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# National Testing Agency

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## Molecular Biology

<b>Group Number :</b>	1
<b>Group Id :</b>	512452226
<b>Group Maximum Duration :</b>	0
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<b>Show Attended Group? :</b>	No
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<b>Group Marks :</b>	100
<b>Is this Group for Examiner? :</b>	No

## Molecular Biology-1

<b>Section Id :</b>	512452910
<b>Section Number :</b>	1
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	100

**Number of Questions to be attempted :** 100  
**Section Marks :** 100  
**Mark As Answered Required? :** Yes  
**Sub-Section Number :** 1  
**Sub-Section Id :** 5124521072  
**Question Shuffling Allowed :** Yes

**Question Number : 1 Question Id : 51245219159 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Three-dimensional structure of DNA double helix was proposed by James D. Watson and Francis H. C. Crick in the year \_\_\_\_\_.

1. 1951
2. 1953
3. 1954
4. 1963

**Options :**

51245263087. 1  
51245263088. 2  
51245263089. 3  
51245263090. 4

**Question Number : 2 Question Id : 51245219160 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

In bacteria, ribosomal subunits consist of \_\_\_\_\_ rRNA components.

1. 4S, 15S and 21S
2. 5S, 16S and 23S
3. 15S, 26S and 53S
4. 51S, 26S and 43S

**Options :**

- 51245263091. 1
- 51245263092. 2
- 51245263093. 3
- 51245263094. 4

**Question Number : 3 Question Id : 51245219161 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

DNA is found as the genetic material in \_\_\_\_\_.

- 1. Only Prokaryotes
- 2. Only Eukaryotes
- 3. Some Viruses, Prokaryotes and Eukaryotes
- 4. All Viruses, Prokaryotes and Eukaryotes

**Options :**

- 51245263095. 1
- 51245263096. 2
- 51245263097. 3
- 51245263098. 4

**Question Number : 4 Question Id : 51245219162 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Quantitative estimation of DNA can be carried out by \_\_\_\_\_ test.

- 1. Folin Phenol
- 2. Orcinol
- 3. Diphenylamine
- 4. Trypan Blue

**Options :**

- 51245263099. 1
- 51245263100. 2
- 51245263101. 3

51245263102. 4

**Question Number : 5 Question Id : 51245219163 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

DNA is considered as "Molecule of Life" because \_\_\_\_\_.

1. It replicates itself
2. It carries genetic information for cell functions
3. It is passed on from parents to offspring's
4. All of the above

**Options :**

- 51245263103. 1
- 51245263104. 2
- 51245263105. 3
- 51245263106. 4

**Question Number : 6 Question Id : 51245219164 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Who discovered Transposable Elements (TEs) first?

1. Barbara McClintock
2. Werner Arber
3. David Baltimore
4. Martha Chase

**Options :**

- 51245263107. 1
- 51245263108. 2
- 51245263109. 3
- 51245263110. 4

**Question Number : 7 Question Id : 51245219165 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 1 Wrong Marks : 0**

“One gene - one enzyme” hypothesis emphasizes that each inherited gene mutation may correspond to formation of defective enzyme. This hypothesis was proposed by \_\_\_\_\_.

1. Beadle and Tatum
2. Morgan and Sturtevant
3. Morgan and Bridges
4. Bateson and Punnett

**Options :**

- 51245263111. 1
- 51245263112. 2
- 51245263113. 3
- 51245263114. 4

**Question Number : 8 Question Id : 51245219166 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following enzyme concurrently initiates negative supercoils during DNA replication?

1. DNA Polymerase
2. RNA Polymerase
3. DNA Ligase
4. DNA Gyrase

**Options :**

- 51245263115. 1
- 51245263116. 2
- 51245263117. 3
- 51245263118. 4

**Question Number : 9 Question Id : 51245219167 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 1 Wrong Marks : 0**

All of the following statements characterize DNA replication EXCEPT:

1. Growth of the new DNA chain occurs in the 5' to 3' direction
2. Growth of the DNA chain is discontinuous on lagging strand
3. RNA and DNA chains are linked covalently
4. DNA is synthesized in 3' to 5' direction on one parental strand and 5' to 3' direction on the other strand

**Options :**

- 51245263119. 1
- 51245263120. 2
- 51245263121. 3
- 51245263122. 4

**Question Number : 10 Question Id : 51245219168 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

In eukaryotes, DNA synthesis occurs during \_\_\_\_\_ of the cell cycle.

1. G1 Phase
2. S Phase
3. G2 Phase
4. M Phase

**Options :**

- 51245263123. 1
- 51245263124. 2
- 51245263125. 3
- 51245263126. 4

**Question Number : 11 Question Id : 51245219169 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following is known as transcribing enzyme?

1. Amino-acyl Transferase
2. DNA Polymerase
3. RNA Polymerase
4. DNA Helicase

**Options :**

- 51245263127. 1
- 51245263128. 2
- 51245263129. 3
- 51245263130. 4

**Question Number : 12 Question Id : 51245219170 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

GINO represents 'go, ichi, ni, san' which means \_\_\_\_\_ respectively in Japanese.

1. 1, 2, 3, 4
2. 2, 5, 3, 4
3. 4, 5, 1, 2
4. 5, 1, 2, 3

**Options :**

- 51245263131. 1
- 51245263132. 2
- 51245263133. 3
- 51245263134. 4

**Question Number : 13 Question Id : 51245219171 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Regarding *E. coli* RNA polymerase, which of the following sentences correctly describes the difference between the holoenzyme and the core enzyme?

1. "The holoenzyme is used to synthesize mRNA, while the core enzyme synthesizes non-coding RNAs."
2. "The holoenzyme consists of five subunits including  $\sigma$ , while the core enzyme lacks  $\sigma$ ."
3. "The core enzyme, and not the holoenzyme, is required for the initiation of RNA synthesis."
4. "The holoenzyme binds to DNA upstream of the promoter, while the core enzyme binds downstream of the promoter."

**Options :**

- 51245263135. 1
- 51245263136. 2
- 51245263137. 3
- 51245263138. 4

**Question Number : 14 Question Id : 51245219172 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following statements about DNA Polymerase I is correct?

1. It joins together Okazaki fragments to complete the lagging strand during DNA replication
2. It requires a template and primer to polymerize deoxyribonucleoside triphosphates
3. It functions as a DNA repair enzyme but is not involved in the DNA replication process
4. It produces Okazaki fragments linked to RNA primer chains

**Options :**

- 51245263139. 1
- 51245263140. 2
- 51245263141. 3
- 51245263142. 4

**Question Number : 15 Question Id : 51245219173 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**



Single strand of mRNA leaves the nucleus through \_\_\_\_\_ to migrate into the cytoplasm.

1. Nuclear Pore
2. Endoplasmic Reticulum
3. Nucleolus
4. Ribosomes

**Options :**

- 51245263143. 1
- 51245263144. 2
- 51245263145. 3
- 51245263146. 4

**Question Number : 16 Question Id : 51245219174 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which one of the followings is a characteristic of Genetic Code?

1. It is degenerate where many triplets code for more than one amino acid
2. It is read in the direction of 3' to 5'
3. It is generally referred to as universal as it is nearly the same in all organisms
4. It is degenerate for all amino acids

**Options :**

- 51245263147. 1
- 51245263148. 2
- 51245263149. 3
- 51245263150. 4

**Question Number : 17 Question Id : 51245219175 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

The number of aminoacyl-tRNA synthetases involved in translation can be determined by \_\_\_\_\_.

1. Number of existing tRNAs
2. Number of translatable mRNA codons
3. Number of utilized amino acids
4. Number of nucleotides in mRNA transcript

**Options :**

- 51245263151. 1
- 51245263152. 2
- 51245263153. 3
- 51245263154. 4

**Question Number : 18 Question Id : 51245219176 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

In translation process, synthesis of peptide bond is catalyzed by \_\_\_\_\_.

1. A site of ribosome
2. P site of ribosome
3. Peptidyl transferase
4. 23S rRNA

**Options :**

- 51245263155. 1
- 51245263156. 2
- 51245263157. 3
- 51245263158. 4

**Question Number : 19 Question Id : 51245219177 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

In protein synthesis, which out of the following is NOT a termination codon?

1. UUU
2. UAA
3. UAG
4. UGA

**Options :**

- 51245263159. 1
- 51245263160. 2
- 51245263161. 3
- 51245263162. 4

**Question Number : 20 Question Id : 51245219178 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following sentences is NOT true for RNA processing?

1. Exons are excised and hydrolyzed before mRNA moves out of the nucleus
2. Presence of introns may facilitate crossing over between regions of a gene that code for polypeptide domains
3. RNA splicing may be catalyzed by spliceosomes
4. A primary transcript is often much longer than the final RNA molecule that leaves the nucleus

**Options :**

- 51245263163. 1
- 51245263164. 2
- 51245263165. 3
- 51245263166. 4

**Question Number : 21 Question Id : 51245219179 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following is NOT an outcome of post-translation modifications of a protein?

1. Removal of introns
2. Removal of N-terminus amino acid
3. Addition of phosphate groups
4. Addition of metals to create tertiary or quaternary structure

**Options :**

- 51245263167. 1
- 51245263168. 2
- 51245263169. 3
- 51245263170. 4

**Question Number : 22 Question Id : 51245219180 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

5' cap of mature eukaryotic mRNA comprises of \_\_\_\_\_ residue.

1. 3-Methylguanosine
2. 5-Methylguanosine
3. 7-Methylguanosine
4. 9-Methylguanosine

**Options :**

- 51245263171. 1
- 51245263172. 2
- 51245263173. 3
- 51245263174. 4

**Question Number : 23 Question Id : 51245219181 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

The protein/s involved in Mismatch Repair is/are:

1. Mut S
2. Mut H
3. Mut L
4. All of the Above Proteins

**Options :**

- 51245263175. 1
- 51245263176. 2
- 51245263177. 3
- 51245263178. 4

**Question Number : 24 Question Id : 51245219182 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

'RNAi' stands for \_\_\_\_\_.

1. RNA Inducer
2. RNA Interference
3. RNA Intron
4. RNA Insertion

**Options :**

- 51245263179. 1
- 51245263180. 2
- 51245263181. 3
- 51245263182. 4

**Question Number : 25 Question Id : 51245219183 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following is/are referred to as Dark Repair?

1. Nucleotide Excision Repair (NER)
2. Base Excision Repair (BER)
3. Both 1 and 2
4. None of the Above

**Options :**

- 51245263183. 1
- 51245263184. 2
- 51245263185. 3
- 51245263186. 4

**Question Number : 26 Question Id : 51245219184 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

RNA interference is also termed as \_\_\_\_\_in fungi.

1. Post Transcriptional Gene Silencing (PTGS)
2. Small Temporal RNA
3. Small Nucleolar RNA
4. Quelling

**Options :**

- 51245263187. 1
- 51245263188. 2
- 51245263189. 3
- 51245263190. 4

**Question Number : 27 Question Id : 51245219185 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

In case of genetic disease *Xeroderma pigmentosum*, cells fail to repair the damaged DNA, due to defect in:

1. Direct Repair
2. Base Excision Repair
3. Mismatch Repair
4. Double Strand Break Repair

**Options :**

- 51245263191. 1
- 51245263192. 2
- 51245263193. 3
- 51245263194. 4

**Question Number : 28 Question Id : 51245219186 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following is involved in rRNA base modification, such as methylation in the nucleolus of eukaryotic cells?

1. Small cytoplasmic RNA (scRNA)
2. Trans-acting siRNA
3. Small nucleolar RNA (snoRNA)
4. Piwi-interacting RNA

**Options :**

- 51245263195. 1
- 51245263196. 2
- 51245263197. 3
- 51245263198. 4

**Question Number : 29 Question Id : 51245219187 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

The mutational event in which adenine is replaced by guanine is termed as \_\_\_\_\_.

1. Frame Shift Mutation
2. Transcription
3. Transition
4. Transversion

**Options :**

- 51245263199. 1
- 51245263200. 2
- 51245263201. 3
- 51245263202. 4

**Question Number : 30 Question Id : 51245219188 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which one of the following chemicals is used to precipitate isolated DNA?

1. Phenol
2. Chloroform
3. NaOH
4. Absolute Ethanol

**Options :**

- 51245263203. 1
- 51245263204. 2
- 51245263205. 3
- 51245263206. 4

**Question Number : 31 Question Id : 51245219189 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**



The right handed form of the double helical structure of normal DNA is termed as \_\_\_\_\_.

1. A-DNA
2. B-DNA
3. D-DNA
4. Z-DNA

**Options :**

51245263207. 1  
51245263208. 2  
51245263209. 3  
51245263210. 4

**Question Number : 32 Question Id : 51245219190 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

The diameter of Watson and Crick DNA double helix is \_\_\_\_\_.

1. 3.4 A°
2. 20 A°
3. 34 A°
4. 51 A°

**Options :**

51245263211. 1  
51245263212. 2  
51245263213. 3  
51245263214. 4

**Question Number : 33 Question Id : 51245219191 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

DNA concentration and its purity can be determined at wavelength of \_\_\_\_\_.

1. 540 nm
2. 420 nm
3. 320 nm
4. 260 nm

**Options :**

- 51245263215. 1
- 51245263216. 2
- 51245263217. 3
- 51245263218. 4

**Question Number : 34 Question Id : 51245219192 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Split genes are also known as \_\_\_\_\_.

1. Jumping Genes
2. Trans Genes
3. Interrupted Genes
4. Divided Genes

**Options :**

- 51245263219. 1
- 51245263220. 2
- 51245263221. 3
- 51245263222. 4

**Question Number : 35 Question Id : 51245219193 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

First RNA molecule synthesized by copying all the information from eukaryotic DNA strand is termed as \_\_\_\_\_.

1. Messenger RNA (mRNA)
2. Transfer RNA (tRNA)
3. Small Nucleolar RNA (SnoRNA)
4. Heterogeneous Nuclear RNA (hnRNA)

**Options :**

- 51245263223. 1
- 51245263224. 2
- 51245263225. 3
- 51245263226. 4

**Question Number : 36 Question Id : 51245219194 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Short chains of nucleic acid can be isolated from cells in which DNA is undergoing replication. These segments, known as Okazaki fragments, have which of the following properties?

1. They are double-stranded RNA
2. They are RNA-Protein hybrids
3. They contain covalently linked RNA and DNA
4. They arise from nicking of sugar-phosphate backbone of parental DNA chain

**Options :**

- 51245263227. 1
- 51245263228. 2
- 51245263229. 3
- 51245263230. 4

**Question Number : 37 Question Id : 51245219195 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Eukaryotic DNA replication is initiated at specific sequences in a genome called \_\_\_\_\_.

1. oriS
2. oriQ
3. oriR
4. oriC

**Options :**

- 51245263231. 1
- 51245263232. 2
- 51245263233. 3
- 51245263234. 4

**Question Number : 38 Question Id : 51245219196 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Decatenation of two linked DNA molecules observed during eukaryotic DNA replication is carried out by \_\_\_\_\_.

1. FEN1
2. RNase H1
3. Type II Topoisomerase
4. Type IV Topoisomerase

**Options :**

- 51245263235. 1
- 51245263236. 2
- 51245263237. 3
- 51245263238. 4

**Question Number : 39 Question Id : 51245219197 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

The entire set of genes in an organism is referred to as \_\_\_\_\_.

1. Genetic Codon
2. Genome
3. Gene Bank
4. Gene Library

**Options :**

- 51245263239. 1
- 51245263240. 2
- 51245263241. 3
- 51245263242. 4

**Question Number : 40 Question Id : 51245219198 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Antibiotics such as streptomycin exhibit the capacity of inhibiting \_\_\_\_\_ in bacteria.

1. Photorespiration
2. Transcription
3. Translation
4. Reverse Transcription

**Options :**

- 51245263243. 1
- 51245263244. 2
- 51245263245. 3
- 51245263246. 4

**Question Number : 41 Question Id : 51245219199 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Wobble hypothesis refers to the less stringent base pairing specificity of \_\_\_\_\_.

1. 5' end Base of Anticodon
2. 3' end Base of Codon
3. Middle Base of Codon
4. 5' end Base of Codon

**Options :**

- 51245263247. 1
- 51245263248. 2
- 51245263249. 3
- 51245263250. 4

**Question Number : 42 Question Id : 51245219200 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Eukaryotic translation exhibits all the following characteristics 'EXCEPT':

1. N- formyl methionine initiates all nascent polypeptide chains
2. Ribosomes are larger than those of prokaryotes
3. No specific ribosome binding sites exist in mRNA comparable to those of Shine-Dalgarno sequence found in prokaryotes
4. All mRNA specify a single protein or polyprotein

**Options :**

- 51245263251. 1
- 51245263252. 2
- 51245263253. 3
- 51245263254. 4

**Question Number : 43 Question Id : 51245219201 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following molecules is NOT a component of 30S initiation complex?

1. GTP
2. mRNA
3. Initiation Factor 2
4. ATP

**Options :**

- 51245263255. 1
- 51245263256. 2
- 51245263257. 3
- 51245263258. 4

**Question Number : 44 Question Id : 51245219202 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Polyribosomes consist of \_\_\_\_\_.

1. Several ribosomes only
2. One mRNA only
3. One mRNA and several ribosomes
4. One mRNA, several tRNAs and several ribosomes

**Options :**

- 51245263259. 1
- 51245263260. 2
- 51245263261. 3
- 51245263262. 4

**Question Number : 45 Question Id : 51245219203 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Select appropriate alternative that represents characteristics of splicing of pre-mRNA:

P. It occurs within the nucleus

Q. It is self-catalyzed process

R. It involves snRNP

S. It is similar to pre-tRNA intron splicing

1. P and Q
2. P and R
3. R and S
4. P and S

**Options :**

- 51245263263. 1
- 51245263264. 2
- 51245263265. 3
- 51245263266. 4

**Question Number : 46 Question Id : 51245219204 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

The effectors of gene silencing produced by action of enzyme 'Dicer' are short double-stranded RNA molecules having an approximate size of \_\_\_\_\_.

1. 11 bp
2. 22 bp
3. 75 bp
4. 100 bp

**Options :**

- 51245263267. 1



51245263268. 2

51245263269. 3

51245263270. 4

**Question Number : 47 Question Id : 51245219205 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following is considered as a Bypass Repair System?

1. BER
2. NER
3. Recombinational Repair
4. SOS Repair

**Options :**

51245263271. 1

51245263272. 2

51245263273. 3

51245263274. 4

**Question Number : 48 Question Id : 51245219206 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following riboswitch is involved in nitrogen metabolism?

1. Glutamine Riboswitch
2. Cobalamin Riboswitch
3. Fluoride Riboswitch
4. Lysine Riboswitch

**Options :**

51245263275. 1

51245263276. 2

51245263277. 3

51245263278. 4

**Question Number : 49 Question Id : 51245219207 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

microRNA molecules regulate gene expression by \_\_\_\_\_ translation of mRNA and not by promoting \_\_\_\_\_ of the mRNA.

1. Enhancing and Repression
2. Blocking and Degradation
3. Degrading and Blockage
4. Increasing and Decreasing

**Options :**

- 51245263279. 1
- 51245263280. 2
- 51245263281. 3
- 51245263282. 4

**Question Number : 50 Question Id : 51245219208 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Negatively charged DNA migrates towards \_\_\_\_\_ in electrophoresis.

1. Cathode
2. Anode
3. Both (1) and (2)
4. None of the above

**Options :**

- 51245263283. 1
- 51245263284. 2
- 51245263285. 3
- 51245263286. 4

**Question Number : 51 Question Id : 51245219209 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 1 Wrong Marks : 0**

Nitrogen bases Cytosine, Thymine and Uracil are termed as \_\_\_\_\_.

1. Pyrimidines
2. Purines
3. Pyrimidines
4. Purimidines

**Options :**

51245263287. 1  
51245263288. 2  
51245263289. 3  
51245263290. 4

**Question Number : 52 Question Id : 51245219210 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No  
Correct Marks : 1 Wrong Marks : 0**

According to Chargaff's rule of equivalence, which of the following proportion exists in DNA?

1. A=T
2. A=G
3. C=T
4. G=T

**Options :**

51245263291. 1  
51245263292. 2  
51245263293. 3  
51245263294. 4

**Question Number : 53 Question Id : 51245219211 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No  
Correct Marks : 1 Wrong Marks : 0**

DNA was first discovered by\_\_\_\_\_.

1. Erwin Chargaff
2. J. F. Miescher
3. Watson
4. Crick

**Options :**

- 51245263295. 1
- 51245263296. 2
- 51245263297. 3
- 51245263298. 4

**Question Number : 54 Question Id : 51245219212 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Cut and Paste mechanism is used by the \_\_\_\_\_ Transposons.

1. Class I
2. Class II
3. Class III
4. Class IV

**Options :**

- 51245263299. 1
- 51245263300. 2
- 51245263301. 3
- 51245263302. 4

**Question Number : 55 Question Id : 51245219213 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which one of the following statements is correct as per 'Central Dogma of Molecular Biology'?

1. The code on DNA is 'Transcribed into RNA' and 'Translated into Protein'
2. The code on DNA is 'Translated into RNA' and 'Transcribed into Protein'
3. The code on DNA is 'Replicated into DNA' and 'Transcribed into Protein'
4. The code on RNA is 'Transcribed into DNA' and 'Translated into Protein'

**Options :**

51245263303. 1

51245263304. 2

51245263305. 3

51245263306. 4

**Question Number : 56 Question Id : 51245219214 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following best describes the order in which below mentioned enzymes participate in the Bacterial DNA replication?

1 = DNA polymerase I (Polymerizing Activity)

2 = 5'-Exonuclease activity of DNA Polymerase I

3 = DNA Polymerase III

4 = DNA Ligase

5 = RNA Polymerase (Primase)

Choose the **correct** sequence from the options given below

1. 4, 3, 2, 1, 5

2. 3, 2, 1, 4, 5

3. 1, 3, 2, 5, 4

4. 5, 3, 2, 1, 4

**Options :**

51245263307. 1

51245263308. 2

51245263309. 3

51245263310. 4

**Question Number : 57 Question Id : 51245219215 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

ORC is a \_\_\_\_\_ subunits protein complex.

1. Six
2. Seven
3. Eight
4. Nine

**Options :**

- 51245263311. 1
- 51245263312. 2
- 51245263313. 3
- 51245263314. 4

**Question Number : 58 Question Id : 51245219216 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following enzyme activity is required for formation of Okazaki fragments during lagging strand synthesis in eukaryotic DNA replication?

1. DNA Polymerase  $\alpha$
2. DNA Polymerase  $\beta$
3. DNA Polymerase  $\delta$
4. DNA Ligase I

**Options :**

- 51245263315. 1
- 51245263316. 2
- 51245263317. 3
- 51245263318. 4

**Question Number : 59 Question Id : 51245219217 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

The general RNA structure is very similar to the DNA structure, but in RNA the nitrogen base \_\_\_\_\_ takes the place that thymine occupies in DNA.

1. Guanine
2. Adenine
3. Uracil
4. Cytosine

**Options :**

- 51245263319. 1
- 51245263320. 2
- 51245263321. 3
- 51245263322. 4

**Question Number : 60 Question Id : 51245219218 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Experimental evidences clearly suggested that the enzyme involved in polymerizing activity adds nitrogen bases in \_\_\_\_\_ direction.

1. 3' → 5'
2. 5' → 3'
3. Both (1) and (2)
4. None of the above

**Options :**

- 51245263323. 1
- 51245263324. 2
- 51245263325. 3
- 51245263326. 4

**Question Number : 61 Question Id : 51245219219 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**



Which of the following sentences are correct for Isoaccepting tRNAs?

P. Multiple tRNAs that recognize synonym mRNA codons (third base degeneracy)

Q. Multiple tRNAs that react with the same codon

R. Multiple tRNAs representing the same amino acid

S. Multiple tRNAs recognized by the same aminoacyl-tRNA synthetase

1. P, Q
2. Q, R
3. R, S
4. P, Q, R, S

**Options :**

51245263327. 1
51245263328. 2
51245263329. 3
51245263330. 4

**Question Number : 62 Question Id : 51245219220 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

How many polypeptide chain/s can be synthesized simultaneously by a given ribosome?

1. Variable number based on length of mRNA
2. Variable number based on both length of mRNA and temperature
3. Up to 12 polypeptide chains
4. Only one polypeptide chain

**Options :**

51245263331. 1
51245263332. 2

51245263333. 3

51245263334. 4

**Question Number : 63 Question Id : 51245219221 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which class of RNA characteristically contains unusual purines and pyrimidines?

1. rRNA
2. tRNA
3. mRNA
4. hnRNA

**Options :**

51245263335. 1

51245263336. 2

51245263337. 3

51245263338. 4

**Question Number : 64 Question Id : 51245219222 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

met-tRNA<sub>f</sub><sup>met</sup> complex undergoes formylation in the presence of \_\_\_\_\_ enzyme.

1. Translocase
2. Peptidyl Transferase
3. Transformylase
4. Protease

**Options :**

51245263339. 1

51245263340. 2

51245263341. 3

51245263342. 4

**Question Number : 65 Question Id : 51245219223 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the followings is not a post-transcriptional modification process?

1. 5' Capping
2. Splicing
3. 3' Polyadenylation
4. Glycosylation

**Options :**

- 51245263343. 1
- 51245263344. 2
- 51245263345. 3
- 51245263346. 4

**Question Number : 66 Question Id : 51245219224 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the followings gene/s is/are linked with *E. coli* chromosome?

1. Lac Z Gene
2. Lac Y Gene
3. Lac A Gene
4. All of the Above Genes

**Options :**

- 51245263347. 1
- 51245263348. 2
- 51245263349. 3
- 51245263350. 4

**Question Number : 67 Question Id : 51245219225 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Dimer repair mechanism is a part of \_\_\_\_\_.

1. Photoreactivation
2. Excision Repair
3. Recombinational Repair
4. All of the above

**Options :**

- 51245263351. 1
- 51245263352. 2
- 51245263353. 3
- 51245263354. 4

**Question Number : 68 Question Id : 51245219226 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

THI-box is found in \_\_\_\_\_.

1. Tetrahydrofolate Riboswitch
2. TPP Riboswitch
3. ZMP/ZTP Riboswitch
4. SAH Riboswitch

**Options :**

- 51245263355. 1
- 51245263356. 2
- 51245263357. 3
- 51245263358. 4

**Question Number : 69 Question Id : 51245219227 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

\_\_\_\_\_ acts as a signal for infection and triggers an anti-viral response.

1. ds RNA
2. ss RNA
3. ds DNA
4. ss DNA

**Options :**

51245263359. 1  
51245263360. 2  
51245263361. 3  
51245263362. 4

**Question Number : 70 Question Id : 51245219228 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following mutagens is non-ionizing radiation?

1. UV-rays
2. X-rays
3. Alpha rays
4. Cosmic rays

**Options :**

51245263363. 1  
51245263364. 2  
51245263365. 3  
51245263366. 4

**Question Number : 71 Question Id : 51245219229 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

In eukaryotic organisms, the section of chromosomal DNA comprising of 140 to 200 base pairs winds around a distinct set of 8 positively charged \_\_\_\_\_ proteins.

1. Aspartate
2. Glutamate
3. Non-Histone
4. Histone

**Options :**

- 51245263367. 1
- 51245263368. 2
- 51245263369. 3
- 51245263370. 4

**Question Number : 72 Question Id : 51245219230 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following bonds are present between two strands of DNA double helix?

1. Covalent Bonds
2. Ionic Bonds
3. Phosphodiester Bonds
4. Hydrogen Bonds

**Options :**

- 51245263371. 1
- 51245263372. 2
- 51245263373. 3
- 51245263374. 4

**Question Number : 73 Question Id : 51245219231 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

DNA is present in \_\_\_\_\_.

1. Nucleus of Eukaryotes
2. Chloroplast
3. Mitochondria
4. All of the Above Cell Organelles

**Options :**

51245263375. 1

51245263376. 2

51245263377. 3

51245263378. 4

**Question Number : 74 Question Id : 51245219232 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which one of the followings is an inheritable genetic disease?

1. Small Pox
2. Alkaptonuria
3. Malaria
4. Typhoid

**Options :**

51245263379. 1

51245263380. 2

51245263381. 3

51245263382. 4

**Question Number : 75 Question Id : 51245219233 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

'Epigenetics' refers to the study of \_\_\_\_\_.

1. Gene Mutation
2. Gene Expression
3. Gene Variation
4. Gene Interaction

**Options :**

- 51245263383. 1
- 51245263384. 2
- 51245263385. 3
- 51245263386. 4

**Question Number : 76 Question Id : 51245219234 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

\_\_\_\_\_ removes the RNA primer and connects the Okazaki fragments during DNA replication.

1. DNA Polymerase I
2. DNA Polymerase II
3. DNA Polymerase III
4. DNA Ligase

**Options :**

- 51245263387. 1
- 51245263388. 2
- 51245263389. 3
- 51245263390. 4

**Question Number : 77 Question Id : 51245219235 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**



\_\_\_\_\_ inhibits Cdt1 activity during S phase in order to prevent re-replication of DNA.

1. GINS
2. ORC
3. Geminin
4. Telomerase

**Options :**

- 51245263391. 1
- 51245263392. 2
- 51245263393. 3
- 51245263394. 4

**Question Number : 78 Question Id : 51245219236 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following molecule contains the Genetic code?

1. mRNA
2. tRNA
3. rRNA
4. cDNA

**Options :**

- 51245263395. 1
- 51245263396. 2
- 51245263397. 3
- 51245263398. 4

**Question Number : 79 Question Id : 51245219237 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

How many possible tRNA molecules can exist for 20 amino acids?

1. 78
2. 74
3. 68
4. 64

**Options :**

- 51245263399. 1
- 51245263400. 2
- 51245263401. 3
- 51245263402. 4

**Question Number : 80 Question Id : 51245219238 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

\_\_\_\_\_ joins the sugar-phosphate backbones at each nick site that are left between 3'-OH and 5'-phosphate of the Okazaki fragments of newly synthesized strand in human.

1. DNA Polymerase  $\alpha$
2. DNA Polymerase  $\beta$
3. DNA Polymerase  $\delta$
4. DNA Ligase I

**Options :**

- 51245263403. 1
- 51245263404. 2
- 51245263405. 3
- 51245263406. 4

**Question Number : 81 Question Id : 51245219239 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

An aminoacyl t-RNA synthetase is responsible for:

1. Binding of m-RNA to ribosomes
2. Attaching amino group to organic acid
3. Formation of peptide bond
4. Joining an amino acid to t-RNA

**Options :**

- 51245263407. 1
- 51245263408. 2
- 51245263409. 3
- 51245263410. 4

**Question Number : 82 Question Id : 51245219240 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

'Kozak' term is associated with process of \_\_\_\_\_.

1. DNA Replication
2. DNA Repair
3. Translation
4. DNA Mutation

**Options :**

- 51245263411. 1
- 51245263412. 2
- 51245263413. 3
- 51245263414. 4

**Question Number : 83 Question Id : 51245219241 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

\_\_\_\_\_ is NOT involved in translating genetic information into proteins.

1. rRNA
2. tRNA
3. snRNA
4. siRNA

**Options :**

- 51245263415. 1
- 51245263416. 2
- 51245263417. 3
- 51245263418. 4

**Question Number : 84 Question Id : 51245219242 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Ribosomes possess \_\_\_\_\_ sites for association with tRNA.

1. E and A
2. E and P
3. A and P
4. E and R

**Options :**

- 51245263419. 1
- 51245263420. 2
- 51245263421. 3
- 51245263422. 4

**Question Number : 85 Question Id : 51245219243 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

In which of the following splicing events, the intermediates do not form the lariat or branched structure?

1. Group I Intron Splicing
2. Group II Intron Splicing
3. Trans Splicing
4. hnRNA Splicing

**Options :**

- 51245263423. 1
- 51245263424. 2
- 51245263425. 3
- 51245263426. 4

**Question Number : 86 Question Id : 51245219244 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following biomolecule/s show/s self-repair mechanism?

1. DNA Only
2. DNA and RNA
3. DNA and Protein
4. DNA, RNA and Protein

**Options :**

- 51245263427. 1
- 51245263428. 2
- 51245263429. 3
- 51245263430. 4

**Question Number : 87 Question Id : 51245219245 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

umu C, umu D gene family and Rec A protein are involved in:

1. SOS Repair
2. RER
3. BER
4. Recombinational Repair

**Options :**

- 51245263431. 1
- 51245263432. 2
- 51245263433. 3
- 51245263434. 4

**Question Number : 88 Question Id : 51245219246 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Mammals do not possess \_\_\_\_\_ responsible for RNA interference amplification.

1. Drosha
2. Dicer
3. RdRP
4. DCL1

**Options :**

- 51245263435. 1
- 51245263436. 2
- 51245263437. 3
- 51245263438. 4

**Question Number : 89 Question Id : 51245219247 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Format for the input sequence in 'BLAST' is \_\_\_\_\_.

1. GenBank
2. EMBL
3. FASTA
4. PIR

**Options :**

- 51245263439. 1
- 51245263440. 2
- 51245263441. 3
- 51245263442. 4

**Question Number : 90 Question Id : 51245219248 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the followings are examples of mutagens?

1. Alkylating Agents
2. Nucleotide Base Analogues
3. Ionizing Radiation
4. All of the above

**Options :**

- 51245263443. 1
- 51245263444. 2
- 51245263445. 3
- 51245263446. 4

**Question Number : 91 Question Id : 51245219249 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

A nucleoside is composed of \_\_\_\_\_.

1. Nitrogen Base + Pentose Sugar
2. Nitrogen Base + Phosphate
3. Pentose Sugar + Phosphate
4. Nitrogen Base + Pentose Sugar + Phosphate

**Options :**

51245263447. 1

51245263448. 2

51245263449. 3

51245263450. 4

**Question Number : 92 Question Id : 51245219250 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Circular DNA found in bacteria is known as \_\_\_\_\_.

1. Chromosome
2. Chromatin
3. Plasmid
4. Transposable Element

**Options :**

51245263451. 1

51245263452. 2

51245263453. 3

51245263454. 4

**Question Number : 93 Question Id : 51245219251 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**



'Special Transfers' in Molecular Biology referred to as \_\_\_\_\_ is known to occur only in case of certain viruses during specific situations or under controlled laboratory conditions.

1. Nascent Transcription
2. Truncated Transcription
3. Reverse Transcription
4. Forward Transcription

**Options :**

- 51245263455. 1
- 51245263456. 2
- 51245263457. 3
- 51245263458. 4

**Question Number : 94 Question Id : 51245219252 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Transcription involves generation of \_\_\_\_\_ chain from one strand of the DNA serving as a template.

1. cDNA
2. rRNA
3. mRNA
4. tRNA

**Options :**

- 51245263459. 1
- 51245263460. 2
- 51245263461. 3
- 51245263462. 4

**Question Number : 95 Question Id : 51245219253 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which are the requirements for initiation of protein synthesis from most eukaryotic mRNA?

1. 3' Poly A Tail
2. 3' Cap
3. 5' Cap
4. Both 3' Poly A Tail and 5' Cap

**Options :**

- 51245263463. 1
- 51245263464. 2
- 51245263465. 3
- 51245263466. 4

**Question Number : 96 Question Id : 51245219254 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following sentences truly represents 'Alternative Splicing'?

1. It creates protein from multiple segments of DNA present on different chromosomes
2. It creates different proteins from a single gene
3. It is not tissue specific
4. It is the reason why human genome is much simpler than other species

**Options :**

- 51245263467. 1
- 51245263468. 2
- 51245263469. 3
- 51245263470. 4

**Question Number : 97 Question Id : 51245219255 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Alternative splicing can give rise to transcript that differs in:

1. 3' Untranslated region of mRNA
2. 5' Untranslated region of mRNA
3. Coding region of mRNA
4. All of the above

**Options :**

- 51245263471. 1
- 51245263472. 2
- 51245263473. 3
- 51245263474. 4

**Question Number : 98 Question Id : 51245219256 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

What does depurination refer to?

1. Loss of T or C bases from DNA
2. Loss of A or G bases from DNA
3. Both (1) and (2)
4. Breaking of DNA Backbone

**Options :**

- 51245263475. 1
- 51245263476. 2
- 51245263477. 3
- 51245263478. 4

**Question Number : 99 Question Id : 51245219257 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

The first published complete gene sequence was of \_\_\_\_\_.

1. M<sub>13</sub> phage
2.  $\Phi \times 174$
3. T<sub>4</sub> phage
4.  $\lambda$  phage

**Options :**

- 51245263479. 1
- 51245263480. 2
- 51245263481. 3
- 51245263482. 4

**Question Number : 100 Question Id : 51245219258 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following proteins act as helicases during eukaryotic DNA replication?

1. CDK
2. Mcm2-Mcm7
3. GINS
4. Geminin

**Options :**

- 51245263483. 1
- 51245263484. 2
- 51245263485. 3
- 51245263486. 4