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MECEE BL

Model Entrance Exam

(Model: V)

(Set: B)

Date: Ashar 7th 2082 (Saturday) **Duration – 3 hrs**

Venue: NAME **Time – 11:00 AM**

INSTRUCTIONS

There are 200 multiple-choice questions, each having four choices of which only one choice is correct.

Fill ■ the most appropriate one.

1. The very early stage of HIV infection before antibody production is called:

a) Latent period b) Incubation period c) Window period d) Safe period

2. Which structurally is directly affected in typhoid fever?

a) Tongue b) Stomach c) Rectum d) Payer's patches

3. Breast cancer is an example of:

a) Sarcoma b) Adenoma c) Carcinoma d) Lymphoma

4. Stenson's duct opens at:

a) Upper first premolar b) Upper second premolar

c) Upper first molar d) Upper second molar

5. _____ is located between two pleural sacs and is the central compartment of the thoracic cavity?

a) Hilum b) Pleura c) Mediastinum d) Thoracic cage

6. The total number of orifices for outgoing and incoming of urine through the bladder is

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

7. Pituitary hormone triggering the male testes to generate sperm and in females, triggering follicular development on a monthly basis is

a) Prolactin b) GH c) FSH d) LH

8. Ventral root of spinal nerve is composed of

a) Somatic motor and visceral sensory fibres

b) Somatic sensory and visceral sensory fibres

c) Somatic motors and visceral motor fibres

d) Somatic sensory and visceral motor fibres

9. Epiboly results in:

a) Formation of yolk plug b) Formation of blastopore

c) Movement of chorda-mesodermal cells d) Formation of notochord

10. Macula lutea is a part of

a) Optic nerve b) Sclerotic c) Choroid d) Retina

11. The head of the rib which articulates with the transverse process of thoracic vertebrae is called

a) Capitulum b) Tuberculum c) Centrum d) Shaft

12. The external female genitalia are collectively called the:

a) Labia b) Vulva c) Clitoris d) Mons pubis

13. Post caval opening in right auricle is guarded by:

a) Atrio-ventricular valve b) Tricuspid valve

c) Bicuspid valve d) Eustachian valve

14. Number of lobes in the liver of man and rabbit are:

a) 3 and 4 respectively b) 4 and 5 respectively

c) 5 and 4 respectively d) 4 and 3 respectively

15. Ends of long bones are covered with:

a) Muscles b) Ligaments c) Hyaline cartilage d) Elastic cartilage

16. Lining of trachea is made up of:

a) Simple squamous epithelium b) Stratified epithelium

c) Pseudostratified epithelium d) Stratified cuboidal epithelium

17. Which structure of myelinated neurons carry out transmission of signals?

a) Schwann cell b) Nodes of Ranvier c) Axolemma d) Axon hillock

18. What separates one sarcomere from another?

a) I-band b) H-zone c) Z-discs d) A-band

19. Which is true about malarial parasite?

a) Malaria transmitted by Anopheles discovered by Laveran

b) Oocyst formed in stomach wall of human

c) Haemozoin derived from globin part of haemoglobin

d) Ex-flagellation associated with formation of microgametes

20. Sporozoit of *Plasmodium* is:

a) Infective stage and is uninucleated

b) Infectivestage and is multinucleated

c) Pathogenic stage and is uninucleated

d) Pathogenic stage and is multinucleated

21. Which of t he following is correct option in *Pheretima*?

a) Cuticle – chitinous and non-albumionid

b) Arrangement of setae is called oligochaetine

c) Post typhlosolar region has no villi and typhlosole

d) Pygidium found in pre-clitellar region

22. In *Pheretima*, which one is not correct?

a) Septal nephridia poured waste into intestine

b) Both septal and pharyngeal nephridia conserve water

c) Blood is red, due to haemoglobin dissolve in coelomic fluid

d) 8-10 pairs of nerves arise from cerebral ganglia

23. Sperm formation in earthworm takes place in

a) testes b) testis sac

c) spermiducal funnel d) seminal vesicles

24. Select the wrong pair

a) Haldane – Hot dilute soup b) Oparin – Protobiont

c) Fox – Coacervates d) Spallanzni – Abiogenesis

25. Common origin of man and chimpanzee is best shown by

a) Dental formula b) Cranial capacity

c) Binocular vision d) Chromosome number

26. What type of respiration tadpole of frog?

a) Branchial respiration b) Bucco-pharyngeal respiration

c) Cutaneous respiration d) Pulmonary respiration

27. Sinus venosus is found associated on…… of frog

a) dorsal surface b) ventral surface c) left side d) right side

28. The example of industrial melanism has been cited in which one of the following theory of organic evolution?

a) Lamarckism b) Darwinism

c) Mutation theory d) Modern synthetic theory

29. Vesa efferentia in frog's testis open into the

a) transverse collecting tubules b) urinogenital duct

c) bidder's canal d) seminal vesicle

30. Main basis of Neo-Darwinism is

a) struggle for existence b) variations c) survival of the fittest d) gene theory

31. An important characteristic that hemichordates share with chordates is

a) absence of notochord b) ventral tubular nerve cord

c) pharynx with gill slits d) pharynx without gill slits

32. Correctly matched set of phylum, class and example is

a) porifera – calcarea– *Obelia* b) mollusca – cephalopoda – pila

c) platyhelminthes - turbellaria– planaria d) arthropoda – diplopoda – scolopendra

33. Trematodes are commonly called:

a) eddy worms b) tapeworms c) flukes d) sandworms

34. Totipotent cells of sponge

a) pinacocytes b) thesocytes c) choanocytes d) archaeocytes

35. Which of the following adaptive mechanism does not belong to stereotype behaviour?

a) Reflexes b) Taxes c) Instinct d) Swimming

36. Suctorial mouth is present in which group of vertebrates?

a) Apoda b) Teleost c) Cyclostomates d) Elasmobranch

37. *Limulus* belongs to class

a) Merostomata b) Crustacea c) Onycophora d) Insecta

38. Which of the following is not a fish?

a) Cuttle fish b) Sucker fish c) Flat fish d) Pipe fish

39. Which one of the following is not a characteristic feature of mammal?

a) Diphyodont teeth

b) Seven cervical vertebrae

c) Dicondylic skull with 10 pairs of cranial nerves

d) Left aortic arch in the circulatory system

40. What do you understand by scansorial animals?

a) Burrowing type b) Climbing type c) Jumping type d) Running type

41. Folds of plasma membrane in bacteria are known as

a) episomes b) mesosomes c) sphaerosomes d) acrosomes

42. Most of the plant virus has

a) DNA only b) RNA only

c) both DNA and RNA d) coiled nucleus

43. Corticolous lichen grow on

a) wood b) bark of tree c) soil d) waste land

44. Most common and advanced type of conjugation in Spirogyra is

a) scalariform b) indirect lateral c) direct lateral d) apomixis

45. An algae used for quick sewage disposal is

a) ulothrix b) cladophora c) volvax d) chlorella

46. Apple scab disease is caused by

a) colletotrichum b) venturia c) puccinia d) ustilago

47. Rhizoids in thalloid forms like Marchetia are present on

a) dorsal surface b) ventral surface c) on margin d) everywhere

48. In pteridophytes circinate vernation is found in

a) rhizome b) rahis c) fruit d) leaf

49. Endosperm in gymnosperm is

a) generally haploid b) always haploid c) generally diploid d) always diploid

50. Plants with Haustoria are

a) parasites b) epiphytes c) insectivorous d) saprophytes

51. Which of the following is the edible underground stem?

a) sweet potato b) potato c) ground nut d) carrot

52. Unisexual flowers are found in

a) malvaceae b) cucurbitaceae c) liliaceae d) cruciferae

53. Endodermis mainly helps in

a) preventing water loss from stele b) provides protection

C) maintains protection d) all of the above

54. Cotton fiber is obtained from

a) epidermal tissue system b) vascular tissue system

c) meristematic tissue system d) ground tissue system

55. When phloem is present on both sides of the xylem the vascular bundle is called

a) collateral b) radial c) conjoint d) bicollateral

56. Guard cell differs from epidermal cell in having

a) mitochondria b) vacuoles c) cell wall d) chloroplasts

57. which one results in energy wastage?

a) photosynthesis b) transpiration c) photorespiration d) respiration

58. Sinks are related to

a) transport of materials b) stomata

c) enzymes d) phytochromes

59. Brown heart disease is due to deficiency of

a) iron b) boron c) potassium d) molybdenum

60. Largest amount of phosphate bond energy is produced in respiration during

a) anaerobic respiration B) fermintation by Yeast

c) glycolysis d) kreb cycle

61. pH of cytoplasma is

a) acidic b) alkaline c) slightly acidic d) strongly acidic

62. Folding of inner membrane of mitochondria are called

a) cisternae b) grana C) thylakoids d) cristae

63. Each quantasome contains……chlorophylls molecules

a) 60 b) 200 c) 230 d) 280

64. Which of the following plastids are commonly found in cells not exposed to light?

a) leucoplast b) chloroplast c) chromoplsat d) plastoquinone

65. Nucleoproterins in cell is synthesized by

a) nucleolosus b) nucleoplasm c) nuclear membrane d) outside the nucleus

66. Synapsis of homologous chromosomes starts at

a) centromere b) telomere c) at any points d) none

67. cell undergoes mitosis without any interruption when it has entered

a) s-phase b) G2-phase

c) at any time during mitosis d) G1-phase

68 .ideal material to study genetics is

a) housefly b) mosquito c) frog d) fruitfly

69. Organisms that are phenotypically similar but genotypically different are

a) heterozygous b) homozygous c) monozygous d) multizygous

70. genetic recombination is due to

a) fertilization and meiosis b) mitosis and meiosis

c) fertilization and mitosis d) only mitosis

71. No of hydrogen bonds between cytosine and guanine is

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

72. chromosome no in Downs syndrome is

a) 47. b) 46 c) 23 d) 45

73. Heterostyly is found in

a) Tea b) orchid c) malva d) primula

74. The smallest national park of Nepal is

a) Khaptad b) Rara c) Langtang d) Chitwan

75. Row of tree for preventing wind action is called

a) wind fall b) wind break c) wind wall d) wind dam

76. desearts can be converted into grassland by

A) oxylophytes b) psammophytes c) halophytes d) tropical trees

77. flow of energy in an ecosystem is

a) unidirectional b) bidirectional c) multidirectional d) polydirectional

78. culture media uses

a) coconut b) florigen c) vernalin d) azadiractin

79. Penicillin is used as antibiotics as it inhibits

a) cell wall formation b) protien synthesis

c) lipid synthesis d) both b and c

80. What is a transgenic organism?

a) An organism that evolved naturally

b) An organism with its own genes modified

c) An organism containing genes from another species

d) An organism that cannot reproduce

81. The IUPAC name of CH_3CN is:

a) acetonitrile b) cyanomethane

c) methyl cyanide d) ethanenitrile

82. Which of the following forces explain the boiling point of aldehydes and ketones?

a) Hydrogen bonding b) van der Waal's forces

c) Dipole-dipole attraction d) None of these

83. On exciting, Cl_2 molecules by UV light, we get

a) $Cl^{\bullet}$ b) Cl^{+} c) Cl^{-} d) all of these

84. Which of the following is last step in producing a new product?

a) pilot study b) decision

c) making and selling of product d) review

85. The compound $C_4H_{10}O$ can show

a) metamerism b) functional isomerism

c) position isomerism d) All of these

86. Which of the following represents the correct reaction?

a) $CH_4 + 2H_2O \xrightarrow{Ni} CO_2 + 4H_2$ b) $CH_4 + H_2O \xrightarrow{Ni} CO + 3H_2$

c) $CH_4 + H_2O \xrightarrow{Ni} CH_3OH + H_2$ d) $CH_4 + H_2O \xrightarrow{Ni} HCHO + 2H_2$

87. Paraffins are soluble in

a) Distilled water b) Benzene c) Methanol d) Sea water

88. Before final drying of paper, the amount of H_2O is reduced to:

a) 5-6% b) 99.5% c) 60-65% d) 10%

89. When acetylene is passed over heated iron tube, the product obtained is –

a) C_2H_2 b) C_4H_4 c) C_6H_6 d) C_8H_8

90. Which of the following is liquid at room temperature (b.p. is shown against it)?

a) $CH_3I \rightarrow 42^oC$ b) $CH_3Br \rightarrow 3^oC$ c) $C_2H_5Cl \rightarrow 12^oC$ d) $CH_3F \rightarrow -78^oC$

91. Mg reacts with RBr best in

a) $C_2H_5OC_2H_5$ b) $C_6H_5OCH_3$

c) $C_6H_5N(CH_3)_2$ d) Equally in all the three

92. Butane-2-ol is

a) primary alcohol b) secondary alcohol c) tertiary alcohol d) aldehyde

93. Phenol is less acidic than_____.

a) ethanol b) *o*–nitrophenol c) *o*-methylphenol d) *o*-methoxyphenol

94. The reaction given below is known as:

$$C_2H_5ONa + IC_2H_5 \rightarrow C_2H_5OC_2H_5 + NaI$$

a) Kolbe's synthesis b) Wurtz synthesis

c) Williamson's synthesis d) Grignard's synthesis

95. Which aldehyde cannot be obtained by Rosenmund's reaction?

a) CH_3CHO b) HCHO c) CH_3CH_2CHO d) All of these

96. Mixture of chlorobenzene and aniline can be separated by:

a) ether b) dil. HCl c) NaOH solution d) alcohol

97. Novolac is

a) cross-linked polymer b) linear polymer

c) addition polymer d) synthetic rubber

98. Which of the following is not a target molecule for drug function in body?

a) Carbohydrates b) Lipids c) Vitamins d) Proteins

99. The most abundant element in human body is:

a) oxygen b) carbon

c) hydrogen d) nitrogen

100. What is the mass of 1 molecule of CO?

a) 2.325×10^{-23}g b) 4.65×10^{-23} g c) 3.732×10^{-23} g d) 2.895×10^{-23} g

101. Calculate the volume at STP occupied by 240 gm of SO_2.

a) 64 b) 84 c) 59 d) 73

102. Which of the following properties of atom could be explained correctly by Thomson Model of atom?

a) Overall neutrality of atom.

b) Spectra of hydrogen atom.

c) Position of electrons, protons and neutrons in atom.

d) Stability of atom

103. Degenerate orbitals means:

a) orbitals having same energy b) orbitals having same shape

c) orbitals having same size d) orbitals of same subshell

104. The angle between two covalent bonds is maximum in:

a) CH_4 b) H_2O

c) CO_2 d) NH_3

105. Which of the following chemicals is used to prevent quick setting of cement?

a) Gypsum b) Fly ash c) Sodium salt d) Vinyl resins

106. The elements with zero electron affinity are

a) Boron and Carbon b) Beryllium and Helium

c) Lithium and Sodium d) Fluorine and Chlorine

107. A pair of compounds which have odd electrons in the group NO, CO, ClO_2, N_2O_5, SO_2 and O_3 are

a) NO and ClO_2 b) CO and SO_2 c) ClO_2 and CO d) SO_2 and O_3

108. A neutral molecule XF_3 has a zero-dipole moment. The element X is most likely

a) chlorine b) boron c) nitrogen d) carbon

109. Acetic acid exists as dimer in benzene due to

a) condensation reaction b) hydrogen bonding

c) presence of carboxyl group d) presence of hydrogen atom at α-carbon

110. Pressure of a mixture of 4 g of O_2 and 2 g of H_2 confined in a bulb of 1 litre at 0°C is

a) 25.215 atm b) 31.205 atm c) 45.215 atm d) 15.210 atm

111. During isothermal expansion of an ideal gas, its

a) internal energy increases b) enthalpy decreases

c) enthalpy remains unaffected d) enthalpy reduces to zero

112. For the following reaction in gaseous phase

$CO(g) + \frac{1}{2} O_2(g) \rightarrow CO_2(g)$, K_P/K_C is

a) $(RT)^{1/2}$ b) $(RT)^{-1/2}$ c) (RT) d) $(RT)^{-1}$

113. In which of the following set of compounds oxygen has highest and lowest oxidation state?

a) Highest = KO_2, lowest = H_2O_2 b) Highest = OF_2, lowest = H_2O_2

c) Highest = OF_2, lowest = KO_2 d) Highest = KO_2, lowest = H_2O_2

114. An *X* molal solution of a compound in benzene has mole fraction of solute equal to 0.2. The value of *X* is

a) 14 b) 3.2 c) 1.4 d) 2

115. For the titration of Na_2CO_3 and H_2SO_4, the suitable indicator is:

a) phenolphthalein b) methyl orange c) litmus d) both a and b

116. Daniell's cell is:

a) Zn-Cu cell b) Ag-Cu cell c) Li-Cu cell d) Zn-Ag cell

117. An increase in the concentration of the reactants of a reaction leads to change in:

a) heat of reaction b) threshold energy c) collision frequency d) activation energy

118. Which of the following statements do not define the characteristic property of water "Water is a universal solvent"?

a) It can dissolve maximum number of compounds

b) It has very low dielectric constant

c) It has high liquid range

d) None of these

119. In Solvay ammonia process, sodium bicarbonate is precipitate due to

a) presence of NH_3 b) reaction with CO_2

c) reaction with brine solution d) reaction with NaOH

120. Plaster of Paris on making paste with little water sets to hard mass due to formation of

a) $CaSO_4$ b) $CaSO_4.1/2H_2O$ c) $CaSO_4.H_2O$ d) $CaSO_4.2H_2O$

121. Which of the following will precipitate first when aqueous solution containing sulphate ions are added?

a) Mg^{2+} b) Ca^{2+} c) Sr^{2+} d) Ba^{2+}

122. Charcoal is used to decolourize the substance because:

a) it reduces colour material b) it oxidises colour material

c) it adsorbs colour material d) it absorbs colour material

123. Which of the following isotope of carbon is radioactive?

a) ^{12}C b) ^{13}C c) ^{14}C d) All of these

124. 'Plumbago' is the common name of:

a) diamond b) graphite c) charcoal d) lamp black

125. Which of the following is nitric anhydride?

a) NO b) N_2O_5 c) NO_2 d) N_2O_3

126. A deep brown gas is formed by mixing two colourless gases which are

a) NO_2 and O_2 b) N_2O and NO c) NO and O_2 d) NH_3 and HCl

127. Cupellation process is used in the metallurgy of:

a) Cu b) Fe c) Ag d) Al

128. Oxygen gas can be prepared from solid $KMnO_4$ by:

a) treating the solid with H_2 gas b) strongly heating the solid

c) dissolving the solid in dil. H_2SO_4 d) dissolving solid in dil. HCl

129. Which one is most stable to heat?

a) HClO b) $HClO_2$ c) $HClO_3$ (d) $HClO_4$

130. Mercurous ion is represented as:

a) Hg^+ b) Hg^{2+} c) Hg_2^{2+} d) Hg_2^+

131. What is the angle between $\vec{P}$ and the resultant of $(\vec{P}+\vec{Q})$ and $(\vec{P}-\vec{Q})$?

a) Zero b) $\tan^{-1}(P/Q)$

c) $\tan^{-1}(Q/P)$ d) $\tan^{-1}(P-Q)/(P+Q)$

132. A body is released from a great height and falls freely towards the earth. Another body is released from the same height exactly one second later. The separation between the two bodies, two seconds after the release of the second body is

a) 4.9 m b) 9.8 m c) 19.6 m d) 24.5 m

133. A fighter plane is moving in a vertical circle of radius 'r'. Its minimum velocity at the highest point of the circle will be

a) $\sqrt{3gr}$ b) $\sqrt{2gr}$ c) $\sqrt{gr}$ d) $\sqrt{gr/2}$

134. An object is thrown along a direction inclined at an angle of 45° with the horizontal direction. The horizontal range of the particle is equal to

a) Vertical height b) Twice the vertical height

c) Thrice the vertical height d) Four times the vertical height

135. The motion of a rocket is based on the principle of conservation of

a) Mass b) Kinetic energy

c) Linear momentum d) Angular momentum

136. The same retarding force is applied to stop a train. The train stops after 80 m. If the speed is doubled, then the distance will be

a) The same b) Doubled c) Halved d) Four times

137. The acceleration due to gravity is g at a point distant r from the centre of earth of radius R. If r < R, then

a) $g \propto r$ b) $g \propto r^2$ c) $g \propto r^{-1}$ d) $g \propto r^{-2}$

138. A simple pendulum, suspended from the ceiling of a stationary van, has time period T. If the van starts moving with a uniform velocity the period of the pendulum will be

a) Less than T b) Equal to 2T c) Greater than T d) Unchanged

139. The longitudinal strain is only possible in

a) Gases b) Fluids c) Solids d) Liquids

140. The radius of a soap bubble is increased from $\frac{1}{\sqrt{\pi}}$ cm to $\frac{2}{\sqrt{\pi}}$ cm. If the surface tension of water is 30 dynes per cm, then the work done will be

a) 180 ergs b) 360 ergs c) 720 ergs d) 960 ergs

141. A pendulum clock keeps correct time at 0°C. Its mean coefficient of linear expansion is αK^{-1}, then the loss in seconds per day by the clock if the temperature rises by t°C is

a) $\frac{1}{2}\alpha t \times 86400$ b) $\frac{\frac{1}{2}\alpha t \times 86400}{1 - \alpha t/2}$ c) $\frac{\frac{1}{2}\alpha t \times 86400}{1 + \alpha t/2}$ d) $\frac{\frac{1}{2}\alpha t \times 86400}{(1 - \alpha t/2)^2}$

142. In thermal equilibrium, the average velocity of gas molecules is

a) proportional to $\sqrt{T}$ b) proportional to T^2 c) proportional to T^3 d) zero

143. The internal energy of an ideal gas depends upon

a) specific volume b) pressure c) temperature d) density

144. First law of thermodynamics is given by

a) $dQ = dU + PdV$ b) $dQ = dU \times PdU$ c) $dQ = (dU + dV) \times P$ d) $dQ = PdU + dV$

145. An ideal gas at 27°C is compressed adiabatically to 8/27 of its original volume. If $\gamma = 5/3$, then the rise in temperature is

a) 450K b) 375K c) 225K d) 405K

146. A Carnot engine working between 300K and 600K has work output of 800J per cycle. What is the amount of heat energy supplied to engine form source per cycle?

a) 1800J/cycle b) 1000J/cycle c) 8000J/cycle d) 1600J/cycle

147. A ray of light incidents on a plane mirror at an angle of 30°. The deviation produced in the ray is

a) 30° b) 60° c) 90° d) 120°

148. The ratio of the refractive index of red light to blue light in air is

a) Less than unity

b) Equal to unity

c) Greater than unity

d) Less as well as greater than unity depending upon the experimental arrangement

149. The dispersive power of the material of lens of focal length 20 cm is 0.08. The longitudinal chromatic aberration of the lens is

a) 0.08 cm b) 0.08/20 cm c) 1.6 cm d) 0.16 cm

150. A wave front is a locus of

a) Constant amplitude b) Constant intensity

c) Constant phase d) Same wavelength

151. When a thin metal plate is placed in the path of one of the interfering beams of light

a) Fringe width increases b) Fringes disappear

c) Fringes become brighter d) Fringes becomes blurred

152. The diffraction effect can be observed in

a) Only sound waves b) Only light waves

c) Only ultrasonic waves d) Sound as well as light waves

153. The intensity of sound increases at night due to

a) increases in density of air b) decreases in density of air

c) low temperature d) none of these

154. A source and an observer approach each other with same velocity 50m/s. If the apparent frequency is 435Hz, then the real frequency is if velocity of sound in air is 330m/s?

a) 320Hz b) 360Hz c) 390Hz d) 420Hz

155. The distance between the nearest node and antinode in a stationary wave is

a) λ b) $\lambda/2$ c) $\lambda/4$ d) 2λ

156. A particle of mass m and charge q is placed at rest in a uniform electric field E and then released. The kinetic energy attained by the particle after moving a distance y is

a) qEy^2 b) qE^2y c) qEy d) q^2Ey

157. The dielectric constant of metal is

a) 1 b) greater than 1 c) zero d) infinite

158. An aluminium foil of negligible thickness is placed between two plates of parallel plate capacitor. Then its capacitance

a) decreases b) increases c) remains same d) becomes zero

159. When the current i is flowing through a conductor, the drift velocity is v. If 2i current is flowed through the same metal but having double the area of cross-section, then the drift velocity will be

a) v / 4 b) v / 2 c) v d) 4v

160. Three resistance of one ohm each are connected in parallel. Such connection is again connected with 2/3Ω resistor in series. The resultant resistance will be

a) $\frac{5}{3}\Omega$ b) $\frac{3}{2}\Omega$ c) 1Ω d) $\frac{2}{3}\Omega$

161. The resistance of 1 A ammeter is 0.018 Ω. To convert it into 10 A ammeter, the shunt resistance required will be

a)0.18 Ω b) 0.0018 Ω c) 0.002Ω d) 0.12Ω

162. Two bulbs of equal wattage, one having carbon filament and the other having a tungsten

filament are connected in series to the mains, then

a) Both bulbs glow equally b) Carbon filament bulb glows more

c) Tungsten filament bulbs glows more d) Carbon filament bulb glows less

163. An electron is revolving round a proton, producing a magnetic field of 16 weber/m in a circular orbit of radius 1Å. Its angular velocity will be

a) 10^{17} rad/sec b) $\frac{1}{2}\pi \times 10$ rad/sec c) $2\pi \times 10$ rad/sec d) $4\pi \times 10$ rad/sec

164. Two straight parallel wires, both carrying to ampere in the same direction attract each other with a force of 1×10^{-3} N. If both currents are doubled, the force of attraction will be

a) 1×10^{-3}N b) 2×10^{-3} N c) 4×10^{-3}N d) 0.25×10^{-3} N

165. A magnet is placed in iron powder and then taken out, then maximum iron powder is at

a) Some away from north pole b) Some away from south pole

c) The middle of the magnet d) The end of the magnet

166. Faraday's laws are consequence of conservation of

a) Energy b) Energy and magnetic field

c) Charge d) Magnetic field

167. A long horizontal metallic rod with length along the east-west direction is falling under gravity. The potential difference between its two ends will

a) Be zero b) Be constant

c) Increase with time d) Decrease with time

168. The kinetic energy of an electron which is accelerated through a potential of 100 volts is

a) 1.602×10^{-17} J b) 418.6 calories

c) 1.16×10^{4} K d) 6.626×10^{-34} W-sec

169. An electron of mass m when accelerated through a potential difference V has de-Broglie wavelength λ. The de-Broglie wavelength associated with a proton of mass M accelerated through the same potential difference will be

a) $\lambda\frac{m}{M}$ b) $\lambda\sqrt{\frac{m}{M}}$ c) $\lambda\frac{M}{m}$ d) $\lambda\sqrt{\frac{M}{m}}$

170. Which of the following statement is not correct?

a) Photographic plates are sensitive to infrared rays

b) Photographic plates are sensitive to ultraviolet rays

c) Infra-red rays are invisible but can cast shadows like visible light

d) Infrared photons have more energy than photons of visible light

171. Ultraviolet radiations of 6.2 eV falls on an aluminium surface (work function 4.2 eV). The kinetic energy in joules of the fastest electron emitted is approximately.

a) 3.2×10^{-21} b) 3.2×10^{-19} c) 3.2×10^{-17} d) 3.2×10^{-15}

172. The wavelength of X-rays is of the order of

a) Centimetre b) Micron (10^{-6} m) c) Angstrom (10^{-10} m) d) Metre

173. Which of the following is true?

a) Lyman series is a continuous spectrum

b) Paschen series is a line spectrum in the infrared

c) Balmer series is a line spectrum in the ultraviolet

d) The spectral series formula can be derived from the Rutherford model of the hydrogen atom

174. When p-n junction diode is forward biased, the width of depletion layer

a) Increases b) Decreases

c) Remains unchanged d) None

175. Serious drawback of the semiconductor device is

a) They cannot be used with high voltage b) They pollute the environment

c) They are costly d) They do not last for long time

176. A piece of copper and the other of germanium are cooled from the room temperature to 80 K, then which of the following would be a correct statement

a) Resistance of each increases

b) Resistance of each decreases

c) Resistance of copper increases while that of germanium decreases

d) Resistance of copper decreases while that of germanium increases

177. Which statement is correct?

a) N-type germanium is negatively charged and P-type germanium is positively charged

b) Both N-type and P-type germanium are neutral

c) N-type germanium is positively charged and P-type germanium is negatively charged

d) Both N-type and P-type germanium are negatively charged

178. Sun radiates continuously and maintains its brightness because

a) Helium is converted into iron in its core

b) Of fusion of hydrogen nuclei into helium

c) Fusion of helium in hydrogen

d) Burning of carbon, in its core

179. An extremely hot star would appear to be

a) Red b) Blue c) Yellow d) Orange

180. Which is the particle-anti particle pair?

a) Electron and proton b) Electron and positron

c) Proton and neutron d) Neutron and electron

181. Which number would replace the question mark in the following sequence?

446, 222, ?, 54, 26, 12, 5

a) 106 b) 108 c) 110 d) 112

182. Ram, Hari and Shyam go for swim after a gap of every 1 day, every 2 days and every 3 days respectively. How many times will all they meet on the same day within 180 days?

a) 30 b) 18 c) 15 d) 12

183. A man has Rs. 480 in the denominations of one-rupee notes, five-rupee notes and ten-rupee notes. The number of notes of each denomination is equal. What is the total number of notes that he has?

a) 45 b) 60 c) 75 d) 90

184. Which option matches with (10, 40, 160)?

a) 5, 20, 160 b) 5, 20, 80 c) 5, 20, 90 d) 5, 30, 80

185. If JANAKSIR is coded as 3-5 then what is the code of MATEXPERT?

a) 3-6 b) 2-5 c) 3-8 d) 2-6

186. What letter is missing in the place of (?)

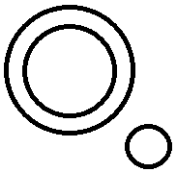
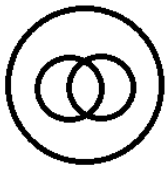
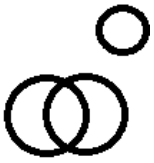
D, F, R, O, I, O, N, D,?

a) F b) H c) K d) O

187. Pointing to a lady, a man said "The son of her only brother is the brother of my wife." How is the lady related to the man?

a) Mother's sister b) Grandmother c) Mother-in-law d) Sister of father-in-law

188. Which diagram best represents animals, dogs and pet?

a)  b)  c)  d) 

189. Point A is 5 km towards the west of point B) Point C is 2 km towards the North of point B) Point Dis 2 km towards the east of point C) Point E is 2km towards the South of point D) Which of the following three points are in a straight line?

a) ABE b) ACE c) ADE d) ABD

190. Today is Varun's birthday. One year, from today he will be twice as old as he was 12 years ago. How old is Varun today?

a) 20 years b) 22 years c) 25 years d) 27 years

191. In a family, the ages of father, mother, son and grandson are A, B, C and D respectively. A – B = 3, B + C = 78, C + D = 33, the average age of the family is given as 34 years. What is the age of the father?

a) 48 years b) 53 years c) 55 years d) 51 years

192. Which one will replace the question mark?

2	4	0
1	2	4
3	1	3
36	?	91

a) 25 b) 59 c) 48 d) 73

193. Statements:

I. Many people in the area are reported to be suffering from Malaria)

II. Private Medical Practitioners in the area have decided to close their clinics for few days.

a) Statement I is the cause and statement II is its effect.

b) Statement II is the cause and statement I is its effect.

c) Both the statements I and II are effects of some common cause.

d) Both the statements I and II are effects of independent causes.

194. Arrange the following words in the best meaningful manner.

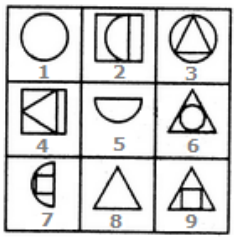
1. Grain 2. Plant 3. Sandwich 4. Bread 5. Dough

a) 1, 2, 5, 4, 3 b) 2, 1, 4, 5, 3 c) 2, 1, 5, 4, 3 d) 2, 1, 4, 5, 3

195. All animals have

a Eyes b) Four legs c) Horns d) Instincts

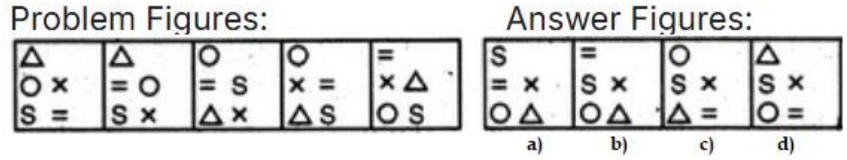
196. Group the given figures into three classes using each figure only once.



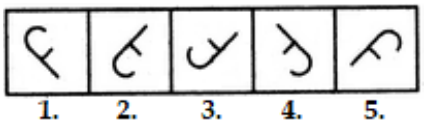
a) 1,5,6 ; 3,4,7 ; 2,6,8 b) 1,3,6 ; 4,5,9 ; 2,7,8

c) 1,3,6 ; 2,5,7 ; 4,8,9 d) 6,7,8 ; 1,3,7 ; 2,4,9

197. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figures.



198. Choose the figure which is different from the rest.

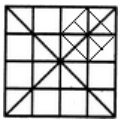


a) 1 b) 2 c) 3 d) 5

199. Select the alternative which represents three out of the five alternative figures which when fitted into each other would form a complete square.

a) 124 b) 345 c) 123 d) 135

200. Find the number of squares in the given figure.



a) 31 b) 34 c) 35 d) 36

Result will be published on Sunday
Log on to www.name.edu.np
or
www.facebook.com/nameinstitute

Best of Luck