SAMPLE HINTS AND SOLUTIONS

INSTITUTE NAME & LOGO

MHT-CET – EXAM YEAR

Time : 90 Min	**Bio : Full Portion Paper**	**Marks : 100**

Hints and Solutions

101) Ans: **D)** De Vries, Correns and Tschermak

102) Ans: **C)** Second phase of life cycle of silk moth
Sol: The second stage of life cycle of silk moth is called caterpillar.

103) Ans: **C)** in its front and behind respectively
Sol: Central sulcus is present between the frontal and parietal lobes of the cerebral hemispheres. Motor area is in front of frontal lobe and sensory area behind parietal lobe.

104) Ans: **C)** Decomposers

105) Ans: **B)** 64

106) Ans: **C)** Filters

107) Ans: **A)** light
Sol: There is a linear relationship between rate of photosynthesis and light intensity. Rate of photosynthesis increases with increase in light intensity. But at a very high light intensity, it causes breakdown of chlorophyll and decreases the rate of photosynthesis.

108) Ans: **C)** 5-30%

109) Ans: **A)** Cistron
Sol: It is largest segment of DNA responsible for specifying one polypeptide chain or enzyme.

110) Ans: **C)** somatic sensory fibres
Sol: The dorsal root of the spinal cord contains fibres which brings sensation from somatic area.

111) Ans: **C)** heterozygous for two traits

112) Ans: **C)** Glomeruli

113) Ans: **B)** Glucose

114) Ans: **A)** Normal menstrual cycle is present
Sol: Turner's syndrome is found in genetically sexual abnormality in human female. Such females are characterized by poor development of ovaries of breast and no menstruation.

115) Ans: **D)** Beadle and Tatum

116) Ans: **C)** 2
Sol: Carboxylation takes place twice in C_4 cycle. First carboxylation is done by phosphoenol pyruvate and second, in bundle sheath cell, by Ribulose 1, 5 bi-phosphate

117) Ans: **A)** HDN

118) Ans: **A)** immunity

119) Ans: **D)** Luteinising hormone

120) Ans: **A)** Hemophilia
Sol: Blood clotting factor - VIII is used to treat hemophilia.

121) Ans: **D)** A bacterial gene expression system

122) Ans: **B)** Sanctuary
Sol: A protected area reserved for conservation of animals by profiting certain human activities is called sanctuary

123) Ans: **D)** Nucleoplasm

124) Ans: **B)** Holoparasite
Sol: The parasite which completely depends on host is called holoparasite.

125) Ans: **D)** High aspartic acid, low nitrogen and low sugar content.

126) Ans: **B)** Alec Jeffrey
Sol: Alec Jeffrey, a British geneticist at the university of Leicester UK, developed the technique of DNA fingerprinting in 1985-86, hence, he is called as father of DNA fingerprinting.

127) Ans: **A)** Golden age of reptiles
Sol: Mesozoic era is dominated by reptiles, hence called as golden age of reptiles.

128) Ans: **D)** cotyledons
Sol: Bea is non-endospermic seed. Thus in bean, food is stored in cotyledons.

129) Ans: **B)** nectar

130) Ans: **A)** India and china
Sol: About 70% of the world's live-stock population is present in India and china

131) Ans: **A)** CH_4
Sol: Methane of prebiotic life reacts with various substances from which first nucleotides were produced hence CH_4 is considered as most important in origin of life.

132) Ans: **D)** uriniferous tubule

133) Ans: **D)** Inbreeding depression

134) Ans: **A)** Dolly
Sol: Dolly sheep is produced by cloning method and not by trans-genesis.

135) Ans: **B)** more than $91^{\circ}C$
Sol: More than $91^{\circ}C$

136) Ans: **C)** AB

137) Ans: **A)** Elton

138) Ans: **D)** plant rooted in the soil on which the part of the other plant is inserted
Sol: Part of the other plant inserted on the rooted plant is called scion

139) Ans: **C)** Charles Darwin
Sol: Theory of Natural selection was put forth by Charles Darwin.

140) Ans: **A)** Red flowers

141) Ans: **A)** Protective adaptation
Sol: Mimicry is mainly a protective adaptation in order to obtain advantage especially against predators. In this adaptation, the animal (mimic) is capable to develop some resemblance with other species (Model)

142) Ans: **D)** colchicine

143) Ans: **C)** Uric acid

144) Ans: **D)** Chemosynthetic bacteria

145) Ans: **D)** Hybridization

146) Ans: **C)** SNPS
Sol: Genetic difference in the people is due to SNPS (Single Nucleotide polymerase). More than 3 million SNPS have been identified in human genome. SNPS are used as genetic markers.

147) Ans: **B)** Bateson

148) Ans: **D)** Cross breeding
Sol: Mating between superior male of one breed and superior female of another breed is called cross breeding

149) Ans: **A)** in the grana of chloroplast

150) Ans: **C)** Heparin

151) Ans: **D)** To develop immunity against common fowl diseases
Sol: Young birds are highly susceptible to pathogenic diseases. Therefore to develop immunity against pathogenic diseases vaccination to young birds is needed.

152) Ans: **D)** 5600

153) Ans: **B)** Socio-economic factors
Sol: High birth rate throughout the world and particularity in developing courtiers is mainly due to socio-economic factors

154) Ans: **B)** Man
Sol: Primitive man appeared in Pliocene epoch of Cenozoic era.

155) Ans: **C)** Biogas

156) Ans: **C)** A person unable to identify red and green colours
Sol: The person which is unable to identify red and green colours is called colour blind, both the colours appear to him/her as grey.

157) Ans: **A)** Zonation

158) Ans: **D)** maintenance of homoeostasis with environment

159) Ans: **D)** 1-2 mm tungsten or gold particle coated with DNA

160) Ans: **A)** 5' TACGG

161) Ans: **C)** Zymase

162) Ans: **C)** A. mellifera
Sol: Apis mellifera is European variety of honey bee give maximum honey, hence it is used world wide for apiculture

163) Ans: **B)** hydrogen
Sol: Respiration is biological oxidation which takes place by removal of hydrogen from the oxidizing substrate and combines with oxygen to form water

164) Ans: **C)** 0.7
Sol: $RQ = \frac{102\ CO_2}{145\ O_2} = 0.7$

165) Ans: **D)** Corpus spongiosum

166) Ans: **C)** exergonic process
Sol: Respiration cannot be endothermic as energy is not absorbed and it cannot be anabolic as it is a breakdown process. Respiration is an intracellular process of oxidation - reduction reactions in which the complex organic food materials are broken down in a step wise manner to form simpler end products with the release of energy and CO_2 . Respiration is thus an exergonic process.

167) Ans: **C)** telocentric

168) Ans: **D)** Wheat

169) Ans: **B)** activate chlorophyll

170) Ans: **A)** 0%
Sol: Ram is haemophilic X^hC, hence he transmits the X^h chromosome to his daughter while son receives X chromosome for his mother. Therefore chances of son to be haemophilic is 0%.

171) Ans: **A)** Nature of sperm
Sol: In most of dioecious animals, male are heterogametic and produce two types of sperm. Therefore sex of the child is decided by type of sperm fertilize with egg.

172) Ans: **B)** phosphate
Sol: Energy released during respiration is in form of ATP. In ATP, energy is stored in the form of high energy phosphate bond. When high energy phosphate bond is broken, large amount of energy is released.

173) Ans: **A)** antagonistic
Sol: Sympathetic nervous system works during stress, pain, anger, fear or emergency. Parasympathetic nervous system works during rest and brings about relaxation, comfort and pleasure. Thus, sympathetic and parasympathetic nervous system are antagonistic.

174) Ans: **B)** 70

175) Ans: **A)** RrYy

176) Ans: **C)**
Gametogenesis → Copulation → Fertilization → Emb ryogenesis → Parturition and Milk Secretion
Sol:
Gametogenesis → Copulation → Fertilization → Emb ryogenesis → Parturition and Milk Secretion

177) Ans: **C)** vagina

178) Ans: **B)** cyst

179) Ans: **B)** STH : thyroxine
Sol: Synergistic means supplementary with each other. Somatotrophic hormone and thyroxine both are responsible for general growth of body, hence they are synergistic.

180) Ans: **C)** iron
Sol: Cytochrome are iron containing compounds. When e^- are taken up by the cytochrome, ferric compound gets reduced to ferrous and as it gives the electrons to next cytochrome in the chain it gets reoxidized to ferric.

181) Ans: **B)** photochemical conversion
Sol: Chlorophyll is a photosynthetic pigment which absorbs light energy and converts it into chemical energy

182) Ans: **B)** Lysine and tryptophan

183) Ans: **A)** Blood

184) Ans: **D)** Six
Sol: Geological time scale is divided into 6 major sub divisions, called era.

185) Ans: **D)** fleshy fruiting body

186) Ans: **C)** Rohu
Sol: Rohu or Labeo is major fresh water fish

187) Ans: **D)** Mg++
Sol: Magnesium ion is a common activator of respiratory enzymes

188) Ans: **B)** different types of cones along with the different types of colour sensory centres in the brain
Sol: The three types of cones contain their own characteristic photo-pigments which respond to red, green and blue lights. Various combination of these cones and their photopigments produce sensation of different colours.

189) Ans: **D)** supply and collection of blood from all parts of the body except the lungs

190) Ans: **B)** widal

191) Ans: **D)** More oxygen to decompose them

192) Ans: **D)** Java - ape - man
Sol: The Java - ape man had the smallest cranial capacity amongst Homo i.e. about 940cc, Cro-Magnon 1660cc, Neanderthal-1400cc, Peking man-1075cc.

193) Ans: **C)** mice survived and showed dead S-cells

194) Ans: **A)** carcinomas

195) Ans: **B)** It involves use of only one male gametes

196) Ans: **C)** Biological control

197) Ans: **A)** 4 sporangium
Sol: A typical anther consists of four microsporangia (tetra sporangiate) and such anther is called dithecous.

198) Ans: **B)** Subcutaneous

199) Ans: **C)** AIDS

200) Ans: **D)** modern biotechnology revolves around genetic engineering