Officer, VPS Lakeshore Hospital

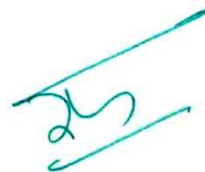
MESSAGE

Dear Candidate,

I consider it a privilege to be addressing you through this book, which draws your attention to the most important aspect of your growing years. The 'parent' generation have always been a worried lot, since ages, either about the food intake of the children or about the sickness frequency. Later, nutrition, exercise, posture etc. of the children started to attract the criticism of parents and interested elders like teachers too. Now, pollution of air and water, adulteration of crops and food and ill-health of the mind of the youngsters due to too much exposure to devices are all considered to be aftermaths of technological development. Hence, I believe that engineering colleges should own up the responsibility to not only change the perception but also actively be the change-makers via awareness campaigns and education through such books and related programmes. Our interactions with the students who come to us to study engineering, tell us that they want to clean up not only such an image but also go for responsible engineering, which is more creative than, destructive. It is our students, who have motivated us to be a part of this endeavour, to care for their younger brothers and sisters to have a healthier life through a healthier and informed mind.

In this context, what does the book talk about? It engages with the natural curiosity the child is blessed with. It substantiates the general understanding of life the young reader has already collected from the environment. It kindles in the child, the desire to perform, and through such performances in Olympiads to keep the flame of ambitions burning in his or her mind.

Please read the book carefully and prepare well and come to us, with good results and always get back to us with any suggestions you wish to have in the book or in the contest or in this world!



Dr. Sudha Balagopalan

Principal, Vidya Academy of Science and Technology

CONTENTS

<u>SUBJECT</u>	<u>PAGE</u>
General Science	07 - 23
Physics	24 - 42
Chemistry	43 - 96
Mathematics	97 - 105
Biology	106 - 151
Health Science	152 - 186

GENERAL SCIENCE

Level 1

1. Fruits, vegetables and cereals are potent sources of:
Ans: Antioxidants
2. The leading source of antioxidants in the U.S. diet is:
Ans: Spinach
3. Which one of the following is an endangered species: Cuscuta, Nepenthes, Datura, Butea
Ans: Nepenthes.
4. The only fat-soluble antioxidant synthesized in the body is:
Ans: CoQ10.
5. One of the fat-soluble vitamins involved in coagulation is:
Ans: Vitamin K.
6. Products that contain live microorganisms in sufficient numbers to alter intestinal microflora and promote intestinal microbial balance are known as:
Ans: Probiotics.
7. Non-digestible food ingredients that stimulate the growth and activity of certain bacteria in the colon are called:
Ans: Prebiotics
8. A deficiency of thiamine (vitamin B1) in the diet causes:
Ans: Beriberi.
9. Symptoms of trigeminal neuralgia may include all of the following except:
Ans: Inability to swallow.
10. Consuming fewer than 130 grams of carbohydrate per day may lead to:
Ans: Ketosis.
11. The Largest Organ in the human body is :
Ans: Skin.
12. Insulin is secreted by :
Ans: Pancreas.
13. The pigment that gives color to the skin is :
Ans: Melanin.
14. Rabies vaccine was invented by:
Ans: Louis Pasteur.

15. Tuberculosis is caused by :
Ans: Bacteria.
16. Malaria is caused by :
Ans: Plasmodium Species.
17. AIDS is an acronym for:
Ans: Acquired Immune Deficiency Syndrome.
18. Malaria is caused by _____.
Ans: Plasmodium Species.
19. Fiber in the diet is essential because
Ans: It adds bulk to the feces.
20. The richest natural source of Vitamin C is
Ans: Gooseberry.
21. Hemoglobin in blood contains which element?
Ans: Iron.
22. Decreased abdominal respiration, the client should be further assessed for
Ans: Liver disease.
23. A patient was diagnosed with bleeding ulcer of the lesser curvature of the stomach. Which artery is most likely involved?
Ans: Gastro duodenal.
24. This system controls everything you do:
Ans: Nervous system.
25. The nervous system is made up of these three parts:
Ans: Brain, spinal cord, and nerves.
26. Which part of the body is the control center for the nervous system?
Ans: Brain.
27. A typical brain weighs how much?
Ans: 1.4 kilograms.
28. What is the biggest part of the brain?
Ans: Cerebrum.
29. Which part of the brain helps keep your balance so you don't fall flat on your face?
Ans: Cerebellum.
30. Which part of the brain keeps you breathing?
Ans: Brain stem.
31. The brain creates connections, or pathways, between these microscopic cells:
Ans: Neurons.
32. Your emotions are believed to come from the:
Ans: Amygdala.
33. Where is Vitamin D primarily stored?
Ans: Blood, liver, adipose tissue.

34. Anorexics are below normal body weight by what percentage?
Ans: 15.
35. Vitamin D intake requirements increase to 10 micrograms at what age?
Ans: 50.
36. Retinoid are found in what types of food:
Ans: Animal Products.
37. Vitamin A and E share which functions:
Ans: Antioxidant and immune response.
38. True or false: Vitamin A can be stored in the liver for more than a year.
Ans .True.
39. True or false: Fat Soluble Vitamins are stable in cooking and baking.
Ans: True.
40. Which Vitamin comes from orange juice?
Ans: Vitamin D.
41. Oral Implications of a Vitamin D deficiency would most likely be:
Ans: Hypoplasia.
42. True or false: Too much Vitamin D can cause hypoplasia or hypo calcification.
Ans: True.
43. If a patient is taking Coumadin, they should have a consistent daily intake of which vitamin?
Ans: Vitamin K
44. The most biologically active form of Vitamin E is:
Ans: Alpha-tocopherol.
45. True or false: Omega 3 Fatty Acids is a source of Vitamin E
Ans: False.
46. Too much Vitamin E can interfere with the Vitamin K clotting mechanism.
Ans: True.
47. Vitamin K has three related forms which are all of the following EXCEPT:
Ans: Synthesized from Vitamin K production.
48. A function of Vitamin K would be:
Ans: Blood clotting factor.
49. The AI for Vitamin K for adult women is:
Ans: 90.
50. The primary food source of Vitamin K is:
Ans: Green leafy vegetables.
51. A high fat diet causes an increase in dental caries.
Ans: False.
52. Digestion of fats occurs primarily in:
Ans: Small intestine.
53. True or False : Omega 3 fatty acids is included in Breakfast cereals

Ans: False.

54. True or False: Triglycerides have 2 fatty acids linked to a glycerol molecule.

Ans: False.

55. True or False: Saturated fats have more than one double bond.

Ans: False.

56. A source of polyunsaturated fatty acids would be:

Ans: Oil-based salad dressings

57. Sterols and cholesterol are derived lipids, fat-like compounds that originate from other lipids.

Ans: True.

58. Monounsaturated fatty acids decrease HDLs.

Ans: False.

59. A pancreatic lipase deficiency would require the _____ - _____ form of Vitamin A.

Ans: water-soluble.

60. Additional functions of Vitamin C include its ability to convert folic to folinic acid, enhancing the absorption of iron, and metabolizing amino acids.

Ans: True.

61. B12 is absorbed by the ileum as a complex with

Ans: "intrinsic factor" from gastric mucosa.

62. True or False: B6 is under prescribed to treat PMS. If deficient, can cause numbness in feet and hands which may eventually lead to an inability to walk.

Ans: False.

63. Cobalamin is also known as

Ans: Vitamin B12.

64. Deficiency of B12 or folate has the same effect on blood cells resulting in anemia. Without intrinsic factor to act as a carrier for B12, heme cannot be formed for hemoglobin, and folate becomes trapped in its inactive form,

Ans: True.

65. Deficiency of Vitamin D results in _____ in growing children, and _____ in adults.

Ans: Rickets, Osteomalacia.

66. True or False: Deficiency syndromes come from Diuretic use.

Ans: False.

67. Dry BeriBeri is when :

Ans: There is no edema.

68. Fat soluble forms of Vitamin K are ___ and ___ require ___ for absorption.

Ans: K1, K2, bile salts.

69. Folate is a coenzyme in the formation of DNA, converting _____ to _____ as well as hemoglobin synthesis.

Ans: Homocysteine to methionine.

70. How many forms are there of Vitamin E?

Ans: 3 (alpha, beta, gamma).

71. How much Vitamin A does the precursor, Beta Carotene supply?

Ans: 2/3.

72. True or False: Hypervitaminosis A does not cause Heart damage.

Ans: True.

73. In the GI system, Beri Beri causes skeletal muscle cells and secretory glands to lack the energy to carry out the digestive process.

Ans: False.

74. Lipoic Acid and Choline are not true vitamins but are closely related to all but...

Ans: Help transport B12 to liver.

75. Low levels of Vitamin D may also account for end stage _____

Ans: Renal disease.

76. Megablastic anemia is due to a lack of folate and is when there are large immature cells. This can lead to spinal cord defects like spina bifida and anencephaly during pregnancy.

Ans: True.

77. True or false: Pantothenic acid and biotin are types of B vitamins

Ans: True.

78. Pellagra is most seen in people who eat a lot of _____

Ans: Corn.

79. Poor ____ absorption will result in poor vitamin K absorption

Ans: Fat.

80. True or False: Pyridoxine is also known as B6.

Ans: True.

81. Requirements of Vitamin E vary due to the amount of _____ in diet.

Ans: Polyunsaturated fatty acids.

82. True or False: Riboflavin is easily destroyed by light

Ans: True.

83. Storage of Vitamin A lasts for how much time?

Ans: 6-12 months.

84. The best source of Vitamin E is...

Ans: Vegetable oils.

85. The clinical name for toxicity due to Vitamin A is _____

Ans: Hypervitaminosis A.

86. The liver stores ____ % of the body's vitamin A.

Ans: 90.

87. The scientific name for niacin is _____.

Ans: Nicotinic acid.

88. The scientific name for Vitamin C is...

Ans: Ascorbic Acid.

89. The scientific name for Vitamin K is _____
Ans: Quinones
90. The _____ vitamins facilitate work of every cell by generating energy, making protein, in cellular reproduction, metabolizing carbohydrates, fat, and protein.
Ans: B
91. There are several forms of Vitamin K. K1 or _____ is in plants. K2 or _____ is synthesized by intestinal bacteria. K3 or _____ is the water soluble form requiring bile salts for absorption.
Ans: Phylloquinone, menaquinone, menadoine.
92. Toxicity of vitamin C leads to scurvy. Symptoms include: bleeding gums, pinpoint hemorrhaging, degeneration of muscles, rough scaly skin, poor wound healing, softening and malformation of long bones, anemia, infection, and sudden death due to bleeding in joints and body cavities.
Ans: False.
93. Toxicity of Vitamin D is also called _____.
Ans: Hypervitaminosis D.
94. Toxicity with Vitamin C may be increased in people who have gout and
Ans: Sickle cell anemia.
95. Vitamin A absorption occurs in the _____ and requires _____.
Ans: Small intestine, bile salts.
96. Vitamin B deficiency diseases are all of these except...
Ans: Rickets.
97. Vitamin D acts more as a hormone than a vitamin because it is a precursor of _____ when it is in the skin.
Ans: Cholesterol.
98. Vitamin D helps is involved with which body system?
Ans: Endocrine
99. Vitamin D is a pro-hormone for _____.
Ans: Sterols.
100. Vitamin D may protect against which cancers?
Ans: Breast, colon, and prostate cancer
101. Vitamin D promotes bone _____, by regulating deposition and re-absorption.
Ans: Mineralization.
102. Vitamin D with parathyroid hormone stimulates the absorption of _____ and _____ in the small intestine.
Ans: Calcium, Phosphorus.
103. Vitamin E is also called _____.
Ans: Tocopherol.
104. Vitamin E is important for which people?

Ans. Pregnant women, lactating women, newborns, older adults, people with leg pain, and people with malabsorption issues.

105. Vitamin K is absorbed with other fat soluble vitamins into _____ to be transported to the liver where it is stored in _____ amounts.

Ans: Chylomicrons, Small

106. Wet beriberi is characterized by _____.

Ans: Edema.

107. Pick out the odd one: Water Liquid Solid Gas.

Ans: Water.

108. Which state the molecules have large kinetic energy?

Ans: Gas.

109. Where we can see illuminated matter?

Ans: Neon lamp.

110. A phase change of matter depends up on?

Ans: Temperature.

111. Which scientist put forward the formula $E = mc^2$?

Ans: Albert Einstein.

112. When a solid reaches its melting point, it becomes -----?

Ans: Liquid.

113. Which gas is helpful to burning?

Ans: Oxygen.

114. In hydraulic system pressure transmitted through?

Ans: Liquid.

115. Density is the amount of ----- in a certain volume?

Ans: Mass.

116. Which gas is very use full for human beings?

Ans: Oxygen.

117. Due to friction between moving parts of machine there is found

Ans: Heat.

118. When up thrust is equal to weight of object then it

Ans: Floats.

119. There will be great distance in stopping a vehicle which is moving

Ans: Fast.

120. To reduce air and water resistance objects are _____.

Ans: Streamlined.

121. True or false: Any substance will float on water/gas if its density is less than that of air/Water

Ans: True.

122. Upward push which is acting on object which is partially or totally immersed in a liquid or gas is called

Ans: Buoyant force.

123. Force of attraction between two masses is called

Ans: Gravitational force.

124. a charged balloon attaches to a wall because of

125. Ans: electrostatic force.

126. A body is said to be under balanced forces when the resultant force applied on that body is

Ans: Zero.

127. The ratio of force, acting perpendicular to the area, on which it acts is known as

Ans: Pressure.

128. the pressure of the water at the bottom of the pond is _____at the surface of the pond

Ans: higher than.

129. As we go to the higher altitude the atmospheric pressure _____.

Ans: Decreases.

130. The force involved in falling of an apple from a tree is

Ans: Gravitational force.

131. Which gland is known as emergency gland?

Ans: Adrenal gland.

132. Which is the largest organ in human body?

Ans: Skin.

133. Which blood group is also known as universal recipient?

Ans: AB group.

134. Which one of the following acts as a communication system?

Ans: nerve.

135. The tear gland helps us in _____.

Ans: providing a clean moist surface.

136. In diphtheria the organ affected is?

Ans: throat.

137. Which is the longest cell in human body?

Ans: nerve cell.

138. Vitamin that promote eye sight?

Ans: Vitamine A.

139. Disease known as white plague?

Ans: Tuberculosis.

140. Which part of the plant gets carbon dioxide from the air for photosynthesis?

Ans: Stomata.

141. Iodine used to detect presence of starch. it gives starch

Ans: Blue color.

142. The plant which traps & feeds on insects is

Ans: Pitcher plant.

143. The main function of a leaf is

Ans: To prepare food.

144. What do roots do?

Ans: Absorb water, Absorb nutrients, Hold the plants in place.

145. World environment day is observed on

Ans: June 5th

146. The SI unit of Velocity :

Ans: m/sec.

147. The time interval between two consecutive sunrises is known as :

Ans: Day.

148. The S.I. Unit of length :

Ans: Meter.

149. Motion of a pendulum is an example of

Ans: Periodic motion.

150. Some kind of change in the position of an object is called :

Ans: Motion.

151. The average speed is the :

Ans: Total distance travelled by the total time.

152. Light year is a measure of :

Ans: Distance.

153. What is the basic unit of time?

Ans: Second.

154. When is pendulum said to have completed one oscillation?

Ans: Movement of bob from one extreme position and then to its first extreme position.

155. A bus covers 20 km in 30 minutes at speed X and a distance of 30 km in 40 minutes at speed Y. Which speed is higher?

Ans: Y

156. 1 hectometer is equal to _____ m

Ans: 100 m.

157. Five km is ----- m

Ans: 5000 m.

158. _____ is nocturnal.

Ans: Owl.

159. Border, Leicester and Corrie dale are all breeds of what?

Ans: Sheep.

160. Which animal is the first to be domesticated?

Ans: Dog.

161. True or fals : Dog can't hear high pitched sounds

Ans: True.

162. What is the one thing worm don't have other animals do?

Ans: Eyes.

163. Where the rarest species Tarsiers found?

Ans: Islands of South Asia.

164. Which is the largest living bird?

Ans: Ostrich.

165. Which is the largest in size among the sub species of Tiger?

Ans: Siberian tiger.

166. Kidney stones are mainly formed by which of the following compound?

Ans: Calcium Oxalate.

167. _____ made inside the nucleus of a cell, associates with proteins to form ribosomes.

Ans: RNA

168. Why is sickle cell disease so called?

Ans: pH changes in the blood cells make them collapse into a sickle shape.

169. The most advanced evolutionary inflorescent is found in ?

Ans: Dahlia.

170. The process of converting vapours back into liquid is called as

Ans: Condensation.

171. Which is the method used to separate two miscible liquids?

Ans: Separating funnel.

172. The spinner in washing machine dries clothes works on the principle of _____

Ans: Centrifugation.

173. The process of solid changing directly in vapour form without becoming liquid is called

Ans: Sublimation.

174. Relation between two populations that benefits both is known as

Ans: Mutualism.

175. Incident angle = Reflected Angle. This law in optics is known as _____.

Ans: Law of reflection.

176. Light travels in _____.

Ans: Straight lines.

177. Butter paper is an example of _____ object

Ans: A translucent.

178. Which of the following is a protective food?

Ans: Fruits.

179. Goitre: swelling of thyroid glands occurs due to the deficiency of _____.

Ans: Iodine.

180. Which of the following is considered as 'body building foods'?

Ans: Proteins.

181. Our body prepares which type of Vitamin in the presence of sunlight?

Ans: Vitamin D.

182. _____ is essential for forming haemoglobin in the blood.

Ans: Iron.

183. Our hair and nails contain

Ans: Protein.

184. Rickets is caused by the deficiency of

Ans: Vitamin D.

185. Scurvy (Bleeding gums) is caused due to the deficiency of

Ans: Vitamin C.

186. The essential components of our food are called _____

Ans: Nutrients.

187. The food component present in sugar is

Ans: Carbohydrates.

188. The percentage of water in the human body is

Ans: 70.

189. Foods like pizza, burger and noodles are rich in

Ans: Carbohydrates.

190. _____ provides more than double the energy provided by carbohydrates or proteins in

Ans: human body.

Ans: Fats.

191. The component of food which help our body to fight against infections is

Ans: Proteins.

192. The disease caused by the deficiency of iodine is

Ans: Goiter.

193. _____ helps to maintain a constant body temperature in our body.

Ans: Water.

194. Our body needs ____ liters of water every day

Ans: 2-3.

195. Deficiency of proteins and carbohydrates in infants leads to

Ans: Marasmus.

196. Excessive body weight due over nutrition leads to

Ans: Obesity.

197. Vitamins and minerals are _____ type of foods.

Ans: Protective food.

198. The mineral we get from fish is

Ans: Iodine.

199. Night blindness is caused by the deficiency of

Ans: Vitamin A.

200. Benedict's solution is used to test the presence of _____ in food.

Ans: Sugar.

201. Colds are caused by _____

Ans: Virus.

202. A medicine which contain dead or weakened germs is used to prevent infectious disease is called a

Ans: Vaccine.

203. Viruses are made up of

Ans: DNA, RNA, protein coat

204. Use of organisms specially micro-organisms in manufacture or industrial processes is called

Ans: Biotechnology

205. BCG vaccination can prevent

Ans: Tuberculosis

206. Microorganisms also help in production of food like

Ans: Bread

207. Plasmodium is found in

Ans: Female anopheles

208. Person with hand foot and mouth diseases have spots in hand, foot and mouth called

Ans: Blisters

209. Aspirin comes from which of the following?

Ans: Willow bark.

210. Carrot is orange in color because?

Ans: It contains carotene.

211. The main excretory product of frog is ?

Ans: Urea.

212. The lining of marrow cavity is called?

Ans: Endosteum.

213. Which one of the following is not a true fish?

Ans: Starfish.

214. The primary source of carbohydrates is _____.

Ans: coal-far.

215. The function of Trypsin is to?

Ans: Break down proteins.

216. The branch of agriculture which deals with the feeding, shelter, health and breeding of the domestic animals is called?

Ans: Animal Husbandry.

217. Which of the following parts of human body is affected by Pyria ?

Ans: Teeth and gums.

218. The vitamin which is generally excreted by human in urine is ?

Ans: Vitamin – C.

219. Acromegaly is caused by irregular secretion of

Ans: Pituitary.

220. The A, B, O blood groups were discovered by _____.

Ans: Karl Landsteiner.

221. Identical twins are born, when _____.

Ans: Two sperms fertilize one ovum.

222. The food which gives an athlete instant energy is _____.

Ans: Glucose.

223. DNA structure was first described by

Ans: Watson and Crick.

224. One feels sensation of heat when exposed to _____.

Ans: Infra-red rays.

225. The temperature of the substance remains constant when it is melting and boiling though some quantity of heat is supplied. What happens to this energy?

Ans: It is used to change the state of the substance.

226. We cannot use mercury thermometer at low temperatures because:

Ans: Mercury freezes at low temperatures.

227. The minimum possible temperature beyond which water cannot be cooled is

Ans: 273.15°C.

228. On which of the scales of temperature, the temperature is never negative?

Ans: Kelvin.

229. Chlorophyll is found in oval-shaped structures called as

Ans: Chloroplast.

230. Light dependent of photosynthesis stage cannot be carried out without _____.

Ans: Water.

231. Plants can be called as _____.

Ans: Heterotrophy.

232. Light absorbed by chlorophyll is converted into _____.

Ans: chemical energy.

233. Hydroponics refers to _____.

Ans: growing plants without soil.

234. For many autotrophic organisms, an essential source of energy is _____.

Ans: light.

235. Carbon dioxide (CO₂) taken in night is stored in form of _____ in plants.

Ans: chemical energy.

236. Oxygen (O₂) released during photosynthesis comes from _____.

Ans: Water.

237. Excess sugars in plants are changed in to the form of _____

Ans: Starch.

238. From where does saliva come in our mouth?

Ans: It is secreted by salivary glands situated in our mouth.

239. In grass-eating animals, the grass is stored in a part of the stomach where the food gets converted into cud. This part is called _____.

Ans: Rumen.

240. Which instrument is used to measure changes in volume of substances?

Ans: Dilatometer.

241. What will happen to lime water when we exhale air into it?

Ans: Turns milky.

242. The function of hair follicles inside the nose is to _____.

Ans: To trap germs and dust particles in air.

243. Deforestation generally decreases _____.

Ans: Rainfall.

244. Fossil fuel and metallic minerals are _____ resources.

Ans: Non-renewable resources.

245. Hot spots are regions of high _____

Ans: Endemism.

246. Conservation within the natural habitat is called _____.

Ans: In-situ conservation.

247. Dodo is a _____ bird.

Ans: Extinct.

248. Biodiversity _____ towards the equator

Ans: Increases.

249. IUCN is also called as _____.

Ans: World Conservation Union.

250. MAB program stands for _____.

Ans: Man and Biosphere.

251. When combustion of coal takes place in insufficient air (oxygen) which gas is formed instead of carbon dioxide?

Ans: Carbon monoxide.

252. The concept of 'Biosphere Reserve' was evolved by _____.

Ans: UNESCO.

253. The three R's to save the environment are _____.

Ans: Reduce, Recycle, Reuse.

254. Water pollution can be identified by testing its _____ and _____.

Ans: PH level and Biological Oxygen Demand (BOD).

255. A large gene pool enables _____.
Ans: Conservation of natural resources.
256. Pyrethrum is used in _____.
Ans: Insecticides.
257. Biogas generation is mainly based on the principle of _____.
Ans: Fermentation.
258. Atomic energy is obtained by using ores of _____.
Ans: Uranium.
259. Red Data Book provides a list of _____.
Ans: Rare, endangered or endemic species.
260. In the atmosphere, the layer above the troposphere is _____.
Ans: Stratosphere.
261. Both power and manure are provided by _____ power plants.
Ans: Biogas plants.
262. _____ of stratosphere provides protection to our life.
Ans: Ozone.

PHYSICS

1. At which temperature, the density of water is maximum?

Ans: 4 degrees C.

2. Loudness of sound depends upon _____ of the sound wave.

Ans: Amplitude.

3. The reason behind decrease in the boiling point of water at higher altitude is:

Ans: Low atmospheric temperature.

4. The moment of inertia of a body does not depend upon its.

Ans: Angular velocity.

5. The instrument used to study the laws of vibrating string is:

Ans: Sonometer

6. Device used to measure the wavelength of X-ray?

Ans: Spectrometer.

7. Hydraulic press depends upon?

Ans: Pascal's law.

8. The Newton's first law is also referred to as:

Ans: Law of Inertia.

9. Which instrument is used to measure atmospheric humidity?

Ans: Hygrometer.

10. Ocean depth can be measured by:

Ans: Fathometer

11. Which device is used to measure the intensity of light?

Ans: Lux meter

12. Specific gravity of milk is measured by:

Ans: Lactometer.

13. A transformer works with:

Ans: Alternating current.

14. The unit of Planck's constant:

Ans: JS.

15. SI unit of electric charge is:

Ans: Coulomb.

16. Which instrument is used to convert heat into electrical energy?

Ans: Thermoelectric generator.

17. The colors of stars depend upon:

Ans: Temperature.

18. How stationary waves are formed?

Ans: Two waves of same frequency travelling in opposite direction.

19. In a filament type light bulb most of electric power consumed appears as:

Ans: Infrared rays.

20. The purpose of using diode is:

Ans: Purification.

21. What is the minimum escape velocity of rocket to be launched into the space?

Ans: 11KM/Sec.

22. Who invented Electron Microscope?

Ans: Knoll and Ruska.

23. What is the wavelength of visible spectrum?

Ans: 390 to 700 nm.

24. Decibel unit is used to measure:

Ans: Intensity of Sound.

25. Which atmospheric layer helps in radio transmission?

Ans: Ionosphere.

26. Kilowatt-hour (KWh) unit is used to measure.

Ans: Power.

27. Golden view of sea shell is due to:

Ans: Polarization.

28. The "Greenhouse effect" is mainly due to increase in atmospheric:

Ans: Carbon dioxide.

29. Which instrument is used to measure blood pressure?

Ans: Sphygmomanometer.

30. Which device is used to convert solar energy into electricity?

Ans: Solar cell.

31. According to special theory of relativity the mass of a particle increases with _____

Ans: increase in velocity with respect to an observer.

32. The field produced by current carrying conductor is:

Ans: Magnetic field.

33. Cause of rainbow formation is:

Ans: Refraction and reflection.

34. The unit used to measure the distance between stars is:

Ans: Light year.

35. Tesla is a standard unit of:

Ans: Magnetic induction.

36. Which type of mirror is used in the head light of vehicles?

Ans: Concave mirror.

37. Heavy water is used in the nuclear reactor as:

Ans: Moderator

38. Which metals are used in fuse wire?

Ans: An alloy of tin and lead.

39. Which device is used to convert sound energy into electrical energy?

Ans: Microphone.

40. The device dynamo is used to convert:

Ans: Mechanical energy to electrical energy.

41. Ball pen works on the principle of:

Ans: Surface tension.

42. Because of _____ red light is used for signals?

Ans: Long wavelength.

43. Light ray used for eliminating bacteria:

Ans: Ultraviolet radiation.

44. Which type of coal produces greatest energy?

Ans: Anthracite.

45. UV radiations of the sun do not reach the earth because of layer of:

Ans: Ozone.

46. Which metal is used for the manufacturing of heating elements used in electric iron ?

Ans: Nichrome.

47. Which device is used to measure the speed of wind?

Ans: Anemometer.

48. What is found in frequency modulation?

Ans: Fixed frequency.

49. Color of light is related to its _____.

Ans: Frequency.

50. What principle/law explains the working of hydraulic brakes in automobiles?

Ans: Pascal's law.

51. Longitudinal waves cannot travel through:

Ans: Vacuum.

52. Fourth state of matter is known as:

Ans: Plasma.

53. Cryogenics is a science dealing with:

Ans: Low temperature

54. Spectacles used for viewing 3D films have

Ans: Polaroids.

55. The unit of noise pollution (level) is:

Ans: Decibel.

56. The pitch of sound depends on its:

Ans: Frequency.

57. Solar energy is due to.

Ans: Fusion reaction.

58. A body absorbs heat most if it is:

Ans: Black and rough

59. The slope of a velocity-time graph represents:

Ans: Acceleration.

60. A rear-view mirror for driving is:

Ans: Convex.

61. The audio signals of TV are:

Ans: Frequency modulated.

62. Red is used as an emergency or danger signal as

Ans: its wavelength is longest.

63. Which color of light shows maximum deviation when passed through a prism?

Ans: Violet.

64. Pure water is a poor conductor of electricity because it is:

Ans: Feebly ionized.

65. The filament of electric bulb is made up of:

Ans: Tungsten.

67. The device which transfer the signal from low resistance region to high resistance region:

Ans: Transistor.

68. When a detergent is added to pure water, its surface tension:

Ans: Decrease.

69. 'Therm' is the unit of:

Ans: Heat.

70. Pond water appears less deep due to:

Ans: Refraction.

71. Heat from the Sun reaches the Earth by:

Ans: Radiation.

72. The mass of a star is two times the mass of the Sun. How it will come to an end:

Ans: Neutron star.

73. A boat will submerge when it displaces water equal to its own:

Ans: Weight.

74. Where are mesons found?

Ans: Cosmic rays.

75. Tungsten is used for the manufacture of the filament of an electric bulb, because:

Ans: It has a very high melting point

76. The term 'Isoneph' indicates the lines of equal.

Ans: Cloudiness.

77. The period of revolution of a geostationary satellite is:

Ans: 24 hrs.

78. The time period of second's pendulum is:

Ans: 2.

79. Lens is made up of:

Ans: Flint glass.

80. The head mirror used by ENT doctors is

Ans: Concave.

81. The word 'insolation' means:

Ans: Incoming solar radiation.

82. A NOT gate can be implemented by:

Ans: A single transistor.

83. True or False: The earth is a bad absorber and bad radiator of heat.

Ans: True

84. A light year is a unit of

Ans: Distance.

85. Persons suffering from myopia are advised to use.

Ans: Concave lens.

86. The device used for locating submerged objects under sea is.

Ans: Sonar.

87. A device which is used to limit the current in an electrical circuit is called a

Ans: Fuse.

88. A transformer:

Ans: is used to decrease or increase AC voltage.

89. Eclipses occur due to which optical phenomena?

Ans: Reflection.

90. The material used in the fabrication of a transistor is.

Ans: Silicon.

91. For a person having hyper-metropia, the near point is:

Ans: 50cm.

92. Angle of friction and angle of repose are.

Ans: Equal to each other.

93. Intensity of gravitational field of earth is maximum at:

Ans: Poles.

94. The sound production by a bat is:

Ans: Ultrasonic.

95. When a person sitting on a swing stands up the swing, the frequency of oscillation.

Ans: Increases.

96. Forged documents are detected by:

Ans: Ultraviolet rays.

97. When light passes from air to glass its speed:

Ans: Decreases.

98. A green leaf when seen in red light would appear to be:

Ans: Yellow.

99. The wave theory of light cannot explain the phenomenon of

Ans: Photoelectric effect.

100. 1 Horse power equals:

Ans: 736 watt.

101. Rate of change of displacement is called:

Ans: Velocity.

102. Acceleration is a vector quantity, which indicates that, its value:

Ans: Can be positive, negative, zero.

103. Formula to find the average velocity of a body is given by:

Ans: $V_{av} = (u + v)/2$.

104. An example of a body moving with constant speed but still accelerating is:

Ans: A body moving with constant speed in a circular path.

105. The acceleration of a body from a velocity –time graph is.

Ans: Equal to the slope of the graph.

106. Distance covered by a body from velocity-time graph is:

Ans: Area under the graph.

107. Inertia is a measure of:

Ans: Mass.

108. Rocket works on the principle of conservation of.

Ans: Momentum.

109. A passenger in a moving train tosses a coin which falls.

Ans: Behind him.

110. A bullet of mass 20gm is fired from a gun of mass 8kg with a velocity of 400 m/s, calculate the recoil velocity of gun.

Ans: -1m/s.

111. Type of inertia that tends to resist the change in case of an “Athlete often jumps before taking a long jump “.

Ans: Inertia of motion.

112. Qualitative definition of Force is given by.

Ans: Newton’s first law of motion.

113. The action and reaction forces referred to in the third law.

Ans: Must act on different objects.

114. An object will continue to accelerate until the.

Ans: Resultant force on it is zero.

115. The value of acceleration due to gravity of the surface of the earth is.

Ans: 9.8 m/s^2 .

116. The value of acceleration due to gravity at the poles.

Ans: Is more than at the equator.

117. Weight of an object on the surface of the moon is.

Ans: $1/6$ that on the surface of the earth.

118. The time of ascent when measured from the point of projection of a body projected upwards, the.

Ans: Time of ascent=Time of descent.

119. The force which keeps the body to move in circular motion when accelerated is.

Ans: Centripetal force.

120. The force acting on an object perpendicular to the surface is called.

Ans: Thrust.

121. The weight of an object is:

Ans: Greater on earth and lesser on moon.

122. Work done by a body from Force-distance curve is.

Ans: Area under the curve.

123. A stone rubbed on a rough surface and placed on the skin will show heating sensation, because.

Ans: Friction causes heat.

124. On a rough surface a mass is (a) pulled,(b) pushed by a force acting at an angle with the surface.

Ans: Pulling is easier.

125. When a spring is compressed work is done on it. Its elastic potential energy.

Ans: Decreases.

126. When force acts in opposite direction the work done is.

Ans: Negative.

127. When a body falls freely towards the earth then the total energy.

Ans: Remains constant.

128. Sound waves are.

Ans: Longitudinal in nature.

129. SI unit of frequency is.

Ans: Hertz.

130. Pitch of the wave is measured in terms of.

Ans: Frequency of the wave.

131. Speed of sound in vacuum is.

Ans: 340 m/s.

132. The time period of a simple pendulum in a spacecraft orbiting the earth is.

Ans: Infinity.

133. The characteristic of sound which enables us to distinguish one sound from another having the same pitch and loudness.

Ans: Timber.

134. In gases a sound wave is.

Ans: Both Transverse and Longitudinal.

135. The resultant of balanced forces is _____

Ans: Equal to zero.

136. The physical quantity, which is the measure of inertia, is _____

Ans: Mass.

137. The sparks produced during sharpening of a knife against a grinding wheel leaves the rim of the wheel tangentially. This is due to _____

Ans: Inertia of direction.

138. When a force of 1N acts on a mass of 1kg that is free to move, the object moves with.

Ans: an acceleration of 1 m/s^2

139. What is the force acting on an object of mass 10 kg moving with a uniform velocity of 10 m/s?

Ans: 0.

140. 1 newton = _____.

Ans: 1 kgm/s^2

141. The physical quantity, which is equal to change in momentum, is.

Ans: Impulse.

142. The two factors on which the momentum of a body depends are _____ and _____ .

Ans: Mass, Velocity.

143. The resultant of action and reaction forces is _____.

Ans: Greater than zero.

144. Coin placed in a bowl when seen from a place just disappears. When water is poured into the bowl without disturbing the coin, the coin

Ans: Becomes visible again.

145. Nature of the image formed by a convex mirror is.

Ans: Virtual, erect, and diminished.

146. The power of a lens is -3.5D. The lens is

Ans: concave.

147. Formula to find the refractive index of a medium is

Ans: $n = \frac{\text{speed of light in the air}}{\text{speed of light in the medium}}$.

148. In case of refraction through a glass slab

Ans: Incident ray is parallel to the emergent ray.

149. Mirror that can be chosen to view a tall building in a small mirror is

Ans: Convex mirror

150. Mirror formula is

Ans: $1/v + 1/u = 1/f$

151. The mirror used by ENT specialists is

Ans: Concave mirror

152. A student obtained a blurred image of an illuminated distant tower on a screen by using a convex lens

Ans: Away from the screen

153 An object AB is placed in front of a convex Lens at its principal focus the image will be formed at _____.

Ans: Infinity

154 When an object moves closer to a concave lens, the Image formed by it shifts

Ans: Away from the lens

155 When a ray of light passes from a denser medium to a rarer medium which angle is greater

Ans: Angle of refraction

156. 30 electrons are flowing through a electric wire in a time of 3sec. Then the amount of current flowing through the wire is

Ans: $1.6 \times 10^{-18} \text{A}$

157. A current of 0.5A is drawn by a filament of an electric bulb for 10 minutes. The amount of electric charge flowing through the bulb is

Ans: 300C

158. The resistance of the wire when the length of the wire increases two times

Ans: Becomes 4 times

159. Resistance of the wire is given by

Ans: $R = V/I$.

160. The resultant resistance when three resistances 2ohms, 4ohms, 5ohms, when connected in

series are

Ans: 11ohms

161. Potential difference in a circuit in which components are connected in series

Ans: Gets divided across each component

162. Electric fuse is connected with:

Ans: parallel to the line wire

163. To determine the equivalent resistance of two resistors, when connected in series, the correct way of connecting ammeter and voltmeter in the circuit is

Ans: Ammeter in series and voltmeter in parallel

164. In a voltmeter there are 20 divisions between 0 to 0.5 the least count of voltmeter is

Ans: 0.025.

165. SI unit of magnetic field strength is

Ans: Tesla

166. Inside the magnet the field lines run

Ans: From south to north

167. Strength of the magnetic field at a point in the space surrounding the magnet is measured by

Ans: The number of lines crossing a given point

168. The magnetic field inside the solenoid is

Ans: same at all points

169. At the time of short circuit, the current in the circuit _____.

Ans: Increases heavily

170. Device used to test whether the current is flowing in a conductor or not is

Ans: Galvanometer

171. The process of Inducing current in a coil of wire by placing it in a region of changing magnetic field is

Ans: Electromagnetic induction

172. The frequency of power supply used in India is

Ans: 50Hz

173. Which of the following property of proton will change while it moves freely in a magnetic field?

Ans: Velocity and momentum

174. The magnetic field lines inside a solenoid is in the form of :

Ans: parallel straight lines

175. In case of Thermal power plant

Ans: Heat energy is converted into electrical energy

176. Tehri Dam is constructed on the river

Ans: Ganga

177. The largest wind energy farm is established in

Ans: Kanyakumari

178. The value of solar constant is

Ans: 1.4kW/m^2

179. The device which converts solar energy into electricity is

Ans: Solar cell

180. More amount of heat energy can be produced in a solar cooker by using

Ans: A concave mirror

181. The working of atom bomb is based on the principle of

Ans: Release of energy in Nuclear fission

182. The energy from the hot water springs of the underground used to produce electrical energy that is Geo-thermal energy is operational in

Ans: New Zealand

183. What is the ultimate source of energy?

Ans: Sun.

184. Tidal energy is harnessed by constructing

Ans: Dam.

185. The energy possessed by huge waves needed to generate electricity is:

Ans: Kinetic energy.

186. The most common material used for making solar cell is

Ans: Silicon

187. In alpha decay (α -decay) proton number of parent nucleus :

Ans: Decreases by 2

188. Times a proton is heavier than an electron is

Ans: 1836

189. In fission, mass of products is

Ans: less than original nucleus

190. Phenomenon in which radiations split matter in to ions is called

Ans: Ionization

191. Compound containing some amount of radioisotope is

Ans: Tracer.

192. Isotopes have same number of protons but different number of

Ans: neutrons

193. In beta decay nucleon number :

Ans: remains unchanged

194. Nucleons are collection of :

Ans: protons and neutrons

195. Release of energy from sun is due to

Ans: nuclear fusion

197. Age of fossil when C-14: C-12 in bone is one fourth of ratio in bone of living animal and half-life of C-14 is 5732 years is

Ans: 11460 years.

198. During second half-life original material is decayed :

Ans: Three quarter

199. Radiation emitted from uranium salt has ability to

Ans: Ionize the gas

200. Nuclei bombarded with protons, neutron or alpha particles are changed to

Ans: Radioisotopes

201. Alpha (α) particles are helium (He) nucleus with a charge of

Ans: $2e$.

202. Radiation that causes redness and sores on skin is

Ans: Beta and gamma.

201. Mass doesn't stop at mean position due to

Ans: Inertia

202. In SHM of a simple pendulum, component of weight which is directed towards mean position is

Ans: $mg \sin\theta$

203. Expression for Hooke's law is

Ans: $F = -kx$

204. If waves are reflected back in first medium after falling on second medium then angle of reflection and angle of incidence are

Ans: equal

205. If time period of simple pendulum is 2 s then its length is

Ans: 1.02m.

206. Characteristic of wave independent of others is :

Ans: Amplitude

207. If length of simple pendulum is doubled then its time period will be

Ans: $2.8\pi\sqrt{l/g}$

208. If mass of bob is increased 3 times then its time period

Ans: remains same

209. Maximum displacement of a body from its mean position is

Ans: amplitude

210. In vacuum, all electromagnetic waves have same :

Ans: Speed.

211. Motion of particles about their mean position in regular intervals of time is called

Ans: Wave

212. Velocity of bob in SHM becomes zero at

Ans: Extreme position

213. Velocity of wave with frequency 4Hz and wavelength 0.4m is

Ans: 1.6ms^{-1}

214. Number of vibrations of a body in one sec is called

Ans: Frequency

215. Waves which doesn't require any medium for their propagation are

Ans: Electromagnetic

216. Restoring force pushes or pulls oscillatory object

Ans: Towards mean position

217. If potential energies and kinetic energies are equal then displacement of an object in SHM is

Ans: 0

218. Kinetic energy of mass attached to spring at extreme position is

Ans: Zero

219. Potential energy of mass attached to spring at extreme position is

Ans: Maximum.

220. Least count of digital stopwatch is

Ans: 0.01 s

221. Least count of Vernier calipers is

Ans: 0.01 cm

222. Least count of physical balance is

Ans: 0.01 g

223. Least count of ruler is

Ans: 1 mm.

224. Flying speed of a falcon is

Ans: 200 kmh^{-1}

225. Velocity with which a paratrooper comes to ground is called.

Ans: Translational motion.

7. Graphite is a _____.

- a) Molecular solid
- b) covalent solid
- c) Ionic solid
- d) metallic solid

Ans: b

8. Due to Frenkel defect, the density of the ionic solid

- a) increases
- b) decreases
- c) does not change
- d) first increases, then decreases

Ans: c

9. The number of atoms per unit cell in a bcc lattice is

- a) 1
- b) 2
- c) 3
- d) 4

Ans: b

10. The total number of three dimensional primitive unit cells in crystals is equal to

- a) 7
- b) 14
- c) 4
- d) 10

Ans: a

11. Solids which do not show the same physical properties in different directions are called

- a) Pseudo solids
- b) isotropic solids
- c) Polymorphic solids
- d) anisotropic solids

Ans: d

12. The one which is not an ionic solid

- a) Rock salt
- b) zinc blend
- c) Fluorite
- d) quartz

Ans: d

13. Giant molecule among the following is

- a) ice
- b) sodium chloride
- c) Rhombic Sulphur
- d) graphite

Ans: d

14. If a liquid is dispersed in solid medium, this is called

- a) Sol
- b) emulsion
- c) Liquid aerosol
- d) gel

Ans: d

15. Which one of the following impurities present in colloidal solution cannot be removed by electro dialysis?

- a) Sodium
- b) potassium sulphate
- c) urea
- d) calcium chloride

Ans: b

16. The basic principle of Cottrell's precipitator is

- a) Le-Chatelier's principle
- b) Peptisation
- c) Neutralization of charge of colloidal particles
- d) Scattering of light

Ans: c

17. Which of the following is not correct?

- a) milk is a naturally occurring emulsion
- b) Gold sol is a lyophilic sol
- c) Physical adsorption decreases with rise in temperature
- d) Chemical adsorption is unilayered

Ans: b

18. The disperse phase, dispersion medium and nature of colloidal solution (lyophilic or lyophobic) of 'gold sol' respectively are

- a) solid, solid, lyophobic
- b) Liquid, liquid, lyophobic
- c) Solid, liquid, lyophobic
- d) Solid, liquid, lyophilic

Ans: c

19. Which one of the following methods, does not give the sol?

- a) Electrophoresis b) peptization
c) Electro dispersion d) solvent exchange

Ans: a

20. Which of the following is not an emulsion?

- a) Butter b) aerosol
c) milk d) clouds

Ans: d

21. A colloidal system in which gas bubbles are dispersed in a liquid is known as

- a) Foam b) aerosol
c) Sol d) emulsion

Ans: a

22. The extent of adsorption of a gas on a solid depends on

- a) Nature of the gas b) pressure of the gas
c) Temperature d) all of these

Ans: d

23. Which of the following can act as adsorbent?

- a) Metals b) silica gel
c) Colloids d) all of these

Ans: d

24. Dyeing of fiber involves the process of

- a) adsorption b) absorption
c) Sorption d) all of these

Ans: d

25. In adsorption of oxalic acid on charcoal is called as

- a) Adsorbent b) adsorbate
c) Adsorbed d) none of these

Ans: a

26. In adsorption of acetic acid on charcoal, acetic acid is called

- a) Adsorption
- b) absorber
- c) Adsorbent
- d) adsorbate

Ans: d

27. If the concentration of the adsorbate in the bulk is more than that in the surface, it is called

- a) +ve adsorption
- b) -ve adsorption
- c) Desorption
- d) none

Ans: b

28. Which statement is correct?

- a) Physical adsorption is multilayer and non-specific
- b) Chemical adsorption is unilayer
- c) Chemical adsorption is stronger than physical adsorption
- d) all of these

Ans: d

29. A catalyst in the finely divided form is most effective because

- a) Less surface area available
- b) More active centers are formed
- c) More energy get stored in catalyst
- d) None of the above

Ans: b

30. Which is a poison for Pd in Lindlar's catalyst?

- a) H_2SO_4
- b) CaCO_3
- c) Ni
- d) all of these

Ans: b

31. Negative catalyst or inhibitor for the oxidation of chloroform is

- a) H_2O
- b) $\text{C}_2\text{H}_5\text{OH}$
- c) Glycerol
- d) H_2SO_4

Ans: b

32. A naturally occurring substance from which a metal can be profitably extracted is known as

- a) Mineral
- b) gangue
- c) ore
- d) flux

Ans: c

33. Iron is extracted from

- a) Magnesite
- b) magnetite
- c) iron pyrites
- d) corrosive

Ans: c

34. Argentite is a mineral of

- a) Au
- b) Cu
- c) Mn
- d) Ag

Ans: d

35. Concentration of ores is done by

- a) Hydraulic washing
- b) Electromagnetic separation
- c) Froth floatation
- d) Leaching
- e) all of these

Ans: e)

36. An ore of tin containing FeCr_2O_4 is concentrated by

- a) Magnetic separation
- b) Froth floatation
- c) Electrostatic method
- d) Gravity separation

Ans: a

37. The ores that are concentrated by floatation method are

- a) Carbonates
- b) sulphides

Ans: b

43. Which one of the following metals is extracted by thermal reduction process?

- a) Copper
- b) Iron
- c) Aluminum
- d) Magnesium

Ans: b

44. Neutral refractory material used in furnaces is

- a) Graphite
- b) CaO
- c) SiO₂
- d) MgO

Ans: a

45. In the manufacture of iron from hematite, limestone is added to act as

- a) an oxidizing agent
- b) a reducing agent
- c) flux
- d) slag

Ans: c

46. In blast furnace iron oxide is reduced mainly by

- a) Carbon
- b) silica
- c) Carbon monoxide
- d) lime stone

Ans: c

47. The flux usually used to remove acidic impurities in metallurgical processes is

- a) Silica
- b) lime stone
- c) Sodium chloride
- d) potassium chloride

Ans: b

48. Which of the following metal is obtained by self-reduction?

- a) Silver
- b) copper
- c) nickel
- d) lithium

Ans: b

49. Blast furnace is usually employed for carrying out the metallurgical process known as

- a) Smelting
- b) cupellation
- c) Roasting
- d) calcination

Ans: a

50. Gold is extracted using

- a) Amalgamation process
- b) Carbon reduction process
- c) Oxidation process
- d) Electrolytic process

Ans: a

51. The approximate amount of carbon (in kg) which is burnt in the anode for each kg of aluminum produced, in the Hall-Heroult process is

- a) 0.5
- b) 1.5
- c) 2.0
- d) 2.5

Ans: a

52. In electro-refining the impure metal is made

- a) Anode
- b) cathode
- c) Electrolyte
- d) all

Ans: a

53. Nickel is refined by the thermal decomposition of its

- a) Carbonate
- b) oxide
- c) Carbonyl
- d) supplied

Ans: c

54. The distillation method is used for the purification of

- a) Zinc
- b) mercury
- c) Iron
- d) both a and b

Ans: b

55. Low melting metal like tin can be made to flow on a sloping surface and can be separated. This method is known as

- a) Distillation
- b) liquation
- c) vapor phase refining
- d) zone refining

Ans: b

56. Vapor phase refining includes

- a) Van Arkel process
- b) Mond's process
- c) Both a and b
- d) only a

Ans: c

57. Chrome steel is generally used for making

- a) Cutting tools
- b) crushing machines
- c) Utensils
- d) both a and b

Ans: d

58. The purest form of iron is

- a) Wrought iron
- b) spongy iron
- c) Pig iron
- d) steel

Ans: b

59. Baeyer's process is used for purification of bauxite containing _____ as impurity

- a) Silica
- b) rutile
- c) Fe_2O_3
- d) fluoride

Ans: c

60. Copper used in several alloys, the correct combination/s

- a) Brass with zinc
- b) Bronze with tin
- c) Coinage alloy with nickel
- d) all of the above

Ans: d

61. Copper metal is refined by

- a) Liquation
- b) cupellation
- c) Bessemerisation
- d) poling

Ans: d

62. The phenomenon of removing layers of basic oxides from metal surfaces before electroplating is called

- a) Galvanizing
- b) anodizing
- c) Pickling
- d) poling

Ans: c

63 Thermodynamically most stable state of carbon is?

- a) Diamond
- b) charcoal
- c) Graphite
- d) all

Ans: c

64. Bleaching action of chlorine is due to

- a) Oxidation
- b) reduction
- c) Disproportionation
- d) decomposition
- e) Rearrangement

Ans: a

65. Which is thermally most stable?

- a) IF
- b) BrI
- c) ClF
- d) ICl
- e) IBr

Ans: a

66. Inter-Halogen compounds :

- a) are less reactive than halogens
- b) are as reactive as halogens
- c) have negligible reactivity
- d) more reactive than halogen(except fluorine)

Ans: d

67. Poisonous gas obtained from chlorine

- a) phosgene
- b) mustard gas
- c) tear gas
- d) all

Ans: d

68. Noble gases associated with minerals of radioactive origin are

- a) He and Ar
- b) Ar and Ne
- c) He and Ne
- d) Ar and Xe
- e) Kr and Ar

Ans: c

69. Which can diffuse through glass, rubber and plastics?

- a) He
- b) Ne
- c) Kr
- d) Ar
- e) Xe

Ans: a

70. Which will not form compounds?

- a) He
- b) Ne
- c) Ar
- d) all
- e) a and b

Ans: d

71. Use of helium

- a) in nuclear reactor
- b) as cryogenic agent
- c) for meteorological observation
- d) to sustain powerful superconducting magnet
- e) all

Ans: e)

72. Helium is used in diving apparatus because of its

- a) very low solubility in blood
- b) high solubility in blood
- c) low density
- d) a and c

Ans: a

73. Air sensitive substances are handled in an atmosphere of

- a) He
- b) Ne
- c) Ar
- d) Kr

Ans: c

74. In the clathrates of xenon with water the nature of bonding between xenon and water molecule is

- a) Covalent
- b) hydrogen bonding
- c) Co-ordinate
- d) dipole induced dipole interaction

Ans: d

75. In the solid state, argon atoms are held by

- a) ionic bonds
- b) covalent bonds
- c) hydrogen bonds
- d) Van der Waals forces

Ans: d

76. When conc.H₂SO₄ comes in contact with sugar, the sugar becomes black due to?

- a) hydrolysis
- b) hydration
- c) de-colorization
- d) dehydration

Ans: d

77. Aqueous solution of ammonium chloride reacts with sodium nitrate to form

- a) NaCl
- b) N₂
- c) Cl₂
- d) a and b
- e) a and c

Ans: d

78. The characteristic part of oxoacids of phosphorous responsible for the reducing properties

- a) O-H bond
- b) P-O bond
- c) P-H bond
- d) P=O
- e) O=O

Ans: c

79. The hydrolysis product of BrF_5

- a) HF
- b) HOBr
- c) HBrO_3
- d) a and b
- e) a and c

Ans: d

80. Hydrolysis of XeF_4 gives

- a) XeO_3
- b) XeO_2
- c) XeOF_2
- d) Xe
- e) Both a and d

Ans: e)

81. Cryogenic reactions are conducted in presence of

- a) liquid NH_3
- b) ice
- c) liquid helium
- d) dry ice

Ans: c

82. The number of molecules of water needed to convert one molecule of P_2O_5 into orthophosphoric acid is

- a) 2
- b) 3
- c) 3
- d) 4

Ans: b

83. SO_2 is used

- a) for refining of petroleum
- b) for bleaching of wool
- c) as an antichlor
- d) all the above
- e) b and c

Ans: a

84. Transition elements belong to

- a) s-block
- b) p-block

- b) increases
- c) first increases, then decreases
- d) first decreases, then increases

Ans: a

105. The lanthanide contraction relates to

- a) the reduction in number of valence electrons
- b) decrease in ionic radii
- c) decrease in densities
- d) all the above

Ans: b

106. Across the lanthanide series, the basicity of the lanthanide hydroxides

- a) increases
- b) decreases
- c) increases then decreases
- d) first decreases then increases

Ans: b

107. Which of the following element involves gradual filling of 5f level?

- a) lanthanides
- b) actinides
- c) transition metals
- d) coinage metal

Ans: b

108. The electronic configuration of actinides cannot be assigned with high degree of certainty because of

- a) small energy difference between 5f and 6d levels
- b) overlapping of inner orbitals
- c) free movement of electrons over all the orbitals
- d) none of these

Ans: a

109. Transuranic elements are the elements of actinide series, which follows

- c) Sandmeyer reaction d) Gatterman reaction
e) Wurtz reaction

Ans: a

128. In one step ethane can be obtained from

- a) Ethanol b) ethanol
c) Chloroform d) ethyl bromide

Ans: c

129. The general molecular formula which represents the homologous series of alkanol is

- a) $C_nH_{2n+2}O$ b) $C_nH_{2n}O_2$
c) $C_nH_{2n}O$ d) $C_nH_{2n+1}O$

Ans: a

130. Benzyl amine reacts with nitrous acid to form

- a) Azo benzene b) benzene
c) Benzyl alcohol d) phenol

Ans: c

131. Phenol reacts with bromine in CS_2 to give

- a) o-bromophenol b) m-bromophenol
c) o- and p-bromophenol d) 2, 4, 6-tribromophenol

Ans: c

132. The reaction of Lucas reagent is fast with

- a) Ethanol b) methanol
c) 2-propanol d) 2-methyl-2-propanol

Ans: d

133. When ethanol is heated with HI a red phosphorous, it gives

- a) Ethyl iodide b) ethane
c) Ethylene d) ether

Ans: b

134. Products obtained when HI reacts with isopropyl methyl ether at 373K are

- a) Isopropyl iodide and methyl alcohol
- b) Isopropyl alcohol and methyl iodide
- c) Isopropyl iodide and water
- d) Methyl iodide and water

Ans: b

135. An ether is more volatile than alcohol having the same molecular formula. This is due to

- a) Intermolecular hydrogen bonding in alcohols
- b) Dipolar character of ethers
- c) Alcohols having resonance structures
- d) Intermolecular hydrogen bonding in ethers

Ans: a

136. When a mixture of calcium benzoate and calcium acetate is dry distilled, the resulting compound is

- a) acetophenone
- b) benzaldehyde
- c) benzophenone
- d) acetaldehyde

Ans: a

137. The formation of cyanohydrins from acetone is which type of reaction

- a) Electrophilic substitution
- b) Electrophilic addition
- c) Nucleophilic addition
- d) Nucleophilic substitution

Ans: c

138. Which of the following organic compounds answers both iodoform test and Fehling's test?

- a) Ethanol
- b) Propanone
- c) Ethanol
- d) Methanol

Ans: a

139. The chemical that undergoes self-oxidation and self-reduction in the same reaction

- a) Benzyl alcohol
- b) acetone

- c) Formaldehyde d) acetic acid

Ans: c

140. The compound that undergo Cannizzaro reaction is

- a) Formaldehyde b) acetaldehyde
c) Benzaldehyde d) trimethyl acetaldehyde

Ans: b

141. Methyl ketones are characterized through

- a) Tollen's reagent b) iodoform test
c) Schiff's reagent d) Fehling's solution

Ans: b

142. A drug classification not based on pharmacological effect is

- a) analgesics b) antipyretics
c) antiseptics d) antihistamines

Ans: d

143. Drugs that bind to the receptor site and inhibit its natural function are called

- a) agonists b) antagonists
c) messenger inhibitors d) receptor poisons

Ans: b

145. Aspirin is effective against

- a) fever b) body pain
c) the onset of heart attacks d) all of these

Ans: d

145. Diacetyl morphine is known as

- a) codeine b) thebaine
c) heroin d) quinine

Ans: c

146. Substances used for the treatment of mental diseases are known as

- a) anti-inflammatory drugs

- b) tranquilizers
- c) psychedelic drugs
- d) hallucinogens

Ans: b

147. A narcotic drug often used in cough syrup preparations is

- a) morphine
- b) quinine
- c) codeine
- d) reserpine

Ans: c

148. Typhoid is best treated with the antibiotic

- a) penicillin
- b) phenacetin
- c) chloromycetin
- d) streptomycin

Ans: c

149. Transparent soaps are made by dissolving soap in _____ as solvent and the evaporating off the solvent

- a) propanol
- b) water
- c) ethanol
- d) isobutanol

Ans: c

150. The number of moles of solute present in 1kg of a solvent is called its

- a) molality
- b) molarity
- c) normality
- d) formality

Ans: a

151. The most electronegative element among the following is

- a) sodium
- b) fluorine
- c) bromine
- d) oxygen

Ans: b

152. The metal used to recover copper from a solution of copper sulphate is

- a) Na
- b) Hg
- c) Ag
- d) Fe

Ans: d

153. The metallurgical process in which a metal is obtained in a fused state is called

- a) smelting
- b) roasting
- c) calcinations
- d) froth floatation

Ans: a

154. The law which states that the amount of gas dissolved in a liquid is proportional to its partial pressure is

- a) Dalton's law
- b) Gay Lussac's law
- c) Henry's law
- d) Raoult's law

Ans: c

155. The gas present in the stratosphere which filters out some of the sun's ultra violet light and provides an effective shield against radiation damage to living things is

- a) He
- b) Ozone
- c) O₂
- d) Methane

Ans: b

156. The most commonly used bleaching agent is

- a) alcohol
- b) carbon dioxide
- c) chlorine
- d) sodium chloride

Ans: c

157. The nucleus of a hydrogen atom consists of

- a) 1 proton only
- b) 1 proton + 2 neutrons
- c) 1 neutron only
- d) 1 electron only

Ans: a

158. The heat required to raise the temperature of a body by 1K is called

- a) specific heat
- b) thermal capacity
- c) water equivalent
- d) none of the above

Ans: b

159. The nuclear particles which are assumed to hold the nucleons together are

- a) 0.5 mole b) 0.4 mole
c) 0.2 mole d) 0.25 mole

Ans: a

167. The monomer of polythene is

- a) vinyl chloride b) ethylene
c) ethyl alcohol d) none of the above

Ans: b

168. The luster of a metal is due to its

- a) high density b) high polishing
c) chemical inertness d) presence of free electrons

Ans: d

169. The most malleable metal is

- a) Platinum b) Silver
c) iron d) gold

Ans: d

170. The oil used in the froth floatation process is

- a) coconut oil b) olive oil
c) kerosene oil d) pine oil

Ans: d

171. The gas used in the manufacture of Vanaspati from vegetable oil is

- a) hydrogen b) oxygen
c) nitrogen d) carbon dioxide

Ans: a

172. The items amenable to detection by soft x-rays are

- a) contrabands b) lead in bullets
c) narcotics d) genuine coins from counterfeit coins

Ans: d

173. The material which can be deformed permanently by heat and pressure is called a

- a) thermoplastic b) thermoset
c) chemical compound d) polymer

Ans: b

174. In 2-methyl-3-phenyl prop-2-en-ol, the $-OH$ group is attached to

- a) aryl carbon b) vinyl carbon
c) allylic carbon d) benzylic carbon

Ans: c

174. The carbon – oxygen bond length is least in

- A) H_3C-O-H b) C_6H_5-OH
c) CH_3-O-CH_3 d) $C_6H_5-CH_2-OH$

Ans: b

175. Which of the following is obtained as a useful by-product in the manufacture of phenol from cumene?

- a) ethanol b) ethanol
c) propanal d) propanone
e) propan-2-ol

Ans: d

176. The reaction between C_2H_5MgBr and a carbonyl compound A produces an alcohol which does not give a turbidity with Lucas reagent at room temperature. A is

- a) ethanol b) methanol
c) propanone d) benzaldehyde
e) acetophenone

Ans: b

177. During oxidation of a primary alcohol to aldehyde, which of the following takes place?

- 1) cleavage of C-H bond
- 2) cleavage of O-H bond
- 3) cleavage of C-O bond
- 4) formation of C=O bond

- a) 1 and 3
- b) 1 and 4
- c) 2 and 4
- d) 1, 2 and 4
- e) 2, 3 and 4

Ans: d

178. The suitable reagent to convert a primary alcohol to corresponding aldehyde is

- a) KMnO_4
- b) $\text{K}_2\text{Cr}_2\text{O}_7/\text{H}_2\text{SO}_4$
- c) P.C.C
- d) con. HNO_3
- e) $\text{conc. H}_2\text{SO}_4$

Ans: c

179. In Kolbe's reaction, phenol is converted to phenoxide ion before treating with CO_2 because

- 1) $\text{C}_6\text{H}_5\text{O}^-$, more reactive than phenol
- 2) $\text{C}_6\text{H}_5\text{O}^-$, less reactive than phenol
- 3) CO_2 is a strong electrophile
- 4) CO_2 is a weak electrophile
- 5) CO_2 is acidic

- a) 1 and 3
- b) 1 and 4
- c) 2 and 3
- d) 2 and 4
- e) 5 only

Ans: b

180. The enzyme which converts to alcohol is

- a) carboxy peptidase
- b) invertase
- c) zymase
- d) maltase
- e) diastase

Ans: c

181. Consider 3 alcohols A,B and C.A and B gives iodoform reaction while A and C gives an aldehyde when passed over hot Cu .A,B and C are respectively

- a) n-propanol,ethanol,isopropanol
- b) isopropanol,n-propanol,ethanol
- c) n-propanol,isopropanol,ethanol
- d) ethanol,isopropanol,n-propanol
- e) ethanol,n-propanol,isopropanol

Ans: d

182. Which is not correct regarding phenol?

- A) it is a weak acid
- b) gives H_2 with metallic sodium
- c) soluble in aqueous Na_2CO_3
- d) inhalogenations,no Lewis acid is required
- e) gives white precipitate with Br_2 in polar solvent

Ans: c

183. Which of the following cannot be used to distinguish phenol from ethanol?

- a) $FeCl_3$
- b) Lucas reagent
- c) $NaOH$
- d) $NaOH/I_2$
- e) metallic Na

Ans: e)

184. Products obtained when benzyl phenyl ether is heated with HI in the molar ratio 1:1 are

- (1)phenol
 - (2)benzyl alcohol
 - (3)benzyl iodide
 - (4)iodobenzene
- a)1 and 2
 - b)1 and 3
 - c)2 and 3

d) 2 and 4

e) 1 and 4

Ans: b

185. Which of the following alcohols gives the best yield of di-alkyl ether on being heated with H_2SO_4 ?

a) 2-pentanol b) cyclopentanol

c) 2-methyl-2-butanol d) 2-propanol

e) 1-pentanol

Ans: e)

186. Phenol can be converted to o-hydroxybenzaldehyde by treating with

a) NaOH, CO_2 b) NaOH, $CHCl_3$

c) NaOH, CCl_4 d) Zn dust

e) $Na_2Cr_2O_7$, H_2SO_4

Ans: b

187. Reaction between butanone and methyl magnesium bromide followed by hydrolysis gives

a) butanol-2 b) pentanol-2

c) 2,2-dimethyl butanol-1 d) 3-methyl butanol-2

e) 2-methyl butanol -1

Ans: e)

188. Which of the following is not cleaved by HI?

a) dicyclohexyl ether b) phenetole

c) ditertiarybutyl ether d) diphenyl ether

e) diethyl ether

Ans: d

189. Williamson's synthesis is an example of

a) electrophilic addition b) electrophilic substitution

c) nucleophilic addition d) nucleophilic substitution

e) free radical substitution

Ans: d

190. Which is not a polymer?

- a) Sucrose
- b) Enzyme
- c) Starch
- d) Teflon

Ans: a

191. Which is not a macromolecule?

- a) DNA
- b) Starch
- c) Palmitate
- d) Insulin

Ans: c

192. Which polymers occur naturally?

- a) Starch and Nylon
- b) Starch and Cellulose
- c) Proteins and Nylon
- d) Proteins and PVC

Ans: b

193. Which of the following is a semi-synthetic polymer?

- a) Starch
- b) Natural rubber
- c) Cellulose acetate
- d) Polystyrene

Ans: c

194. Rayon is

- a) Natural silk
- b) Artificial silk
- c) Natural rubber
- d) Synthetic plastic

Ans: b

195. Natural silk is a

- a) Polypeptide
- b) Polysaccharide
- c) Polyvinyl chloride
- d) Poly acrylonitrile

Ans: a

196. Which of the following is a polyamide?

- a) Teflon
- b) Nylon-6,6
- c) Terylene
- d) Bakelite

Ans: a

204. Which of the following polymers can be used for lubrication and as an insulator?

- a) SBR
- b) PVC
- c) PTFE
- d) PAN

Ans: c

205. Soft drinks and baby feeding bottles are generally made up of

- a) Polyester
- b) polyurethane
- c) Polyamide
- d) polystyrene

Ans: d

206. Bakelite is a polymer of

- a) benzaldehyde and phenol
- b) formaldehyde and phenol
- c) formaldehyde and benzyl alcohol
- d) acetaldehyde and phenol

Ans: b

207. The monomer/s of nylon 6 is/are

- a) caprolactam
- b) adipic acid
- c) adipic acid and phthalic acid
- d) glycine and glycerol

Ans: a

208. Which of the following is currently used as a tyre cord?

- a) terylene
- b) polypropylene
- c) Bakelite
- d) Nylon-6

Ans: d

209. Which of the following is a biodegradable polymer?

- a) Cellulose
- b) Polythene
- c) Polyvinyl chloride
- d) Nylon-6

Ans: a

210. Artificial silk is a

- a) polyester b) polyamide
c) polysaccharide d) polyethene

Ans: c

211. Thermoplastics are

- a) linear polymers
b) soften or melt on heating
c) molten polymer can be moulded in desired shape
d) All the above is correct

Ans: d

212. Which are true for elastomers?

- a) They possess elasticity
b) They possess weak intermolecular forces of attraction between polymer chains
c) Vulcanized rubber is an example of elastomer
d) all are correct

Ans: d

213. Low density polymer is prepared by

- a) Free radical polymerization
b) cationic polymerization
c) anionic polymerization
d) Ziegler-Natta polymerization

Ans: a

214. The best way to prepare polyisobutylene is

- a) coordination polymer b) free radical polymerization
c) cationic polymerization d) anionic polymerization

Ans: c

215. A polymer which is used as a suture, i.e., for stitching of wounds after operations is

- a) PHBV b) Nylon-2-Nylon-6
c) Dextron d) Dacron

Ans: c

234. Which of the following compounds will react with ethanolic KCN?

- a) Ethane b) Acetone
c) Chlorobenzene d) Benzaldehyde

Ans: d

235. Aldehydes and ketone can be distinguished by

- a) Bromoform b) Solubility in water
c) Tollen's test d) Molisch's test

Ans: c

236. Formalin is an aqueous solution of

- a) Furfural b) Fluorescein
c) Formaldehyde d) Formic acid

Ans: c

237. Which of the following will have the maximum dipole moment ?

- a) CH_3F b) CH_3Cl
c) CH_3Br d) CH_3I

Ans: b

238. Iodoethane reacts with sodium in ether, the product formed is

- a) Pentene b) Propyne
c) Butene d) Butane

Ans: d

239. Gammexane is

- a) Chlorobenzene b) Benzyl chloride
c) Bromobenzene d) Benzene hexachloride

Ans: d

240. C-X bond is strongest in :

- a) CH_3Cl
b) CH_3Br

c) CH_3F

d) CH_3I

Ans: c

241. Which of the following free radicals is the most stable?

a) Methyl

b) iso-propyl

c) Vinyl

d) Allyl

Ans: d

242. Which of the following is an electrophile?

a) H_2O

b) NH_3

c) AlCl_3

d) $\text{C}_2\text{H}_5\text{NH}_2$

Ans: d

243. The C-H bond length is maximum in

a) C_2H_2

b) C_2H_6

c) C_6H_6

d) C_2H_4

Ans: b

244. The first organic compound was synthesized in laboratory by

a) Wohler

b) Kolbe

c) Berzelius

d) Neil Bartlett

Ans: a

245. Which of the following oxides is acidic in nature?

- a) V_2O_5
- b) Mn_2O_3
- c) Cr_2O_3
- d) MnO_2

Ans: a

246. Heating mixture of Cu_2O and Cu_2S will give

- a) Cu_2SO_3
- b) $CuO + CuS$
- c) $Cu + SO_3$
- d) $Cu + SO_2$

Ans: d

247. Oxidation state of chromium in chromic acid is

- a) 0
- b) +7
- c) +3
- d) +6

Ans: d

248. Coinage metals are present in

- a) s-block
- b) d-block
- c) p-block
- d) f-block

Ans: b

249. The lanthanide contraction relates to

- a) Atomic radii
- b) Atomic as well as M^{3+} radii
- c) Valence electrons
- d) Oxidation states

Ans: b

250. Guignet's green is known as

- a) $\text{Cr}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$
- b) $\text{FeO}_3 \cdot 2\text{H}_2\text{O}$
- c) $\text{FeCO}_3 \cdot \text{Cr}_2\text{O}_3$
- d) $\text{FeO} \cdot \text{Cr}_2\text{O}_3$

Ans: a

251. A metal which does not liberate H_2 (g) from acids is

- a) Cu
- b) Fe
- c) Mn
- d) Zn

Ans: a

252. The volume strength of 1.5 NH_2O_2 solution is

- a) 4.8
- b) 5.2
- c) 8.8
- d) 8.4

Ans: d

253. Which of the following is most basic in nature?

- a) NH_3
- b) CH_3NH_2
- c) $(\text{CH}_3)_2\text{NH}$
- d) $\text{C}_6\text{H}_5\text{N}(\text{CH}_3)_2$

Ans: c

254. Hinsberg reagent is

- a) $\text{C}_6\text{H}_5\text{SO}_3\text{H}$
- b) $\text{C}_2\text{H}_5\text{NO}$



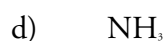
Ans: c

255. In amines, the hybridisation state of N is



Ans: c

256. Primary and secondary amines can be distinguished by



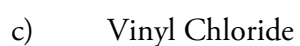
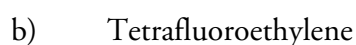
Ans: c

257. Which pair of polymers has similar properties?



Ans: b

258. Orlon is a polymer of



Ans: d

259. The element that does not exhibit positive oxidation is

- a) Cl
- b) O
- c) N
- d) F

Ans: d

260. Chlorine reacts with excess of ammonia to form

- a) NH_4Cl
- b) $\text{N}_2 + \text{HCl}$
- c) $\text{N}_2\text{NH}_4\text{Cl}$
- d) N_2NCl_3

Ans: c

261. Which of the following does not exist in free form?

- a) BF_3
- b) BCl_3
- c) BBr_3
- d) BH_3

Ans: d

262. The substance used in smoke screen is

- a) sodium chloride
- b) zinc phosphate
- c) calcium phosphide
- d) calcium phosphate

Ans: c

263. Inorganic graphite is

- a) $\text{B}_3\text{N}_3\text{H}_6$
- b) B_3N_3
- c) SiC
- d) FeCO_3

Ans: b

264. Galvanisation of iron sheets is done by

- a) Cu Plating
- b) Zn Plating
- c) Ag Plating
- d) Tin Plating

Ans: b

265. Sulphuric acid has great affinity for water because

- a) It hydrolyses the acid
- b) It decomposes the acid
- c) Acid forms hydrates with water
- d) Acid decomposes water

Ans: c

266. Which of the following elements has the highest third ionization enthalpy?

- a) Sodium
- b) Magnesium
- c) Aluminium
- d) Silicon

Ans: b

267. To which block, 106th element belongs

- a) s-block
- b) p-block
- c) d-block
- d) f-block

Ans: c

268. PtF_6 is a

- a) Good oxidizing agent
- b) good reducing agent

- c) poor oxidizing agent
- d) poor reducing agent

Ans: a

269. The collective name given to be elements of group 17 of periodic table is

- a) Chalcogens
- b) Halogens
- c) Pnicogens
- d) Ferrogens

Ans: b

270. Diborane on hydrolysis yields

- a) B_2O_3
- b) H_3BO_3
- c) HBO_2
- d) $H_3B_4O_7$

Ans: b

271. Which of the following is most soluble in water?

- a) $CaSO_4$
- b) $SrSO_4$
- c) $MgSO_4$
- d) $BaSO_4$

Ans: c

272. The carbonate that will have not decompose on heating is

- a) Na_2CO_3
- b) $CaCO_3$
- c) $BaCO_3$
- d) $SrCO_3$

Ans: a

273. Dead burnt plaster is

- a) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
- b) $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$
- c) $\text{CaSO}_4 \cdot \text{H}_2\text{O}$
- d) CaSO_4

Ans: d

274. The effective component of bleaching powder is

- a) Cl
- b) $\text{Ca}(\text{OCl})_2$
- c) O_2
- d) Cl

Ans: b

275. Cupellation is used in the metallurgy of

- a) Cu
- b) Ag
- c) Zn
- d) Al

Ans: b

276. Nickel is purified by thermal decomposition of its

- a) Hydride
- b) Chloride
- c) Azide
- d) Carbonyl

Ans: D

277. Cassiterite is an ore of

- a) Mn
- b) Ni
- c) Sb
- d) SnO_2

Ans: d

278. Which of the following is a hydrophobic sol?

- a) Starch solution
- b) Gun solution
- c) Protein solution
- d) Arsenious sulphide solution

Ans: D

279. Which of the following is less than zero during adsorption?

- a) G
- b) S
- c) H
- d) All of the above

Ans: D

280. Which one of the following is not a colloid?

- a) Milk
- b) Blood
- c) Ice-cream
- d) urea solution

Ans: D

281. Which one of the following substances gives a positively charged sol?

- a) Gold
- b) A metal sulphide
- c) Ferric hydroxide
- d) An acidic dye

Ans: c

282. Which of the following is an example of associated colloid?

- a) Polyethylene sol
- b) Rubber sol

c) PVC sol

d) Soap sol

Ans: d

283. In coagulating the colloidal solution of As_2S_3 , which has the minimum coagulating value

a) NaCl

b) KCl

c) $BaCl_2$

d) $AlCl_3$

Ans: a

284. Which of the following is not true for physisorption?

a) It is reversible

b) It occurs in the form of multimolecular layers

c) It needs activation energy

d) It increases with increase in pressure

Ans: c

285. Detergent action of soaps is due to

a) Coagulation

b) Emulsification properties

c) Ionisation

d) High molecular mass

Ans: b

286. Smoke is an example of

a) Gas dispersed in liquid

b) Gas dispersed in solid

c) Solid dispersed in gas

d) none of these

Ans: c

287. Which of the following is less than zero during absorption?

- a) G
- b) S
- c) H
- d) All of the above

Ans: d

288. The mixing of gases is generally accompanied by

- a) decrease in entropy
- b) decrease in free energy
- c) change in heat content
- d) increase in free energy

Ans: b

289. Internal energy of a given mass of an ideal depends upon

- a) Temperature
- b) Pressure
- c) Volume
- d) On all the above factors

Ans: a

290. The value of R in calorie per degree per mole is

- a) 0.0831
- b) 8.31
- c) 8.31107
- d) 1.987

Ans: D

291. In thermodynamics which one of the following is not an intensive property

- a) Pressure
- b) Density
- c) Volume
- d) Temperature

Ans: c

292. For a process to occur under adiabatic conditions

- a) $T = 0$
- b) $P = 0$
- c) $q = 0$
- d) $w = 0$

Ans: c

293. Which among the following has rate of effusion less than the moist air?

- a) He
- b) dry air
- c) NH_3
- d) heavy hydrogen

Ans: D

294. A Boyle's temperature, for a considerable range of pressure, the value of Z is

- a) $=0$
- b) >1
- c) $=1$
- d) <1

Ans: c

295. Which graph will not be straight line for ideal gas?

- a) PV vs P
- b) P/T vs T
- c) P vs T
- d) V vs T

Ans: c

296. The compressibility factor of an ideal gas is

- a) 0
- b) 1

c) 2

d) 4

Ans: b

297. A pressure of 0.101325 bar when expressed in atmospheres represents

a) 0.01 atm

b) 1 atm

c) 0.1 atm

d) 10 atm

Ans: c

298. The density of N₂ will be highest at

a) S.T.P

b) 273 K, 2atm

c) 545 K, 1 atm

d) 500 K, 1.5 atm

Ans: b

299. The one which is not present in DNA is

a) Uracil

b) thymine

c) adenine

d) guanine

Ans: a

300. The drug used for treatment of typhoid is

a) Chloromycetin

b) Novalgin

c) Paracetamol

d) Quinine

Ans: a

301. Glyptal polymer is obtained from glycerol on reacting with

- a) Malonic acid
- b) Phthalic acid
- c) Maleic acid
- d) Acetic acid

Ans: b

302. Which of the following have 1, 2-ethanediol as starting material?

- a) Nylon 6
- b) PMMA
- c) PTEE
- d) Dacron

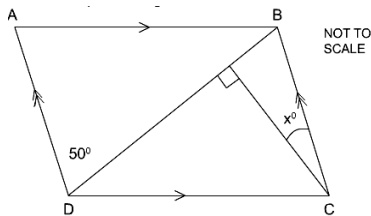
Ans: d

MATHEMATICS

1. Prime factorization of 18 is

- a. 2×9
- b. $3 \times 3 \times 2$
- c. 6×3
- d. 1×18

Ans: b



2. Find the angle x .

- a. 60°
- b. 50°
- c. 35°
- d. 40°

Ans: d

3. What is the scientific notation of $(4.7 \times 10^{-3}) \times (9.1 \times 10^7)$?

- a. 4.277×10^5
- b. 42.77×10^4
- c. 4277×10^3
- d. 4.27×10^{-5}

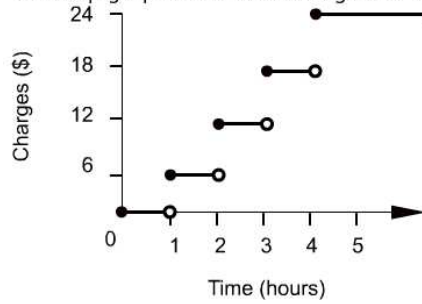
Ans: a

4. Ben worked for 35 hours at the normal hourly rate of pay and for five hours at double rate. He earned Rs. 561.60 in total for this work. What was the normal hourly rate of pay?

- a. 7.02
- b. 12.48
- c. 14.04
- d. 16.05

Ans: b

The step graph shows the charges for a carpark.

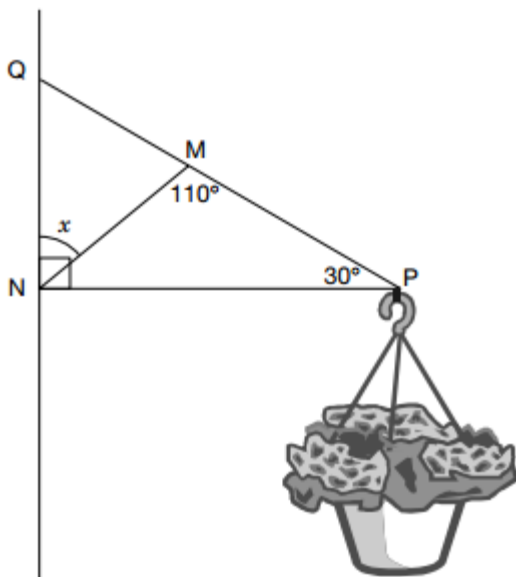


5. Maria enters the car park at 10.10 and leaves at 1.30. how much should she pay as parking charge?
- a. Rs.6
 - b. Rs.12
 - c. Rs.18
 - d. Rs.24

Ans: c

6. $A = 6x + 10$. If x is increased by 2, what will be the corresponding change in A ?
- a. 12
 - b. 15
 - c. 16
 - d. 9

Ans: a



7. A flower pot is hanging as shown in the figure. The angle X is__
- a. 22°
 - b. 30°
 - c. 40°
 - d. 50°

Ans: d

8. This set of data is arranged in order from smallest to largest .
5, 6, 11, x, 13, 18, 25

The range is six less than twice the value of x .

Which of the following is true?

- a. The median is 12 and the inter quartile range is 7.
- b. The median is 12 and the inter quartile range is 12.
- c. The median is 13 and the inter quartile range is 7.
- d. The median is 13 and the inter quartile range is 12.

Ans: c

9. When $x = 3$ and $y = 5$, by how much does the value of $3x^2 - 2y$ exceed the value of $2x^2 - 3y$?

- a. 4
- b. 14
- c. 16
- d. 20
- e. 50

Ans: b

10. What is the degree measure of the acute angle formed by the hands of a 12-hour clock that reads exactly 1 o'clock?

- a. 15°
- b. 30°
- c. 45°
- d. 60°
- e. 72°

Ans: b

11. What is the difference between 1.8 and 1.08?

- a. 0.71
- b. 0.71
- c. 0.719
- d. 0.72

Ans: d

12. An industrial cleaner is manufactured using only the 3 secret ingredients A, B, and C, which are mixed in the ratio of 2:3:5, respectively, by weight. How many pounds of secret ingredient B are in a 42-pound (net weight) bucket of this cleaner?

- a. 4.2
- b. 12.6
- c. 14.0
- d. 18.0
- e. 21.0

Ans: b

13. If $n = 8$ and $16 \cdot 2m = 4n - 8$, then $m = ?$

- a. -4
- b. -2
- c. 0
- d. 1
- e. 8

Ans: a

14. If $xy = 144$, $x + y = 30$, and $x > y$, what is the value of $x - y$?

- a. 4
- b. 6
- c. 18
- d. 22
- f. 24

Ans: c

15. Ding's Diner advertised this daily lunch special: "Choose 1 item from each column—only Rs: 250 only!!" Thus, each daily lunch special consists of a salad, a soup, a sandwich, and a drink.

Salads Soups Sandwiches Drinks

Cole slaw	onion	meat loaf	milk
lettuce	tomato	chicken	cola
potato		hamburger	coffee
		ham	tea
		tenderloin	

How many different daily lunch specials are possible?

- a. 4
- b. 14
- c. 30
- d. 120
- e. 180

Ans: d

16. Which of the following is a factor of the polynomial $2x^2 - 3x - 5$?

- a. $x - 1$
- b. $2x - 3$
- c. $2x - 5$
- d. $2x + 5$
- e. $3x + 5$

Ans: c

17. Each of the variables t , w , x , y , and z represents a different positive real number. Given the equations below, which of the 4 variables w , x , y , and z necessarily has the greatest value?

Given:

$$1.23w = t$$

$$1.01x = t$$

$$0.99y = t$$

$$0.23z = t$$

- a. w b. x c. y d. z e. z and x

Ans: d

18. How many irrational numbers are there between 1 and 6?

- a. 1
b. 3
c. 4
d. 10
e. Infinitely many

Ans: e

19. The number 597 in roman numerals is

- a. CDCXIII b. CDCXIV c. DXCVII d. CDXCVII

Ans: c

20. What is the difference between the greatest 7 digit number and smallest 4 digit number?

- a. 9998999 b. 999999 c. 989945 d. 9999899

Ans: a

21. Hindu Arabic period numeral for MCDXX?

- a. 1418 b. 1405 c. 1420 d. 1481

Ans: c

22. There are 222 red balls in a basket. A boy takes out red balls from it and replaces them with 12 white balls. He continuous to do so till all red balls are replaces by white balls. Then the number of white balls put in the basket is

- a. 333 b. 444 c. 345 d. 400

Ans: b

23. If we write down all the natural numbers from 259 to 492 side by side get a very large natural number 259260261....491492. How many 8's will be used to write this large natural number?

- a.53 b.67 c.42 d.34

Ans: c

24. If x and y are any natural numbers, then which of the following is an odd number?

- a. $xy+yx+(x-y)(xy+x)$ b. $xy(x+y)(xy+x)$
 c. $yx(xy-y)(xy-x)$ d. None of these

Ans: a

25. A and B are playing mathematical puzzles. A asks B "which whole numbers, greater than one, can divide all the nine three digit numbers 111,222,333,444,555,666,777,888 and 999?", B immediately gave the desired answer. It was

- a. 3, 37 and 119 b. 3, 37 and 111
 c. 9, 37 and 111 d. 3, 9 and 37

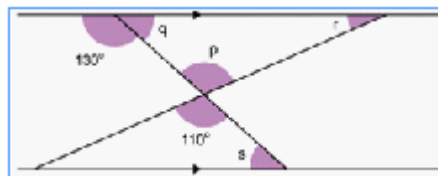
Ans: b

26. The HCF of two number is 28 and their LCM is 336.if one of the numbers is 112 then the other number is

- a. 64 b. 84 c. 34 d. 92

Ans: b

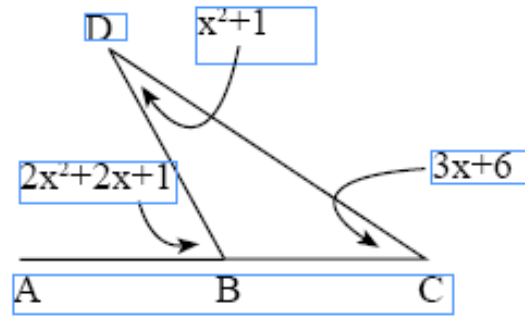
27. Find the angle marked P.



- a. 110°
 b. 120°
 c. 89°
 d. 90°

Ans: a

28. In the diagram at the right, the angles are represented as shown. Find the angle DBC.



- a. 25°
- b. 125°
- c. 155°
- d. 158°

Ans: c

29. A cricket team won 15 matches out of the total number of matches they played. If their win percentage was 60, then how many matches did they play in all?

- a. 24
- b. 26
- c. 25
- d. 22

Ans: c

30. The number of diagonals drawn from one vertex of a polygon of n sides is _____.

- a. $n-1$
- b. $n-2$
- c. $n-3$
- d. n

Ans: c

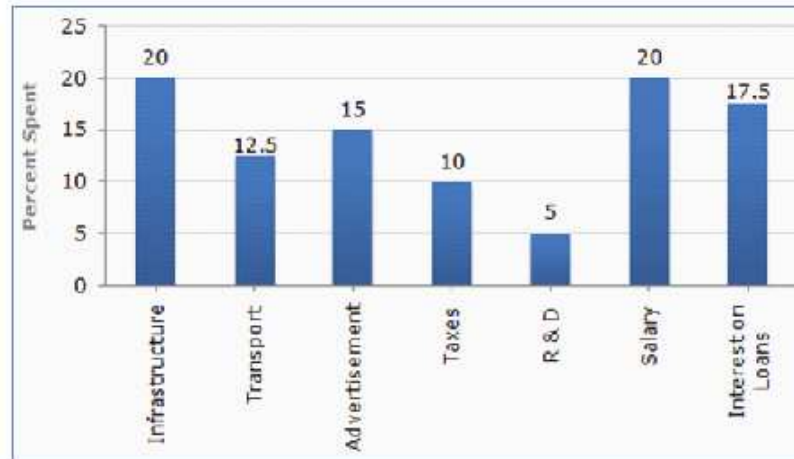
31. The value of x for which $((125)/8)^5 \times (125/8)^x = ((5)/2)^{18}$ is

- a. 2
- b. 3
- c. 1
- d. 9

Ans: c

The bar graph given below shows the percentage distribution of the total expenditures of a company under various expense heads during 2003.

Percentage Distribution of Total Expenditure of a Company



32. If the expenditure on advertisement is 2.10 crores then the difference between the expenditure on transport and taxes is?

- a. Rs. 1.25 crores b. Rs. 95 lakhs
c. Rs. 65 lakhs d. Rs. 35 lakhs

Ans: d

33. If the interest on loans amounted to Rs. 2.45 crores then the total amount of expenditure on advertisement, taxes and research and development is?

- a. Rs. 7 crores b. Rs. 5.4 crores
c. Rs. 4.2 crores d. Rs. 3 crores

Ans: c

34. John's father is thrice as old as John. 6 years from now, his father will be 24 years older than John. How old is John now?

- a. 12 years b. 10 years c. 16 years d. 13 years

Ans: b

35. If one-third of one-fourth of a number is 15, then three-tenth of that number is:

- a. 35 b. 36 c. 45 d. 54

Ans: d

36. $80 - 39 + 5 = 8 \times [?] + 6$

- a. 3 b. 5 c. 7 d. 4

Ans: b

37. If DICTIONARY is written at 1234256789, then ORDINARY is written as
 a. 59126789 b. 58126789 c. 57326789 d. 56126789

Ans: b

38. Which one will replace the question mark?

16	28	29
13	12	16
14	10	15
15	30	?

- a. 60 b. 30 c. 20 d. 45

Ans: b

39. Look at this series: V, VIII, XI, XIV, __, XX,... What number should fill the blank?

- a. IX b. XXIII c. XV d. XVII

Ans: d

40. The volume, V , of the right circular cone with radius r and height h can be found using the formula

$V = \frac{1}{3}\pi r^2 h$. A cone-shaped paper cup has a volume of 142 cubic centimeters and a height of 8.5 centimeters. What is the radius, to the nearest centimeter, of the paper cup?

- a. 4
 b. 5
 c. 7
 d. 15

Ans: a

BIOLOGY

1. Two chambered heart occurs in

- a) Crocodiles
- b) Fish
- c) Leaves
- d) Amphibians

Answer b

2 Karl Von Linne was involved with which branch of science?

- a) Morphology
- b) Taxonomy
- c) Physiology
- d) Medicine

Answer b

3. Real organs are absent in

- a) Mollusca
- b) Coelenterata
- c) Arthropoda
- d) Echinodermata

Answer b

4. In Photosynthetic process, atmospheric carbon di oxide is to carbohydrates

- a) Oxidized

- b) Reduced
- c) Neutralized
- d) Burnt

Answer b

5. When water enters the guard cells the stomata

- a) Opens
- b) Closes
- c) Open or closes
- d) No effect

Answer a

6. On seeing good food our mouth waters. This fluid is actually

- a) Water
- b) Hormone
- c) Enzyme
- d) None of the above

Answer c

7. The enzyme Pepsin is inactive in stomach without the presence of

- a) Nitric Acid
- b) Hydrochloric acid
- c) Acetic acid
- d) Butyric acid

Answer b

8. Villi present on the inner lining of the intestinal wall

- a) Secretes enzymes for digestion
- b) Secretes hormones

- c) Decreases the surface area for absorption
- d) Increases the surface area for absorption

Answer d

9. During cellular respiration one molecule of glucose is first broken down into two molecules of

- a) Acetic acid
- b) Pyruvic acid
- c) Lactic acid
- d) None of the above

Answer b

10. Rajib was absent in the class because of muscle pain which he claims to be due to excess physical exercise he had done yesterday. This pain is due to

- a) Formation of lactic acid
- b) Formation of acetic acid
- c) Formation of Pyruvic acid
- d) Formation of Hydrochloric acid

Answer a

11. Right part of the human heart contains

- a) Oxygenated blood
- b) Mixed blood
- c) Deoxygenated blood
- d) No blood

Answer c

12. The transport of soluble products of photosynthesis is called translocation and it occurs in the part of the vascular tissue called

- a) Xylem

- b) Sclerenchyma
- c) Phloem
- d) Collenchyma

Answer c

13. In human each kidney has large numbers of filtration units called ____

- a) Neutrons
- b) Neurons
- c) Neptune
- d) Nephrons

Answer d

14. Gustatory receptors will detect _____

- a) Light
- b) Taste
- c) Smell
- d) Touch

Answer b

15. The gap between two neurons is called _____

- a) Synapse
- b) Synthesize
- c) Dendron
- d) Axon

Answer a

16. Involuntary actions including blood pressure, salivation and vomiting are controlled by the _____ in the hind-brain.

- a) Medals

- b) Cerebellum
- c) Medulla
- d) Cerebrum

Answer c

17. A potted plant kept in a room tends to bend towards the direction of light.

This movement is called

- a) Photographism
- b) Photonastism
- c) Photoperiodism
- d) Phototropism

Answer d

18. _____ is a growth inhibitor hormone in plants

- a) Auxin
- b) Cytokinin
- c) Abscicic acid
- d) Gibberellic acid

Answer c

19. The endocrine organ present in human female but not in human male is

- a) Testis
- b) Ovary
- c) Pituitary gland
- d) Thymus

Answer b

20. If there is a deficiency of growth hormone the child becomes _____

- a) Blind

- b) Mentally retarded
- c) Giant
- d) Dwarf

Answer d

21. People living in coastal areas suffer less from goiter. This is because

- a) They eat sea food
- b) They drink sea water
- c) They bathe in sea water
- d) All of the above

Answer a

22 The upward or down ward movement of shoot and root respectively is influenced by gravity.

Such movement is called

- a) Gravity movement
- b) Gravity tropism
- c) Geotropism
- d) Gravitism

Answer c

23. The direction of impulse in a typical neuron is

- a) Axon to Dendron
- b) Dendron to axon
- c) Both a and b are correct
- d) Both a and b are wrong

Answer b

24. An animal which can reproduce by budding is

- a) Bryophyllym
- b) Yeast

- c) Hydra
- d) All of the above

Answer c

25. Male reproductive organ in flowering plant is

- a) Carpel
- b) Stamen
- c) Corolla
- d) Ovary

Answer b

26. Where are sperms formed in the human body?

- a) Vas deferens
- b) Prostate gland
- c) Ovary
- d) Testis

Answer d

27. The place where fertilization takes place in the human body is

- a) Uterus
- b) Oviduct
- c) Ovary
- d) Vagina

Answer b

28. Pre- natal sex determination has been prohibited by law due to

- a) High cost charged by doctors
- b) Possible danger of mother's health
- c) Increasing cases of female foeticide
- d) Increasing cases of male foeticide

Answer c

29. Copper T and Loops are

- a) Contraceptive devices
- b) Conventional devices
- c) Conducive devices
- d) Contaminating devices

Answer a

30. An unisexual flower

- a) Do not have carpel
- b) Do not have stamen
- c) Has either carpel or stamen
- d) Has either petal or sepal

Answer c

31. _____ is a common tube for urine and sperm in human male

- a) Urethra
- b) Uterus
- c) Ureter
- d) None of the above

Answer a

32. Eggs start developing in human female

- a) When she attains puberty
- b) Only after her birth
- c) After the first menstruation
- d) When she is in her mother's womb C

Answer d

33. What Is Juvenile Phase in organism?

- a) A sexual reproduction in organism

b) Growth and Maturity In their life

Answer : b

34. Aspirin comes from which of the following ?

- a) Willow bark
- b) Oak tree
- c) Acacia
- d) Eucalyptus

Answer : a

35. Carrot is orange in color because ?

- a) It grows in the soil
- b) It is not exposed to sunlight
- c) It contains carotene
- d) The entire plant is orange in color

Answer : c

36. The medulla oblongata is a part of human ?

- a) Heart
- b) Brain
- c) Liver
- d) Sex Organ

Answer : b

37. The main excretory product of frog is ?

- a) Urea
- b) Ammonia
- c) Uric acid
- d) Amino acid

Answer : a

38. The lining of marrow cavity is called ?

- a) Episteum
- b) Periosteum
- c) Endosteum
- d) Sarcolemma

Answer : c

39. The largest part of the human brain is ?

- a) Medulla oblongata
- b) Cerebellum
- c) Cerebrum
- d) Mid-brain

Answer : c

40. The largest organ of human body is ?

- a) Brain
- b) Heart
- c) Skin
- d) Liver

Answer : c

41. The human cell contains ?

- a) 44 chromosomes
- b) 48 chromosomes
- c) 46 chromosomes
- d) 23 chromosomes

Answer : c

42. The function of hemoglobin is ?

- a) To transport oxygen
- b) Destruction of bacteria
- c) Prevention of anemia
- d) Utilization of energy

Answer : a

43. Who discovered the Polio vaccine ?

- a) Louis Pasteur
- b) Jonas Salk
- c) Konrad Zuse
- d) Eli Whitney

Answer : b

44. Insects responsible for transmitting diseases are called ?

- a) Transmitter
- b) Drones
- c) Vector
- d) Conductor

Answer : c

45. Which animals may suffer from foot and mouth disease ?

- a) Cattle and Sheep
- b) Cattle
- c) Cattle and Pigs
- d) Cattle, Sheep and pigs

Answer : d

46. The primary source of carbohydrates is ?

- a) Marine animals
- b) Crude oil
- c) Plants
- d) coal-far

Answer : d

47. Which one of the following is not a true fish ?

- a) Starfish
- b) Shark
- c) Eel
- d) Sea-horse

Answer : a

48. What is "ALZHEIMER'S" disease ?

- a) It affects liver
- b) It affects Kidney
- c) It affects human immune system
- d) It is a disorder of the brain

Answer : d

49.The function of Trypsin is to ?

- a) Break down fats
- b) Break down proteins
- c) Synthesize proteins
- d) Break down Carbohydrates

Answer : b

50.Root nodules are commonly found in ?

- a) Leguminous plants
- b) Parasitic plants
- c) Epiphytic Plants
- d) aquatic plants

Answer : a

51.Which is the largest living bird ?

- a) Ostrich
- b) Peacock
- c) Dodo
- d) Turkey

Answer : a

52. Which is the chief nitrogenous waste in humans ?

- a) Urea
- b) Ammonia
- c) Uric acid
- d) Ammonium nitrate

Answer : a

53.Plants die in winter by frost because ?

- a) There is no transpiration
- b) No photosynthesis takes place at such low temperatures
- c) Respiration ceases at such low temperatures
- d) Of desiccation and mechanical damage to tissues

Answer : d

54. Heart attack occurs due to?

- a) Bacteria
- b) Stopping of heart beat
- c) Lack of blood supply to the heart itself
- d) Impairment of heart's working due to unknown reason

Answer : c

55. Hay fever is a sign of?

- a) Malnutrition
- b) Allergy
- c) Old Age
- d) Over Work

Answer : b

56. The branch of agriculture which deals with the feeding, shelter, health and breeding of the domestic animals is called ?

- a) Animal Husbandry
- b) Dairy Science
- c) Veterinary Science
- d) Poultry

Answer : a

57. Which of the following parts of human body is affected by Pyria?

- a) Bronchus
- b) Small intestine
- c) Teeth and gums
- d) Large intestine

Answer : c

58. Which of the following diseases is caused by a virus?

- a) Plague
- b) Polio
- c) Tetanus

d) Leprosy

Answer : b

59. Which one among the following is known as 'animal starch' ?

a) Cellulose

b) Glycogen

c) Pectin

d) Chitin

Answer : b

60. The vitamin which is generally excreted by human in urine is ?

a) Vitamin - A

b) Vitamin - D

c) Vitamin - C

d) Vitamin - E

Answer : c

61. The unit structure of genes is made up of ?

a) RNA

b) DNA

c) endoplasmic reticulum

d) magnesium

Answer : b

62. What is the amount of blood filtered by the Kidney within a minute?

a) 1200 ml

b) 1600 ml

c) 600 ml

d) 800 ml

Answer : a

63. Which of the following organism does not obey the 'Cell Theory'?

a) Virus

b) Bacteria

c) Fungi

d) Plants

Answer : a

64. Which among the following organs is involved in the conversion of ammonia, the main end product of protein digestion to excretory product urea?

a) Kidney

b) Lung

c) Intestine

d) Liver

Answer : d

65. Which of the following vitamin is considered to be a para - hormone?

a) Vitamin - A

b) Vitamin - C

c) Vitamin - D

d) Vitamin - K

Answer : c

66. Which of the following impart yellow color to urine in humans ?

a) Cholesterol

b) Lymph

c) Urochrome

d) Bile Salts

Answer : c

67. The macro nutrients provided inorganic fertilizers are ?

a) Carbon, Iron and boron

b) magnesium, manganese and Sulphur

c) magnesium, zinc and iron

d) magnesium, phosphorus and potassium

Answer : b

68. Which one among the following vitamins is necessary for blood clotting ?

a) Vitamin - A

b) Vitamin - D

c) Vitamin - K

d) Vitamin - C

Answer : c

69. Which one among the following parts of castor seed yields oil ?

a) Nucellus

b) Caruncle

c) Endosperm

d) Cotyledon

Answer : c

70. The fruit after ripping becomes soft. It is due to ?

a) dissolution of tannin in sap

b) dissolution of middle lamella

c) formation of ethylene gas

d) formation of auxin

Answer : b

71. Which one among the following is the largest edible bud found in nature ?

a) Cauliflower

b) Agave

c) Cabbage

d) Drpsera

Answer : c

72. The pteridophyte produces two kinds of spores.

a) lycopodium

b) Psilotum

c) Selaginella

d) Adiantum

Answer : c

73. 'Survival of the fittest' was proposed in his theory of evolution by

a) Darwin

b) Lamarck

- c) Mendel
- d) Hugo de vries

Answer : a

74. Mark the correct statement :

- a) Foramen magnum is in the skull
- b) Foramen magnum is an aperture in the heart
- c) Foramen magnum is a large hole in the voice box
- d) Foramen magnum does not exist anywhere

Answer : b

75. The innate tendency of offspring to resemble their parents is called

- a) variation b) heredity
- c) inheritance d) resemblance

Answer b

76 The tendency of offspring to differ from parents is called

- a) variation b) heredity
- c) inheritance d) resemblance

Answer :a

77. Who is regarded as the father of genetics?

- a) Bateson b) Morgan
- c) Mendel d) Watson

Answer :c

78. Mendel's experimental material was

- a) Pisum sativum b) Lathyrus odoratus
- c) Oryza sativa d) Mirabilis jalappa

Answer :a

79. Mendel presented his works in

- a) Natural History Society in Russia
- b) Natural History Society in America
- c) Natural History Society in Brunn
- d) Natural History Society in Germany

Answer :c

80. Mendel's findings were rediscovered by

- a) De vries b) Correns
- c) tschermak d) all of the above

Answer :d

81. The physical expression or appearance of a character is called as

- a) morphology
- b) geneotype
- c) phenotype
- d) ecotype

Answer :c

82 Genotype is the

- a) genetic constitution
- b) genetic constitution of the phenotype
- c) trait expressed
- d) expressed genes

Answer: b

83. The alternate forms of a gene is called

- a) recessive character
- b) dominant character
- c) alleles
- d) alternative gene

Answer :c

84. If the genotype consists of only one type of allele. It is called

- a) homozygous
- b) hetreozygous
- c) momoallelic
- d) uniallelic

Answer: a

85. The number of types of gametes produced by a homozygous individual is

- a) 1
- b) 2
- c) 3
- d) many

Answer :b

86.Mark the correct statement:

- a) All sperms fertilize all eggs
- b) Eggs are fertilized by many sperms
- c) Each egg is usually fertilized by one sperm
- d) Each sperm fertilizes one egg.

Answer : c

87. Which part of the human brain is the centre of memory, learning, thinking and reasoning?

- a) Cerebrum
- b) Hypophysis
- c) Cerebellum
- d) Medulla

Answer : a

88. The kinds of ribonucleic acid present in any plant cell will be

- a) 2
- b) 4
- c) 3
- d) 5

Answer : a

89. Gene mutation takes place in

- a) Deoxyribonucleic acid
- b) Chloroplast
- c) Mitochondrion
- d) Ribosome

Answer : c

90. Which of the following hormones is responsible for the emotional states such as fear, anger and tension and a rise in blood pressure and heart rate?

- a) Somatotrophin
- b) Oxytocin
- c) Thyroxine
- d) Adrenaline

Answer : d

91. The children of a colour-blind mother and a normal father will be

- a) Normal daughters and sons
- b) Normal sons and carrier daughters
- c) Color blind sons and carrier daughters
- d) Color blind sons and daughters

Answer : c

92. The blood which leaves the liver and moves to the heart has a higher concentration of

- a) Glucose
- b) Bile Pigments
- c) Bile
- d) Urea

Answer : b

93. The Phylloclade commonly found in xerophytic plants is the modified ?

- a) stem
- b) roots
- c) leaf
- d) flower

Answer : c

94. Which one of the following has haustoria or sucking roots ?

- a) Orchids
- b) Mango
- c) Chestnut
- d) Cuscuta

Answer : d

95. Potatoes are borne on ?

- a) Primary roots
- b) Stem branches

- c) Lateral roots
- d) Adventitious roots

Answer : b

96. Kidney stones are mainly formed by which of the following compound ?

- a) Sodium chloride
- b) Silicates
- c) Calcium bicarbonate
- d) Calcium Oxalate

Answer : d

97. The most advanced evolutionary inflorescent is found in ?

- a) Dahlia
- b) Calotropis
- c) Saliva
- d) Yucca

Answer : a

98. How do marine animals survive in water without air contact ?

- a) They do not require any oxygen
- b) They take oxygen from water
- c) They only produce oxygen in their body
- d) They get oxygen from water plants

Answer : a

99. Movement of cell against concentration gradient is called

- a) osmosis
- b) active transport
- c) diffusion
- d) passive transport

Answer : b

100. Pollination is best defined as

- a) transfer of pollen from anther to stigma
- b) germination of pollen grains
- c) growth of pollen tube in ovule
- d) visiting flowers by insects

Answer : a

101. Pine, fir, spruce, cedar, larch and cypress are the famous timber-yielding plants of which several also occur widely in the hilly regions of India) All these belong to

- a) angiosperms
- b) gymnosperms
- c) monocotyledons
- d) dicotyledons

Answer : b

102. Ozone hole refers to

- a) hole in ozone layer
- b) decrease in the ozone layer in troposphere
- c) decrease in thickness of ozone layer in stratosphere
- d) increase in the thickness of ozone layer in troposphere

Answer : c

103. The pteridophyte produces two kinds of spores.

- a) lycopodium
- b) Psilotum
- c) Selaginella
- d) Adiantum

Answer : c

104: Bone is an example of _____

- a) Muscular tissues
- b) Connective tissues
- c) Epithelial tissues
- d) Nervous tissues

Answer b

105: Which animal tissue are usually separated from the underlying tissue by an extracellular fibrous basement membrane?

- a) Muscular tissues
- b) Connective tissues
- c) Epithelial tissues
- d) Nervous tissues

Answer c

106: Oesophagus and the lining of the mouth are also covered with which tissues?

- a) Squamous epithelium
- b) Ciliated epithelium
- c) Areolar connective
- d) Striated muscle tissues

Answer a

107. Which part of the human brain is the center of memory, learning, thinking and reasoning?

- a) Cerebrum
- b) Hypophysis
- c) Cerebellum
- d) Medulla

Answer : a

108. The growth in plants is

- a) limited to certain regions
- b) uniform in all parts
- c) limited to top region

d) limited to roots only.

Answer a

109: Intercalary meristems are found

- a) at internodes and base of leaves
- b) at growing tips of roots
- c) beneath the bark
- d) at the tips of stem

Answer a

110: Cells of the tissue have dense cytoplasm, thin cellulose walls and prominent vacuoles. Identify the tissue.

- a) Collenchyma
- b) Sclerenchyma
- c) Meristem
- d) Parenchyma

Answer c

111: Dead long and narrow cells in a plant belong to which tissue?

- a) Parenchyma
- b) Sclerenchyma
- c) Collenchyma
- d) Phloem

Answer b

112: Husk of a coconut is made of which tissues?

- a) Parenchyma tissue
- b) Sclerenchymatous tissue
- c) Collenchyma
- d) Xylem

Answer b

113. Acromegaly is caused by irregular secretion of

- a) Pituitary
- b) Adrenal

- c) Thyroid
- d) Pancreas

Answer : a

114. The ABO blood groups were discovered by

- a) Charles Darwin
- b) Karl Landsteiner
- c) Gregor Mendel
- d) Watson

Answer : b

115. Identical twins are born, when

- a) Two sperms fertilize two ova
- b) Two sperms fertilize one ovum
- c) One sperm fertilize one ovum
- d) One sperm fertilize one ovum. Zygote cleaves into two cells that develop independently.

Answer : b

116. The food which gives an athlete instant energy is

- a) Glucose
- b) Protein
- c) Butter
- d) Vitamin

Answer : a

117. DNA structure was first described by

- a) Catcheside
- b) Nirenberg
- c) Lederberg
- d) Watson and Crick

Answer : d

118. Choose the correct statement with respect to unicellular organisms:

- a) in unicellular organisms, tissues work in co-ordination to perform different functions
- b) unicellular organisms do not require food)
- c) unicellular organisms respire and reproduce.
- d) all unicellular organisms move by cilia

Answer c

119. Majority of cells cannot be seen directly with our naked eyes because:

- a) organisms are generally unicellular
- b) cells are microscopic
- c) cells are present only inside the body
- d) cells are grouped into tissues

Answer b

120. Which one of the following term is not a part of the nucleus?

- a) ribosome
- b) nucleolus
- c) chromosome
- d) gene

Answer a

121. A suitable term for the various components of cells is

- a) tissue
- b) cell organelles
- c) chromosomes
- d) genes

Answer b

122. The jelly-like fluid substance present in cells is called

- a) protoplasm
- b) chromosome
- c) chloroplast
- d) cytoplasm

Answer d

123. Green color of leaves is due to presence of the pigment_____

- a) chlorophyll

- b) ribosomes
- c) mitochondria
- d) chloroplast

Answer a

124. Paheli accidentally placed her hand over a flame and immediately pulled it back. She felt the sensation of heat and reacted due to the action of

- a) blood cells
- b) skin surface
- c) nerve cells
- d) nucleus of cells

Answer c

125 Of the following parts of a cell listed below, name the part that is common to plant cell, animal cell and a bacterial cell.

- a) chloroplast
- b) cell wall
- c) cell membrane
- d) nucleus

Answer c

126. The thread-like structures present in the nucleus are

- a) nucleolus
- b) chromosomes
- c) genes
- d) ribosomes

Answer b

127. Which of the following is not a cell?

- a) Red Blood Corpuscle (RBC)
- b) bacterium
- c) spermatozoa
- d) virus

Answer d

128. Which of the following feature will help you in distinguishing a plant cell from an animal cell?

- a) cell wall
- b) cell membrane
- c) mitochondria

d) nucleus

Answer a

129 Under a microscope Paheli observes a cell that has a cell wall but no distinct nucleus.

The cell that she observes is

a) a plant cell

b) an animal cell

c) a nerve cell

d) a bacterial cell

Answer d

130. Cheek cells do not have _____

a) cell membrane

b) nucleus

c) Golgi apparatus

d) plastids

Answer d

131. Identify the correct statement.

a) Tissue is a group of dissimilar cells.

b) An organ consists of similar cells.

c) Vacuoles are not found in plant cells.

d) Prokaryotes do not have nucleus.

Answer d

132. Identify the correct statement about cells.

a) All the cells have nucleus.

b) Cells of an organ have similar structure

c) Cells of a tissue have similar structure.

d) Shape of all types of cells is round

Answer c

133 Vitamin E is important for

a) protecting cells

b) vital tissues protection

c) both a and b

d) development of bones

Answer c

134. Starch can be tested in any food by help of

a) iodine solution

b) biuret solution

c) benedicts solution

d) felhings solution

Answer a

135. Maximum carbohydrates are obtained from

a) whole grain food

b) fatty fish

c) plant oil

d) nuts

Answer a

136. Fungi can be stained by

a) Saffranine

b) Cotton blue

c) Glycerine

d) Lactophenol :

Answer b

137. Fungi usually store the reserve food material in the form of

a) Starch

b) Lipid

c) Glycogen

d) protein

Answer c

138. Fungi can be distinguished from algae in fact that

a) Cell wall is cellulosoic cell wall and chlorophyll is absent

b) Nucleus is present

c) Mitochondria are absent

d) Cell wall is chitinous and chlorophyll is absent

Answer d

139. Ergot is obtained from

a) Rhizopus

b) Claviceps

c) Albugo

d) Phytomonas

Answer b

140. One of the following is a predatory fungus

a) Arthrotrys

b) Puccinia

c) Fusarium

d) Alternaria

Answer a

141. Fungi producing usually eight spores in a sac like structure belong to

a) Phycomycetes

b) Ascomycetes

c) Basidiomycetes

d) Deuteromycetes

Answer b

142. One of the following is a heteroecious fungus?

a) Albugo

b) Phytophthora

c) Puccinia

d) Ustilago

Answer c

143 In some parasitic fungi a globular or hook like structure is formed at the point of contact with the host. This is known as

a) Haustoria

b) Appressorium

c) Hold fast

d) Hook

Answer b

144. Fungi which grow on dung are termed as

a) Coprophilous

b) Terricolous

c) Saxicolous

d) Saxiphilous

Answer a

145. The fruiting body of Aspergillus is called

a) Apothecium

b) Perithecium

c) Cleistothecium

d) Hypanthodium

Answer c

146. All fungi are

a) autotrophs

- b) Saprophytes
- c) Parasites
- d) Heterotrophs

Answer d

147 One of the common fungal diseases of man is

- a) Cholera
- b) Plague
- c) Ringworm
- d) Typhoid

Answer c

148. Aflatoxin is produced by

- a) Bacteria
- b) Virus
- c) Fungi
- d) Nematode

Answer c

149. Yeast is unlike bacteria in being

- a) Unicellular
- b) Multicellular
- c) Prokaryotic
- d) Eukaryotic

Answer d

150 "Perfect stage" of a fungus means

- a) When the fungus is perfectly healthy
- b) When it reproduces asexually
- c) When it forms perfect sexual spores
- d) None of these :

Answer c

151: Which part of the plant takes in carbon dioxide from the air for photosynthesis?

- a) Root Hair
- b) Stomata
- c) Leaf veins
- d) Sepals

Answer b

152 Which animal does not yield wool?

- a) Yak

b) Camel

c) Goat

d) Woolly dog

Answer d

153. On Amoeba, food procuring structure is

a) tongue

b) tentacle

c) pseudopodium

d) radula

Answer c

154. A solution turns red litmus paper blue. If a drop of phenolphthalein is added to it.

a) it turns pink.

b) it remains colorless

c) it turns red again

d) it remains blue

Answer a

155: Orange juice is sour in taste due to the presence of

a) acetic acid

b) citric acid

c) formic acid

d) tartaric acid

Answer b

156: A crystallization is a process of obtaining

a) pure solids only

b) pure liquids only

c) pure gas only

d) all of these

Answer a

157: The climate of tropical rain forest is

a) extremely cold

b) extremely hot

c) hot and humid

d) cold and humid

Answer c

158: Water holding capacity is the highest in

- a) loamy soil
- b) clayey soil
- c) sandy soil
- d) soil containing gravel

Answer a

159: Which of the following is produced/formed during anaerobic respiration in muscles:

- a) alcohol
- b) lactic acid
- c) water
- d) carbon dioxide

Answer b

160: Which one of the following is NOT a type of asexual reproduction?

- a) Budding
- b) Pollination
- c) Spores
- d) Fragmentation

Answers: b

161 Hydra produces by

- a) Fragmentation
- b) Budding
- c) Spores
- d) fusion of gametes

Answer : b

162: Which of the following is a male reproductive part of a flower?

- a) Stamen
- b) Pistil
- c) Stem
- d) Root

Answer a

163: The small bulblike projection coming out of yeast is known as _____.

- a) Fragment
- b) Spore
- c) Bud

d) Seed Answer : c

164: Which of the following is a male reproductive part of a flower?

- a) Stamen
- b) Pistil
- c) Stem
- d) Root

Answer a

165 Fusion of gametes form a fertilized egg which is also known as _____.

- a) seed
- b) embryo
- c) ovary
- d) zygote

Answer : d

166 Which one of the following is NOT a method of vegetative propagation?

- a) Cutting
- b) Grafting
- c) Fragmentation
- d) Tissue Culture

Answer c

167 Which of the following does not NOT have bisexual flower?

- a) mustard
- b) papaya
- c) rose
- d) petunia

Answer b

168. Which plant bears spiny seeds with hooks to be dispersed by animals?

- a) Sunflower
- b) Castor
- c) Xanthium

d) Balsam

Answer c

169. Which one of the following plant gives rise to new plant by roots?

a) sweet potato

b) ginger

c) rose

d) orchids

Answer : a

170. Which of the following is a protective food?

a) milk

b) oils & fats

c) fruits

d) cereals

Answer c

171. Goitre: swelling of thyroid glands occurs due to the deficiency of _____.

a) iron

b) potassium

c) phosphorus

d) iodine

Answer d

172. Which of the following nutrients is not present in milk?

a) Protein

b) Vitamin C

c) Calcium

d) Vitamin D

Answer b

173. Which of the following is considered as 'body building foods'?

- a) Proteins
- b) Vitamins
- c) Fats
- d) Carbohydrates

Answer a

174. Our body prepares which type of Vitamin in the presence of sunlight?

- a) Vitamin A
- b) Vitamin B
- c) Vitamin D
- d) Vitamin K

Answer : c

175. _____ is essential for forming haemoglobin in the blood)

- a) calcium
- b) iron
- c) phosphorous
- d) magnesium

Answer b

176. Our hair and nails contain

- a) Protein
- b) Calcium
- c) Chlorine
- d) Phosphorus

Answer a

177. Rickets is caused by the deficiency of

- a) vitamin A
- b) vitamin B1
- c) vitamin C
- d) vitamin

Answer d

178. Scurvy (Bleeding gums) is caused due to the deficiency of

- a) vitamin A
- b) vitamin B1
- c) vitamin C
- d) vitamin D

Answer : c

179. What are the ingredients of preparing Chapati?

- a) Atta (Wheat Flour) only
- b) Water only
- c) Both Atta and water
- d) None of these

Answers: c

180. Which of the following is NOT an ingredient for preparing Dal?

- a) Pulses
- b) Kerosene
- c) Oil or Ghee
- d) Salt

Answers b

181 Which one of the following is a carnivore animal?

- a) Sparrow
- b) Owl
- c) Parrot
- d) Cow

Answer : b

182. Materials required to prepare a food item are called

- a) Nutrients
- b) Ingredients
- c) Nourishments
- d) Minerals

Answers b

183. Which of the following is not a milk product?

- a) cheese
- b) butter
- c) honey
- d) yogurt

Answers c

184. The animals which eat only plants are called

- a) Herbivores
- b) Carnivores
- c) Omnivores
- d) Insectivores

Answers a

185. Humans are:

- a) Carnivores
- b) Herbivores
- c) Omnivores
- d) None of these

Answers c

186. The part of a banana plant not used as food is

- a) flower
- b) fruit
- c) stem
- d) root

Answers d

187. Animals which eat both animals flesh as well as plants are called _____.

- a) Carnivores
- b) Herbivores
- c) Omnivores

d) None of these

Answers c

188. Which of the following gives eggs?

a) Duck

b) Cow

c) Goat

d) Donkey

Answers a

189. Small plants, soft peroshable stems, attain height upto five feet, generally annuals and biennials. These plants are _____.

a) Herbs

b) Shrubs

c) Trees

d) none of these

Answers: a

190. Woody perennials, attain height between 3m to 5m, bushy appearance, profoused branched stems from the ground) These plants are _____.

a) Herbs

b) Shrubs

c) Trees

d) none of these

Answer b

191. Woody perennial, single main stem called trunk, which gives out number of branches. These plants are _____.

a) Herbs

b) Shrubs

c) Trees

d) none of these

Answer c

192. Tomato plant is a _____

a) Herb

b) Shrub

c) Tree

d) none of these

Answer a

193. Mango plant is a _____

a) Herb

b) Shrub

c) Tree

d) none of these

Answer c

194. Lemon plant is a _____

a) Herb

b) Shrub

c) Tree

d) none of these

Answer b

195. Part of the plant which conducts water to all parts of the plant is called as _____.

a) Leaf

b) Root

c) Flower

d) Stem

Answer : d

196. The part of a leaf by which it is attached to the stem is called _____.

a) Petiole

b) Lamina

c) Midrib

d) Node

Answer : a

197. Part of a plant which is the main site for photosynthesis is _____.

a) Flower

b) Leaf

c) Stem

d) Root

Answer b

198. Which one of the following is not the function of leaf normally?

a) Photosynthesis

b) Transpiration

c) Respiration

d) Transportation

Answer d

199. Mitochondria are found

a) in all type of living cells

b) only in animal cells

c) only in plant cells

d) in eukaryote cells only

Answer: d

200. Who discovered the first living cell?

a) Robert Hooke

b) Leeuwenhoek

c) Purkinje

d) Robert Brown

Answer b

201. Compounds which are needed in very small amount but their deficiency lead to scurvy and rickets are

a) vitamins

b) proteins

c) carbohydrates

d) fat

Answer a

202. Who used the word 'protoplasm first time for living cells?

a) Robert Hooke

b) Leeuwenhoek

c) Purkinje

d) Robert Brown

Answer c

203. The main constituent of cell wall is

- a) Starch
- b) cellulose
- c) protein
- d) none of these

Answer b

204. Function of centriole is

- a) formation of spindle fibre
- b) nucleolus formation
- c) cell wall formation
- d) cell division initiation

Answer a

205: Which organelle is the power house of the cells?

- a) Plastids
- b) Mitochondria
- c) Golgi
- d) Nucleus

Answer b

206 Chromosomes are made up of nucleic acid and _____

- a) Phosphorus
- b) Protein
- c) Sugar
- d) Calcium

Answer b

207: Which organelle is considered as a suicide bag?

- a) Centrosome
- b) Mesosomes
- c) Lysosomes
- d) Chromosome

Answer c

208: Plastids which are responsible for giving colors to fruits and flowers are

- a) chloroplasts
- b) leucoplasts
- c) protoplasts
- d) chromoplasts

Answer d

209: Which of the following organelle is present onion cells but not in human cheek cells?

- a) cell wall
- b) cytoplasm
- c) nucleus
- d) plasma membrane

Answer a

210 Which cell organelle plays a crucial role in detoxifying many poisons and drugs?

- a) Golgi Apparatus
- b) Lysosomes
- c) Smooth Endoplasmic Reticulum
- d) Vacuoles

Answer c

211: By which optical phenomenon, the splitting of white light into seven constituent colors occur?

- a) Refraction
- b) Reflection
- c) Dispersion
- d) Interference

Answer c

212: A human eye can focus on objects at different distances by adjusting the focal length of the eye lens. This phenomenon is due to:

- a) near sightedness
- b) long sightedness
- c) accommodation
- d) persistence of vision

Answer c

213: Which of the following are the primary colors?

- a) Red, Blue, Yellow
- b) Red, Green, Violet.
- c) Yellow, Green Blue
- d) Red, Green, Blue

Answer a

214 The human eye forms the image of an object at its

- a) cornea
- b) iris
- c) pupil
- d) retina

Answer d

215 The least distance of distinct vision for is about

- a) 25 m
- b) 2.5 cm
- c) 25 cm
- d) 2.5 m

Answer c

216: A person cannot see objects clearly beyond 50 cm. The power of lens to correct the vision is:

- a) +5 D
- b) 0.5 D
- c) 2 D
- d) +2 D

Answer c

217 Which phenomenon is responsible for the twinkling of stars?

- a) Atmosphere reflection
- b) Atmosphere refraction
- c) Reflection
- d) Total internal reflection

Answer : b

218 The change in focal length of an eye lens is caused by the action of the

- a) pupil
- b) retina
- c) ciliary muscles
- d) iris

Answer : c

219: What is the time difference between actual sunset and apparent sunset?

- a) 2 s
- b) 20 s
- c) 2 minute
- d) 20 minute

Answer : c

220: When light passes through a prism, the color which deviates the least is:

- a) red
- b) blue
- c) violet
- d) green

Answer : a

221: Which of the following optical phenomenon is used in cinematography or movie projectors?

- a) accommodation
- b) persistence of vision
- c) interference

d) short sightedness

Answer b

222 In plants which of the following have the capability of cell division?

a) Parenchyma

b) Scelerenchyma

c) Xylem

d) Apical Meristem

Answer d

223. Size of intestine of a human is laid in straight line will be length of

a) 1 m

b) 10m

c) 12m

d) 20m

Answer b

Answer B

224. Complex carbohydrates which make up cell wall in plants are called

a) lactose

b) maltose

c) cellulose

d) sucrose

Answer c

HEALTH SCIENCE

1. An exercise performing daily 30 minutes at the rate of one kcal/minute for 5days a week is considered as:

- A. Short term exercise
- B. Midterm exercise
- C. Long term exercise
- D. Specific exercise

Ans: C

2. Anaerobic endurance training related with

- A. ATP-CP energy systems
- B. ATP energy systems
- C. PC energy systems
- D. ADP energy systems

Ans: A

3. The flexometer test is to measure?

- A. Dynamic flexibility
- B. Static flexibility
- C. Agility
- D. Validity

Ans: B

4. The total volume of air that can be voluntarily moved in one breath from full inspiration to maximum expiration is called?

- A. Tidal volume
- B. Inspiratory reserve volume
- C. Vital capacity
- D. Total lung volume

Ans: C

5. The amount of oxygen consumed during recovery from an exercise, above that ordinarily consumed at rest in the same period is referred as?

- A. Fatigue
- B. Excess post exercise oxygen consumption (epoc)
- C. Second wind
- D. Lung volume

Ans: B

6. A stretch or tear of a ligament, the fibrous band of connective tissue that joins the one bone with another

- A. Strain
- B. Stretch
- C. Sprain
- D. Fracture

Ans: C

7. If the skin breaks and bleeds, the injury is called

- A. Abrasion
- B. Contusion
- C. Bruise
- D. Dislocation

Ans: C

8. What is the reason for drying your hands after washing them?

- A. So that you don't drip water everywhere
- B. Because germs and bacteria are more easily spread with wet hands
- C. Your hands are slippery when wet, and you will not be able to hold kitchen utensils properly
- D. None of these

Ans: B

9. Which of the following is true about bacteria?

- A. A bacterium multiplies and grows faster in warm environments.
- B. A bacterium needs air to survive.
- C. Every type of bacteria can give people food poisoning.
- D. By freezing food you can kill bacteria.

Ans: A

10. The lateral epicondylitis is a common sports injury to

- A. Football players
- B. Chess players
- C. Ball and racquet players
- D. Athletes

Ans: C

11. Motor qualities are the foundation for

- A. Behavior
- B. Habits.
- C. Sports skills
- D. Communication skills

Ans: C

12. The Olympic motto "Fortius "means

- A. higher
- B. faster
- C. stronger
- D. slower

Ans: C

13. How can you tell if food has enough bacteria to cause food poisoning?

- A. It will smell.
- B. You can't, it will appear normal.
- C. It will have a different colour.
- D. It will taste different.

Ans: B

14. Which of the following powers do environmental health officers not have?

- A. Authority to close down premises.

- B. The power of arrest.
- C. Authority to enter premises without appointment.
- D. The power to seize foods.

Ans: B

15. It is important to prepare food safely because;

- A. It helps to prevent food poisoning.
- B. Prepared food looks better.
- C. Prepared food tastes better.

Ans: A

16. Which of the following does bacteria need to assist it to grow and multiply?

- A. Water.
- B. Food.
- C. Warm temperatures.
- D. All of the above.

Ans: D

17. High altitude (over 1524 meters) sports training mainly effects the performance of

- A. Endurance athletes
- B. Speed athletes
- C. Middle distance athletes
- D. Throwers

Ans: A

18. If an athlete wishes to run faster, he should

- A. Move his arms faster
- B. Keep his head bent forward
- C. Raise the knee higher
- D. Run on toes

Ans: C

19. pushing against

- A. isometric
- B. isotonic
- C. isokinetic
- D. polymetric

Ans: A

20. How much calories intake recommended by scientists for an average man at rest

- A. 2000 kcl/day
- B. 1800kcl/day
- C. 1500 kcl/day
- D. 1000 kcl/day

Ans: A

21. Chronological age of an individual determined by

- A. Intelligence test
- B. Ossification of bones
- C. Calendar years and months
- D. Sign of puberty

Ans: C

22. The instrument to measure percentage of body fat is called

- A. Spreading caliper

B. Vernier caliper

Skinfold caliper

D. Dynamometer

Ans: C

23. A protein that speeds up chemical reactions

A. Glycogen

B. Enzyme

C. Myoglobin

D. None

Ans: B

24. The amount of air inspired or expired per breath is called

A. Lung volume

B. Tidal volume

C. Vital capacity

D. None

Ans: B

25. Aerobic capacity contributes to

A. Endurance development

B. Strength development

C. Agility development

D. Power development

Ans. A

26. White or pink muscle fiber has

A. High aerobic capacity

B. High anaerobic capacity

- C. Both (a) and (b)
- D. None

Ans: B

27. Athlete's is foot is a disease caused by

- A. Bacteria
- B. Fungus
- C. Virus
- D. Protozoa

Ans. B

28. Name the scheme launched by the Indian railways under which hot milk, hot water and baby food will be available at railway stations?

- A. Jan Seva
- B. Swachbarath
- C. Janani Sewa
- D. Swachatha

Ans. C

29. The primary source of energy for brain is from?

- A. Glucose
- B. Vitamins
- C. Minerals
- D. None of these

Ans. A

30. Ice massage in treatment commonly known as

- A. Hydrotherapy
- B. Electro therapy

- C. Cryotherapy
- D. Thermo therapy

Ans. C

31. A sprain is an injury involving

- A. Muscle
- B. Bone
- C. Spine
- D. Ligament

Ans. D

32. Who's concept of health focuses on

- A. Freedom from diseases
- B. Physical health
- C. Mental health
- D. Health as a sense of total well being

Ans. D

33. Living things consume food for

- A. Oxygen
- B. Water
- C. Energy
- D. Organic matter

Ans. C

34. The shape of the body is largely determined by

- A. Muscles
- B. Skeleton

- C. Skin
- D. Organs

Ans. B

35. The condition of painful muscular contraction caused by prolonged exposure of environmental heat is called

- A. Heat exhaustion
- B. Heat stroke
- C. Heat cramps
- D. Muscle cramp

Ans. C

36. The ability to maintain equilibrium while moving is called

- A. Dynamic balance
- B. Static
- C. Potential ability
- D. Kinetic ability

Ans . A

37. The fastest period of growth in human being is during

- A. Childhood
- B. Infancy
- C. Adolescence
- D. Puberty

Ans . C

38. The period of growth and development from 11-14 years of age is known as

- A. Adolescence
- B. Childhood
- C. Puberty

D. Youth

Ans. C

39. Factors influencing growth are

A. Heredity

B. Nutrition

C. Exercise

D. All the above

Ans . D

40. Psychology deals with

A. functions of the body

B. construction of the body

C. behavior of man

D. structure of the body

Ans. C

41. Which disease is known as Christmas disease?

A. Hemophilia

B. Multiple sclerosis

C. Scleroderma

D. Lupus

Ans: A

42. The seat of memory in the human brain is located in the _____?

A. Cerebrum

B. Cerebellum

C. Hypothalamus

D. Thymus

Ans: A

43. Which hormone is known as emergency hormone?

A. Adrenalin

- B. Cortisol
- C. Calcitonin
- D. Corticotrophin

Answer: A

44. . Total number of bones in human body ?

- A. 206
- B. 187
- C. 199
- D. 207

Answer: A

45. Total number of muscles in human body ?

- A. 639
- B. 640
- C. 641
- D. 638

Answer: A

46. What is the enzyme present in saliva ?

- A. Trypsin
- B. Ribo nuclease
- C. Sucrose
- D. Ptyalin

Answer: D

47. Covering of brain is called as _____ ?

- A. Meninges
- B. Pericardium
- C. Pleura
- D. Tunica

Answer: A

48. Covering of lungs is called as _____ ?

- A. Meninges
- B. Pericardium
- C. Pleura
- D. Tunica

Answer: C

49. Covering of heart is called as _____ ?

- a. Meninges
- b. Pericardium
- c. Pleura
- d. Tunica

Ans: B

50. Who prepared the first cholera vaccine?

- A. Louis Pasteur
- B. Alexander Fleming
- C. Michael faraday
- D. Albert Einstein

Ans: A

51. Who discovered rabies vaccine?

- A. Louis Pasteur
- B. Alexander Fleming
- C. Michael faraday
- D. Albert Einstein

Ans: A

52. Blood pressure is the pressure exerted by blood on the walls of _____ ?

- a. Vein
- b. Artery
- c. Organs
- d. Heart

Answer: b

52. Most spoilage bacteria grow at

- a. Acidic pH
- b. Alkaline pH
- c. Neutral pH
- d. Any of the pH

Ans: C

53. Which of the following acid will have higher bacteriostatic effect at a given ph?

- a. Acetic acid
- b. Tartaric acid
- c. Citric acid
- d. Maleic acid

Ans: A

54. Which of the following is not true for the thermal resistance of the bacterial cells?

- a. Cocci are usually more resistant than rods
- b. Higher the optimal and maximal temperatures for growth, higher the resistance
- c. Bacteria that clump considerably or form capsules are difficult to kill
- d. Cells low in lipid content are harder to kill than other cells

Ans: D

55. What is known as building blocks of the body?

- a. Carbohydrates
- b. Minerals
- c. Protein
- d. Fat

Ans: C

56. Name the vitamins which can be made by our body?

- a. Vitamin d & k
- b. Vitamin e & k
- c. Vitamin a & b
- d. Vitamin & k

Ans: A

57. The principal energy source of our body?

- A. fat
- B. carbohydrate
- C. proteins
- D. minerals

Ans. B

58. The science of food is called?

- A. bio technology
- B. food science
- C. nutrition
- D. physiology

Ans: C

59. The energy value of food is measured in?

- A. gram
- B. kilogram

C. litre

D. kilocalorie

Ans: D

60. Which is sunshine vitamin?

A. Vitamin D.

B. Vitamin a

C. Vitamin e

D. Vitamin k

Ans: A

61. Deficiency of vitamin d causes

A. Rickets

B. Bery bery

C. Scurvy

D. Goiter

Ans: A

62. Scoliosis is an abnormal -----curvature of the spine

A. Lateral

B. Medial

C. Posterior

D. Anterior

Ans: A

63. The major cause of hypokinetic diseases?

A. Junk food

B. Insufficient activity and lack of regular exercise

C. Over consumption of food

D. Heredity

Ans: A

64. The removal and examination of tissue from the living cell is called?

- A. Biopsy
- B. MRI
- C. X ray
- D. CT scan

Ans: A

65. The smallest functional unit of muscle

- A. Sarcomere
- B. Sarcolemma
- C. Sarcoplasm
- D. H zone

Ans: A

66. The amount of air inspired or expired per breath

- A. Tidal volume
- B. Lung volume
- C. Vital capacity
- D. None

Ans: A

67. Finger stick blood glucose test is to diagnose?

- A. Liver cirrhosis
- B. Diabetes mellitus
- C. Hepatitis

D. Blood group

Ans: B

68. A person with blood pressure ranging from 140/90 or above is called

A. Low pressure

B. Pre hyper tension

C. Hypertension

Ans: C

69. Pedograph is used to measure

A. Flat foot

B. Kyphosis

C. Scoliosis

D. Lordosis

Ans A

70. The method of estimation of body fat

A. Densitometry

B. Skin fold caliper

C. Bmi

D. Waist hip ratio

Ans: A

71. Body mass index is found by

A. Body weight (kg)/height²

B. Height /weight

C. Weight²/height

D. Waist circumference/hip circumference

Ans:A

72. Osteoporosis is a condition in which

- A. Increase in bone density
- B. Decrease in bone density
- C. Stagnation of excess calcium
- D. Presence of fracture

Ans: B

78. An individual is said to be obese when his body mass index falls in

- A. > 30
- B. < 30
- C. Below 18.5
- D. 18.5 – 24.9

Ans: A

79. Which of the following is known as the voice box?

- A. Trachea
- B. Pharynx
- C. Epiglottis
- D. Larynx

Ans: D

80. The contractile proteins in a muscle are

- A. Actin and myosin
- B. Actin and tropomyosin
- C. Myosin and troponin
- D. Troponin and tropomyosin

Ans: A

81. Compared to warm air, cool air can hold

- A. More water vapour
- B. Less water vapour
- C. The same amount of water vapour
- D. Temperature is unimportant here

Ans: B

82. The contribution of water while determining the body weight

- A. 70%
- B. 50%
- C. 80%
- D. 90%

Ans: A

83. Caloric value of a boiled egg.

- A. 80 kcl
- B. 100 kcl
- C. 150 kcl
- D. 120 kcl

Ans: A

84. To stay healthy we need how many litres of water everyday?

- A. 3 l
- B. 8 l
- C. 6 l
- D. 2.5 l

Ans: D

85. Find out the vitamin which helps in recovery of muscle cramps?

- A. Vitamin a

- B. Vitamin b
- C. Vitamin d
- D. Vitamin e

Ans: D

86. Name the essential mineral which is needed for muscle and nerve function

- A. Chloride
- B. Calcium
- C. Phosphorous
- D. Fluoride

Ans: A

87. The recommended fat percentage for men for optimum health

- A. 30% of total body weight
- B. 20% of total body weight
- C. 10% of total body weight
- D. 80% of total body weight

Ans: A

88. Pyorrhea affects which part of the body

- A. Ear
- B. Eyes
- C. Tongue
- D. Teeth

Ans: D

89. Radiant is the main physical hazard in _____ industries

- A. Jute & cotton
- B. Glass & steel
- C. Mining

D. Petroleum

Ans: B

90. The common disease due to prolonged exposure to polluted air

A. Asthma

B. Chronic bronchitis

C. Skin diseases

D. Chest pain

Ans: B

91. Deficiency of vitamin b1 causes?

A. Beriberi

B. Scurvy

C. Rickets

D. Jaundice

Ans: A

92. Strongest muscles of man found in:

A. Wrist

B. Finger

C. Jaw

D. Leg

Ans: C

93. Hepatitis a virus attacks which organ of the human body?

A. Heart

B. Lungs

C. Liver

D. Kidney

Ans: C

94. What element is added to water to prevent tooth decay?

- A. Chlorine
- B. Fluoride
- C. Sugar
- D. None of these

Ans: B

95. Hydrophobia affects which part of the human body

- A. Cardio vascular system
- B. Central nervous system
- C. Skeletal system
- D. Respiratory system

Ans: B

96. The amount of blood pumped by the left or right ventricle of the heart per beat is called

- A. Blood flow
- B. Stroke volume
- C. Blood volume
- D. Cardiac output

Ans: B

97. Study of science of human motion

- A. Bio mechanics
- B. Kinesiology
- C. Physiology
- D. Psychology

Ans: B

98. Which of the following does not relate with muscle function

- A. Antagonist
- B. Agonist
- C. Stabilizer
- D. Activator

Ans: D

99. Which part of the brain controls respiration?

- A. Cerebral cortex
- B. Medulla oblongata
- C. Cerebellum
- D. Cerebrum

Ans: B

100. Muscle fatigue is caused by the accumulation of

- A. Pyruvic acid
- B. Lactic acid
- C. Oxalic acid
- D. Uric acid

Ans: B

101. Which one of the following organs excretes water, fat and various catabolic wastes?

- A. Kidney
- B. Skin
- C. Spleen
- D. Salivary glands

Ans: A

102. Metabolism is the term used to indicate

- A. the exchange of gases in the lungs
- B. the store of oxygen in the muscles
- C. the chemical changes take place in the body
- D. internal respiration

Ans:C

103. Heart failure is due to

- A. excess of cardiac output
- B. lack of cardiac output
- C. both a&b
- D. none of these

Ans: B

104. Fast twitch muscle fibers are

- A. white muscle fibers
- B. red muscle fibers
- C. both a & b

D. black muscle fibers

Ans:A

105. The fuel food of human body are

A. fat & protein

B. fat & carbohydrate

C. protein & carbohydrate

D. vitamins & minerals

Ans: B

106. A rich source of carbohydrate is

A. cereals

B. pulse

C. wheat

D. milk

Ans: A

107. The shape of the heart is

A. round

B. cone

C. triangular

D. shapeless

Ans:C

108. The deficiency of vitamin k causes

A. rickets

B. anemia

C. prolonged blood clotting time

D. none of these

Ans:C

109. Veins carry blood

- A. from the heart
- B. in to the heart
- C. both a& b
- D. none of these

Ans: B

110. The study of joints is called

- A. osteology
- B. arthrology
- C. myology
- D. neurology

Ans: B

111. The study of the functions of the normal human body is called

- A. physiology
- B. botany
- C. anatomy
- D. zoology

Ans:A

112. Biceps muscles are situated at

- A. upper limb
- B. lowerlimb
- C. back
- D. neck

Ans:A

113. Cerebellum is a part of

- A. Digestive system
- B. Muscular system
- C. Brain
- D. Endocrine system

Ans:C

114. The strongest muscle of the human body is

- A. rectus femoris
- B. soleus
- C. biceps
- D. triceps

Ans:A

115. Diarthrosis is

- A. freely movable joint
- B. slightly movable joint
- C. immovable joint
- D. sliding joints

Ans:A

116. It has been observed that the astronauts lose substantial quantity of calcium through urine during space flight. This is due to

- A. Hyper gravity
- B. Microgravity
- C. Intake of dehydrated food tablet
- D. Low temperature in cosmos

Ans: B

117. Cutting and peeling of onion bring tears to the eyes because of the presence of

- A. Sulfur in the cell
- B. Carbon in the cell
- C. Fat in the cell
- D. Amino acid in the cell

Ans:A

118.the contractile proteins in a muscle are

- A. Actin and myosin
- B. Actin and tropomyosin
- C. Myosin and troponin
- D. Troponin and tropomyosin

Ans:A

119. Which of the following is not an enzyme?

- A. Amylase
- B. Pepsin
- C. Somatotropin
- D. Trypsin

Ans:C

110. Cartilage present in body is

- A. A muscular tissue
- B. An epithelial tissue
- C. A connective tissue
- D. A germinal tissue

Ans:C

112. Which one of the glands in human body produces the growth hormone (somatotropin)?

- A. Adrenal
- B. Pancreases
- C. Pituitary
- D. Thyroid

Ans:C

113. Cell or tissue death within a living body is called as

- A. Neutrophilia
- B. Nephrosis
- C. Necrosis
- D. Neoplasia

Ans:C

114. Sweating during exercise indicates operation of which one of the following processes in the human body?

- A. Enthalpy
- B. homeostasis
- C. Phagocytosis
- D. Osmoregulation

Ans: B

115. In which part of the human body is the smallest bone found?

- A. Wrist
- B. Palm
- C. Nose
- D. Ear

Ans :D

116. The other name for knee cap is -

- A. Clavicle

- B. Patella
- C. Radius
- D. Femur

Ans: B

117. If bilirubin is high in human body, which of the following organs is affected?

- A. Pancreas
- B. Liver
- C. Kidney
- D. Small intestine

Ans: B

118. About how many bones does a newborn baby have?

- A. 206
- B. 270
- C. 225
- D. 190

Ans: B

119. The function of trypsin is to

- A. Break down fats
- B. Synthesize proteins
- C. Break down proteins
- D. Break down carbohydrates

Ans:C

120. Muscle fatigue is caused by the accumulation of

- A. Pyruvic acid
- B. Lactic acid
- C. Oxalic acid

D. Uric acid

Ans: B

121. Dehydration in human body is caused due to the loss of -

A. Vitamins

B. Salts

C. Hormones

D. Water

Ans:D

122. The least distance of distinct vision (near point) of normal human eye is

A. 25 cm

B. 50 cm

C. 10 cm

D. 40 cm

Ans:A

123. In which of the following are antibodies formed?

A. Red blood cells

B. Platelets

C. Plasma cells

D. Donnan's membrane

Ans:C

124. Headquarters of world health organization?

A. Geneva,

B. Vienna,

C. Newyork

D. Washington

Ans:A

125. World health day?

- A. April 7
- B. May 7
- C. Aril 8
- D. May 8

Ans:A

126. Theme of world health day 2016?

- A. Beat diabetes
- B. Beat cancer
- C. Prevent hepatitis
- D. beat polio

Ans:A

127. When was first world health day celebrated?

- A. 1950
- B. 1960
- C. 1955
- D. 1948

Ans: D

128. The common disease due to prolonged exposure to polluted air?

- A. Lung cancer
- B. Chronic bronchitis
- C. Hepatitis B
- D. Cough

Ans: B

129. Which is the first asian country to eliminate mother – to – child hiv transmission?

- A. India
- B. Thailand
- C. Japan
- D. Singapore

Ans: B

130. Most polluted country in the world?

- A. China
- B. USA
- C. Brazil
- D. Indonesia

Ans:A

131. Day against child labor?

- A. June 12
- B. April 1
- C. July 1
- D. May 12

Ans:A

132. Cleanest country in the world?

- A. Iceland
- B. Sweden
- C. Singapore
- D. Malaysia

Ans: A

133. Hepatitis a disease caused by

- A. Bacteria
- B. Virus
- C. Fungus
- D. Amoeba

Ans: B

134. The term rabies is related to

- A. Malaria
- B. Tuberculosis
- C. Hepatitis
- D. Hydrophobia

Ans: D

135. Monovalent vaccination is to prevent

- A. HIV
- B. Tetanus,
- C. Chickenpox,
- D. Diphtheria

Ans: B

136. Vitamin b1 is also known as

- A. Calcium,
- B. Phosphorous
- C. Potassium
- D. Thiamine

Ans:D

137. Fetal alcoholic syndrome is associated with which of the following

- A. Leukemia,
- B. Hepatitis,

- C. Tetanus,
- D. Developmental disabilities

Ans: D

138. Other than spreading malaria, anopheles mosquitoes are also vectors of

- A. Dengue fever
- B. Filariasis
- C. Encephalitis
- D. Yellow fever

Ans: B

139. Pyorrhoea is a disease of the

- A. Nose,
- B. Gums,
- C. Heart,
- D. Lungs

Ans: B

140. Normal adult human male has

- A. 10 gram of hemoglobin/100 gram of blood,
- B. 14 gram of hemoglobin/100 gram of blood,
- C. 18 gram of hemoglobin/100 gram of blood,
- D. 24 gram of hemoglobin/100 gram of blood

Ans: B

141. Night blindness is caused by lack of which vitamin?

- A. Vitamin a,
- B. Vitamin b,
- C. Vitamin c,
- D. Vitamin d

Ans:A

142. Oxygen in our blood is transported by a protein named

- A. Hemoglobin,
- B. Keratin,
- C. Collagen,
- D. Myoglobin

Ans:A

143. The project 'sankalp' is associated with the elimination of

- A. Polio,
- B. HIV, AIDS,
- C. Tetanus
- D. Malaria

Ans: B

144. Clotting of blood required for which vitamin?

- A. Vitamin b,
- B. Vitamin c,
- C. Vitamin d,
- D. Vitamin k

Ans:D

145. The longest bone in the human body is-

- A. Femur
- B. Humerus
- C. Radius
- D. Tibia

Ans:A

146. Which of the following virus is responsible for diarrhea among infants and young children?

- A. Zika virus,
- B. Junin virus,
- C. Rota virus,
- D. Mega virus

Ans:C

147. The smallest bones in the human body are found in the

- A. Ear
- B. Eyes,
- C. Stomach,
- D. Leg

Ans:A

148. What is the approximate time required for a heart-beat?

- A. 0.5 second,
- B. 0.8 second,
- C. 0.5 minute
- D. 1 minute

Ans: B

149. Barbell curl muscle exercises mainly effects

- A. A. full biceps/fore arms muscles
- B. B. inner biceps muscles
- C. C. Triceps muscles
- D. D. hamstrings muscles.

Ans: A

150. During the warmer days, heat is absorbed by the body through

- A. A. conduction
- B. B. evaporation
- C. C. radiation
- D. D. convection

Ans: C



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