

National Testing Agency

Question Paper Name: Biotechnology 904 28th May 2019 Shift 2 Set 1
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Biotechnology 904

Group Number : 1
Group Id : 128206113
Group Maximum Duration : 0
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Revisit allowed for view? : No
Revisit allowed for edit? : No
Break time: 0
Group Marks: 100

PART A

Section Id : 128206168
Section Number : 1
Section type : Online
Mandatory or Optional: Mandatory
Number of Questions: 50
Number of Questions to be attempted: 50
Section Marks: 100
Display Number Panel: Yes
Group All Questions: No

Sub-Section Number: 1
Sub-Section Id: 128206274
Question Shuffling Allowed : Yes

**Question Number : 1 Question Id : 1282066080 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical**

Correct Marks : 2 Wrong Marks : 0

Which among the following statements about living systems is NOT correct?

- (a) They can grow and divide
- (b) They can evolve
- (c) They constitute a thermodynamically closed system
- (d) They can convert one form of the energy into another

Options :

- 12820624059. A
- 12820624060. B
- 12820624061. C
- 12820624062. D

Question Number : 2 Question Id : 1282066081 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following is obtained for the reaction of 1 mole Calcium Phosphide with excess water?

- (a) one mole of phosphine
- (b) two moles of phosphoric acid
- (c) two moles of phosphine
- (d) one mole of phosphoric acid

Options :

- 12820624063. A
- 12820624064. B
- 12820624065. C
- 12820624066. D

Question Number : 3 Question Id : 1282066082 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Where cross-linking of cysteine residues in polypeptides mainly occurs?

- (a) inside the cell due to the reducing environment of the cytoplasm
- (b) outside of the cell due to the oxidizing environment of the extracellular medium
- (c) inside the cell due to the polar environment of the cytoplasm
- (d) outside of the cell due to the reducing environment of the extracellular medium

Options :

- 12820624067. A
- 12820624068. B
- 12820624069. C
- 12820624070. D

Question Number : 4 Question Id : 1282066083 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

If a male haemophiliac (XhY) is crossed with a female carrier of both color blindness and haemophilia ($XcXh$), what is the probability that a female child will be phenotypically normal?

- (a) 0%
- (b) 25%
- (c) 50%
- (d) 100%

Options :

- 12820624071. A
- 12820624072. B
- 12820624073. C
- 12820624074. D

Question Number : 5 Question Id : 1282066084 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Ten points are marked on a straight line and eleven points are marked on another straight line.
How many triangles can be constructed with vertices from the above points ?

- (a) 495
- (b) 550
- (c) 1045
- (d) 2475

Options :

- 12820624075. A
- 12820624076. B
- 12820624077. C
- 12820624078. D

Question Number : 6 Question Id : 1282066085 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Herceptin is

- (a) a monoclonal antibody
- (b) sugar binding protein produced naturally from activated T cells
- (c) a drug used for juvenile diabetes
- (d) DNA-protein complex

Options :

- 12820624079. A
- 12820624080. B
- 12820624081. C
- 12820624082. D

Question Number : 7 Question Id : 1282066086 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The pepscan technique is most useful for determining

- (a) antibody structure
- (b) discontinuous epitopes recognized by antibodies
- (c) epitopes recognized by T-cells
- (d) MHC haplotypes

Options :

- 12820624083. A
- 12820624084. B

12820624085. C

12820624086. D

**Question Number : 8 Question Id : 1282066087 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical**

Correct Marks : 2 Wrong Marks : 0

If you measure the ability of cytotoxic T cells from an HLA-B27 person to kill virus X-infected target cells, which one of the following statements is CORRECT?

- (a) any virus X-infected target cell will be killed
- (b) only virus X-infected cells of HLA-B27 type will be killed
- (c) any HLA-B27 cell will be killed
- (d) no HLA-B27 cell will be killed

Options :

12820624087. A

12820624088. B

12820624089. C

12820624090. D

**Question Number : 9 Question Id : 1282066088 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical**

Correct Marks : 2 Wrong Marks : 0

The paired t test is

- (a) impractical for large samples
- (b) useful for the analysis of qualitative data
- (c) useful for independent samples
- (d) based on the normal distribution

Options :

12820624091. A

12820624092. B

12820624093. C

12820624094. D

**Question Number : 10 Question Id : 1282066089 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical**

Correct Marks : 2 Wrong Marks : 0

Which of the following is a major enzyme that initiates the last step of complement process?

- (a) C5-convertase
- (b) C3-convertase
- (c) C5b
- (d) C5a

Options :

12820624095. A

12820624096. B

12820624097. C

12820624098. D

Question Number : 11 Question Id : 1282066090 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

What event of DNA virus life cycle distinguishes 'early' from 'late' viral gene expression?

- (a) expression of non-structural proteins
- (b) expression of capsid proteins
- (c) replication of viral genome
- (d) cleavage of viral genome

Options :

12820624099. A

12820624100. B

12820624101. C

12820624102. D

Question Number : 12 Question Id : 1282066091 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

What is the striking feature of transducing retroviruses ?

- (a) insertional activation of proto-oncogene by provirus
- (b) viral genome carries cell derived oncogene
- (c) infecting viral genome is intact and replication competent
- (d) tumor formation efficiency is low

Options :

12820624103. A

12820624104. B

12820624105. C

12820624106. D

Question Number : 13 Question Id : 1282066092 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

At 12 hours of post seeding suspension cell culture, the cell density was determined to be 3.6×10^8 cells/ml. For viral infections, an aliquot of 4ml culture was withdrawn at that time and centrifuged to pellet down. If the pellet is re-suspended in 9ml medium, what is the new concentration?

- (a) 16×10^8 cells/ml
- (b) 2×10^8 cells/ml
- (c) 1.6×10^8 cell/ml
- (d) 4×10^8 cell/ml

Options :

12820624107. A

12820624108. B

12820624109. C

12820624110. D

Question Number : 14 Question Id : 1282066093 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following nucleic acid types are not found in viruses ?

- (a) linear double stranded DNA
- (b) circular double stranded DNA
- (c) linear single stranded RNA
- (d) circular single stranded RNA

Options :

12820624111. A

12820624112. B

12820624113. C

12820624114. D

Question Number : 15 Question Id : 1282066094 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

A-form of DNA is one of the three major structural confirmations that DNA can adopt generally under

- (a) dehydrating conditions
- (b) high pH conditions
- (c) high salt concentrations
- (d) high potassium concentrations

Options :

12820624115. A

12820624116. B

12820624117. C

12820624118. D

Question Number : 16 Question Id : 1282066095 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Biochemical reaction which is not catalyzed by enzyme reverse transcriptase of retrovirus is

- (a) copying of DNA from viral DNA
- (b) integration of viral genome into host genome
- (c) synthesis of complementary DNA from viral RNA
- (d) digestion of viral RNA in the intermediate RNA/DNA hybrid

Options :

12820624119. A

12820624120. B

12820624121. C

12820624122. D

Question Number : 17 Question Id : 1282066096 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The feature that is not seen with prokaryotes in the manner in which mRNAs are produced and utilized to program translation when compared to eukaryotes

- (a) the small ribosomal subunits is correctly oriented to begin translation by association with the Shine-Dalgarno sequence
- (b) the 5' end of the mRNA has a methylated cap structure covalently attached after transcription
- (c) during protein synthesis an ORF can be translated by more than one ribosome forming polyribosome
- (d) termination of transcription may occur at a site characterized by the formation of a GC-rich stem loop structure just upstream from a U-rich sequence

Options :

12820624123. A

12820624124. B

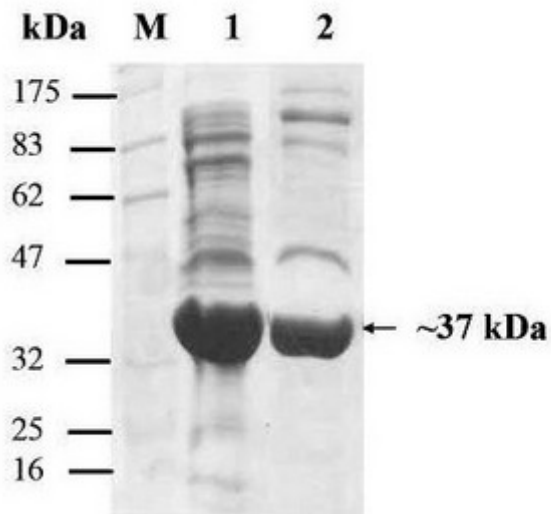
12820624125. C

12820624126. D

Question Number : 18 Question Id : 1282066097 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

While a student was performing gel filtration chromatography to purify an approximately 37 kDa protein using S-100, despite repeated efforts s/he was unable to remove the proteins of higher molecular weight as shown in the following figure of the SDS-PAGE gel.



M: Protein molecular weight markers
Lane 1: Pre-gel filtration fraction
Lane 2: Post-gel filtration fraction

The most likely reason for this could be:

- (a) the column was not packed properly
- (b) the high molecular weight proteins are possibly interacting with the ~37 kDa protein and therefore could not be separated, but resolved on denaturing SDS-PAGE
- (c) the resin used is not able to give good resolution and therefore the proteins are not separated and coming together
- (d) not enough information to answer the question

Options :

- 12820624127. A
- 12820624128. B
- 12820624129. C
- 12820624130. D

Question Number : 19 Question Id : 1282066098 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

To obtain a non-specific transcription from both the strands of a DNA molecule, the most efficient and effective way is to

- (a) enrich the extract with Sigma factor
- (b) include the RNA holoenzyme in the reaction
- (c) use the core enzyme of RNA polymerase
- (d) include both the RNA holoenzyme and the core enzyme of RNA polymerase in the reaction

Options :

- 12820624131. A

- 12820624132. B
- 12820624133. C
- 12820624134. D

Question Number : 20 Question Id : 1282066099 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following will most likely occur in a bacterial cell if the glucose level falls down ?

- (a) lowering of cAMP levels
- (b) CAP will assist in upregulating the transcription from lac operon if lactose is added
- (c) inhibition of CRP level
- (d) double strand DNA breaks

Options :

- 12820624135. A
- 12820624136. B
- 12820624137. C
- 12820624138. D

Question Number : 21 Question Id : 1282066100 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following is incorrect in relation to the Lac repressor involved in regulation of lac operon of E. coli.?

- (a) in the absence of inducer, the repressor binds more tightly to operator DNA than to nonspecific DNA
- (b) in the presence of inducer, the repressor binds more tightly to operator DNA than to nonspecific DNA
- (c) mutations in the Operator sequences are recessive
- (d) mutations in the tetramerization domain are recessive

Options :

- 12820624139. A
- 12820624140. B
- 12820624141. C
- 12820624142. D

Question Number : 22 Question Id : 1282066101 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Upon analysis of replication of an organism with mutant DNA ligase at different time points after initiation of DNA replication, one would see that

- (a) the length of the DNA gradually increases in a time dependent manner till it is fully replicated
- (b) there is an increase in number of small fragments with time
- (c) concentration of both the small and long fragments of definite length increases with time
- (d) only small fragment at first, then two separate bands showing long fragment with increasing length and short fragments of definite length

Options :

- 12820624143. A
- 12820624144. B
- 12820624145. C
- 12820624146. D

Question Number : 23 Question Id : 1282066102 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The 'elongation' stage of translation, after the arrival of each new tRNA, involves:

- (a) passing of the amino acid from the tRNA in the A-site to the tRNA in the P site
- (b) binding of the newly arriving tRNA to the E site
- (c) passing of the peptide from the tRNA in the P site to the tRNA in the A site
- (d) binding of the new tRNA to the P site of the ribosome

Options :

- 12820624147. A
- 12820624148. B
- 12820624149. C
- 12820624150. D

Question Number : 24 Question Id : 1282066103 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following is incorrect about beta-barrel found in proteins:

- (a) it is a type of beta sheet which twists and coils to form a closed structure in which the first strand is bonded to the last strand
- (b) the strands contain alternating polar and non-polar (hydrophilic and hydrophobic) amino acids
- (c) porins, preprotein translocases, lipocalins are types of beta barrels
- (d) they are found only in prokaryotes cells

Options :

- 12820624151. A
- 12820624152. B
- 12820624153. C
- 12820624154. D

Question Number : 25 Question Id : 1282066104 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Application of BLAST includes following except :

- (a) establishing phylogeny
- (b) locating domain
- (c) DNA mapping and comparison
- (d) rate of speciation

Options :

12820624155. A

12820624156. B

12820624157. C

12820624158. D

Question Number : 26 Question Id : 1282066105 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The learning curve is

- (a) a method to estimate adaptation to climate by microorganisms
- (b) a plot of the evolution of the two error scores as training sets changes in machine learning
- (c) an autocorrelation plot in cell signaling process
- (d) S-shaped curve with the long lag phase in a growth curve

Options :

12820624159. A

12820624160. B

12820624161. C

12820624162. D

Question Number : 27 Question Id : 1282066106 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Support vector machine is a

- (a) data mining classification algorithm in supervised machine learning model
- (b) the tool to estimate the disease vector population in the outbreak area
- (c) finite machine state
- (d) tool to use genetic variation

Options :

12820624163. A

12820624164. B

12820624165. C

12820624166. D

Question Number : 28 Question Id : 1282066107 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following is not true about Fourier transformation

- (a) it relates to the extraction of patterns from nature
- (b) fourier transformation, by converting data variation over time into patterns of repetition (frequency) finds hidden features
- (c) can be used as tool to understand biological phenomena
- (d) can be used in time dependent events only

Options :

12820624167. A

12820624168. B

12820624169. C

12820624170. D

Question Number : 29 Question Id : 1282066108 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

What will be the most likely effect of a single amino acid substitution from Leucine to Arginine in the hydrophobic core of a globular protein?

- (a) T_m will increase
- (b) T_m will decrease
- (c) T_m will be unaffected
- (d) protein will precipitate

Options :

12820624171. A

12820624172. B

12820624173. C

12820624174. D

Question Number : 30 Question Id : 1282066109 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following is a not a typical characteristic of a molten globule state?

- (a) they have a significant secondary structure
- (b) they have no tertiary structure
- (c) they have tight packing
- (d) they bind with fluorescent dye ANS

Options :

12820624175. A

12820624176. B

12820624177. C

12820624178. D

Question Number : 31 Question Id : 1282066110 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Amyloid fibrils observed in several diseases are rich in

- (a) alpha helix
- (b) beta sheet
- (c) random coil
- (d) turns

Options :

- 12820624179. A
- 12820624180. B
- 12820624181. C
- 12820624182. D

Question Number : 32 Question Id : 1282066111 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which one of the following techniques is not based on hydrodynamic property of the biomolecule?

- (a) electrophoresis
- (b) light scattering
- (c) size exclusion chromatography
- (d) sedimentation

Options :

- 12820624183. A
- 12820624184. B
- 12820624185. C
- 12820624186. D

Question Number : 33 Question Id : 1282066112 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following peptide bond will exhibit both cis and trans conformation ?

- (a) Ala-Pro
- (b) Pro-Ala
- (c) Ala-Ala
- (d) Gly-Gly

Options :

- 12820624187. A
- 12820624188. B
- 12820624189. C
- 12820624190. D

Question Number : 34 Question Id : 1282066113 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The connectivity between two amino acid residues of a protein in space can be measured by the following NMR method

- (a) COSY
- (b) TOCSY
- (c) NOESY
- (d) HSQC

Options :

- 12820624191. A
- 12820624192. B
- 12820624193. C
- 12820624194. D

Question Number : 35 Question Id : 1282066114 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

A 50 mg/ml solution of a protein was diluted 10 fold and its concentration was determined using a UV spectrometer and knowledge of its extinction coefficient. Given that molecular weight of the protein is 50 kDa, its concentration in mM units after dilution would be

- (a) 0.1 mM
- (b) 1 mM
- (c) 5 mM
- (d) 10 mM

Options :

- 12820624195. A
- 12820624196. B
- 12820624197. C
- 12820624198. D

Question Number : 36 Question Id : 1282066115 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Water has a high dielectric constant of 80 in comparison with many nonpolar solvents having a very low dielectric constant. Due to this property, the electrostatic interactions between various charged side chains of amino acids in proteins after their transfer from a nonpolar solvent to water would

- (a) decrease
- (b) increase
- (c) remain unaffected
- (d) attain a value of zero

Options :

- 12820624199. A
- 12820624200. B
- 12820624201. C

12820624202. D

Question Number : 37 Question Id : 1282066116 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The enzyme lysozyme containing 4 disulphide bonds is reduced to open up the structure after breaking the disulphide bonds. This structure could be folded back effectively to the native functional state by using

- (a) a mixture of oxidized and reduced glutathiones
- (b) dithiothreitol
- (c) beta-mercaptoethanol
- (d) a mixture of dithiothreitol and beta-mercaptoethanol

Options :

12820624203. A

12820624204. B

12820624205. C

12820624206. D

Question Number : 38 Question Id : 1282066117 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The value of the dihedral angle ϕ in a peptide is based on the rotation around

- (a) N-C α bond
- (b) C α -C' bond
- (c) C'-N bond
- (d) C=O bond

Options :

12820624207. A

12820624208. B

12820624209. C

12820624210. D

Question Number : 39 Question Id : 1282066118 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Silk Fibroin, a prominent protein in the silk fibre is made up of one of the following secondary structural elements

- (a) 3_{10} -helix
- (b) beta-sheet
- (c) coiled coils
- (d) π -helix

Options :

12820624211. A

12820624212. B

12820624213. C

12820624214. D

Question Number : 40 Question Id : 1282066119 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Sets of genes related by duplication within a genome are known as

- (a) orthologs
- (b) interologs
- (c) paralogs
- (d) equilog

Options :

12820624215. A

12820624216. B

12820624217. C

12820624218. D

Question Number : 41 Question Id : 1282066120 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

If the monoploid number of chromosomes in a hexaploid plant is 9, what would be the haploid number of chromosomes?

- (a) 27
- (b) 18
- (c) 36
- (d) 45

Options :

12820624219. A

12820624220. B

12820624221. C

12820624222. D

Question Number : 42 Question Id : 1282066121 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

T-DNA transfer in *Agrobacterium* occur through

- (a) Type I Secretory System
- (b) Type II Secretory System
- (c) Type III Secretory System
- (d) Type IV Secretory System

Options :

12820624223. A

12820624224. B

12820624225. C

12820624226. D

Question Number : 43 Question Id : 1282066122 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The surface properties of the nanomaterial can be monitored using

- (a) brightfield optical microscope
- (b) confocal fluorescence microscope
- (c) atomic force microscope
- (d) inverted microscope

Options :

- 12820624227. A
- 12820624228. B
- 12820624229. C
- 12820624230. D

Question Number : 44 Question Id : 1282066123 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The noble metallic nanomaterial shows an absorbance in the visible region. This property is known as

- (a) hyperthermia
- (b) tunnelling effect
- (c) fluorescence property
- (d) surface plasmon resonance

Options :

- 12820624231. A
- 12820624232. B
- 12820624233. C
- 12820624234. D

Question Number : 45 Question Id : 1282066124 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Optical density of a protein solution is 0.28. The molar extinction coefficient is given by $68000 \text{ M}^{-1}\text{cm}^{-1}$. What is the concentration of the protein?

- (a) $41.1 \times 10^{-7} \text{ M}$
- (b) $0.411 \times 10^{-6} \text{ M}$
- (c) $4.11 \times 10^{-5} \text{ M}$
- (d) $41.1 \times 10^{-6} \text{ M}$

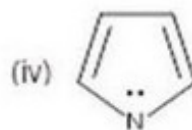
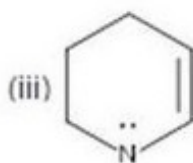
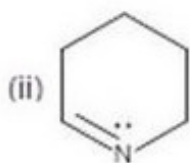
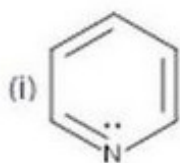
Options :

- 12820624235. A
- 12820624236. B
- 12820624237. C
- 12820624238. D

Question Number : 46 Question Id : 1282066125 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following indicated lone pairs are not involved in resonance ?



- (a) (i), (iii) and (iv)
(b) (ii) and (iv)
(c) (i) and (ii)
(d) (ii) and (iii)

Options :

12820624239. A

12820624240. B

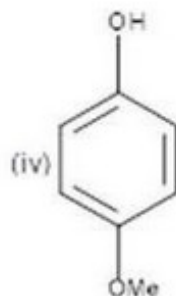
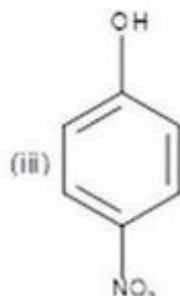
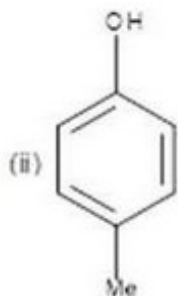
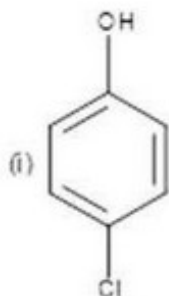
12820624241. C

12820624242. D

Question Number : 47 Question Id : 1282066126 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Arrange the compounds in the order of decreasing acidity



- (a) (i) > (iii) > (ii) > (iv)
(b) (ii) > (iv) > (i) > (iii)
(c) (iv) > (ii) > (i) > (iii)
(d) (iv) > (iii) > (ii) > (i)

Options :

12820624243. A

12820624244. B

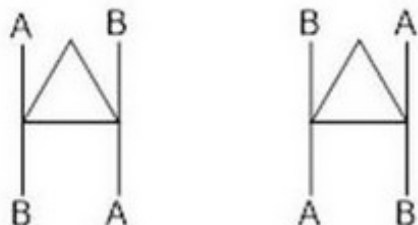
12820624245. C

12820624246. D

Question Number : 48 Question Id : 1282066127 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The relationship between the following compounds is



- (a) anomers
- (b) same compound
- (c) diastereomers
- (d) enantiomer

Options :

- 12820624247. A
- 12820624248. B
- 12820624249. C
- 12820624250. D

Question Number : 49 Question Id : 1282066128 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

In the Sanger sequencing it was observed that peaks corresponding to cytosine were missing in a GC rich DNA sequence. What could be a possible reason?

- (a) fluorescent labelling was done at room temperature
- (b) primer and template pH are either neutral or basic
- (c) sequencing reactions were exposed to light, heat, acidic conditions
- (d) samples were analyzed immediately after preparation

Options :

- 12820624251. A
- 12820624252. B
- 12820624253. C
- 12820624254. D

Question Number : 50 Question Id : 1282066129 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

For the following highly selective reduction, which reagent is the best one to use?



- (a) L-Selectride
- (b) Na/NH₃
- (c) SmI₂
- (d) Na-EtOH

Options :

12820624255. A

12820624256. B

12820624257. C

12820624258. D