

# National Testing Agency

<b>Question Paper Name :</b>	Genetics and Genomics 29th August 2021 Shift 1
<b>Subject Name :</b>	Genetics And Genomics
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## Genetics and Genomics

<b>Group Number :</b>	1
<b>Group Id :</b>	603489250
<b>Group Maximum Duration :</b>	0
<b>Group Minimum Duration :</b>	120
<b>Show Attended Group? :</b>	No
<b>Edit Attended Group? :</b>	No
<b>Break time :</b>	0
<b>Group Marks :</b>	100
<b>Is this Group for Examiner? :</b>	No

## Genetics and Genomics-1

<b>Section Id :</b>	603489364
<b>Section Number :</b>	1
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory

<b>Number of Questions :</b>	100
<b>Number of Questions to be attempted :</b>	100
<b>Section Marks :</b>	100
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	603489680
<b>Question Shuffling Allowed :</b>	Yes

**Question Number : 1 Question Id : 60348917606 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

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

Which of the following is the evolutionary force that operate in small population that cause random changes in the gene pool and loss of genetic variation?

1. Hardy- Weinberg equilibrium
2. Genetic drift
3. Inbreeding depression
4. Migration

**Options :**

- 60348966237. 1
- 60348966238. 2
- 60348966239. 3
- 60348966240. 4

**Question Number : 2 Question Id : 60348917607 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

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

The human MN blood- type antigens are determined by two codominant alleles  $L^M$  and  $L^N$ . The MN blood types and corresponding genotypes of a population is given below. Calculate the genotypic frequency of the phenotype MN.

Phenotype	Genotype	Number
MM	$L^M L^M$	200
MN	$L^M L^N$	75
NN	$L^N L^N$	25

1. 0.25
2. 0.67
3. 0.083
4. 0.5

**Options :**

60348966241. 1  
60348966242. 2  
60348966243. 3  
60348966244. 4

**Question Number : 3 Question Id : 60348917608 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

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

Which of the following is an assumption of Hardy-Weinberg equilibrium?

1. The population is non randomly mating
2. The population is small
3. Natural selection has effect on allelic frequency
4. The population is randomly mating

**Options :**

60348966245. 1  
60348966246. 2  
60348966247. 3  
60348966248. 4

**Question Number : 4 Question Id : 60348917609 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

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

Histone in human nucleosome is rich in

1. Lysine & Arginine
2. Cysteine & Methionine
3. Aspartate & Glutamate
4. Tryptophan & Arginine

**Options :**

60348966249. 1

60348966250. 2

60348966251. 3

60348966252. 4

**Question Number : 5 Question Id : 60348917610 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

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

Inbreeding is usually measured by the inbreeding coefficient, which is a measure of the probability that two alleles are in the range of

1. -1 to 0
2. 0 to 1
3. -1 to 1
4. none of the above

**Options :**

60348966253. 1

60348966254. 2

60348966255. 3

60348966256. 4

**Question Number : 6 Question Id : 60348917611 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

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

In incomplete dominance\_\_\_\_\_

1. Phenotype of both allele is expressed
2. Phenotype of only one allele is expressed
3. Phenotype of neither of the alleles is expressed
4. Phenotype of both allele is partially expressed

**Options :**

60348966257. 1

60348966258. 2

60348966259. 3

60348966260. 4

**Question Number : 7 Question Id : 60348917612 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

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

A chromosome is the thickest during

1. anaphase
2. prophase
3. interphase
4. metaphase

**Options :**

60348966261. 1

60348966262. 2

60348966263. 3

60348966264. 4

**Question Number : 8 Question Id : 60348917613 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

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

In Hershey and Chase experiment the T<sub>2</sub> phage was labelled with radioactive isotope. Pick the correct statement which gives the correct labelling.

1. Protein coat was labelled with <sup>35</sup>S and DNA was labelled with <sup>32</sup>P
2. Protein coat was labelled with <sup>32</sup>P and DNA was labelled with <sup>35</sup>S
3. Protein coat was labelled with <sup>35</sup>S and RNA was labelled with <sup>32</sup>P
4. Protein coat was labelled with <sup>32</sup>P and RNA was labelled with <sup>35</sup>S

**Options :**

60348966265. 1

60348966266. 2

60348966267. 3

60348966268. 4

**Question Number : 9 Question Id : 60348917614 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

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

In DNA the glycosyl-bond conformation is of which type?

1. Syn in A helix type, anti in B helix type
2. Syn in both A and B helix type
3. Anti in both A and B helix type
4. Anti in A helix type and Syn in B helix type

**Options :**

60348966269. 1

60348966270. 2

60348966271. 3

60348966272. 4

**Question Number : 10 Question Id : 60348917615 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

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

Topoisomerases can relax supercoiled DNA. Choose the correct statement about topoisomerases.

1. Type I change the linking number in one step and require ATP. They make transient double stranded break in DNA. While the type II changes the linking number in two steps and doesn't require ATP. They make transient single stranded break.
2. Type I change the linking number in one step. They make transient single stranded break in DNA and doesn't require ATP. While the type II changes the linking number in two steps. They make transient double stranded break and require ATP.
3. Type I change the linking number in a single step by introducing single stranded break and require ATP. While the type II changes the linking number by introducing double stranded break and doesn't require ATP
4. Type I change linking number in two steps by introducing double stranded break and doesn't require ATP. While type II change the linking number in one step by introducing single stranded break and require ATP.

**Options :**

60348966273. 1

60348966274. 2

60348966275. 3

60348966276. 4

**Question Number : 11 Question Id : 60348917616 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Which of the following about RNA is incorrect?

1. The RNA contains ribose, instead of thymine it contains uracil, found usually as a single polynucleotide chain.
2. RNA chains fold back on themselves to form local regions of double helix similar to B-form DNA
3. RNA can fold up into complex tertiary structures
4. Nucleotide substitutions in combination with chemical probing predict RNA structure

**Options :**

60348966277. 1

60348966278. 2

60348966279. 3

60348966280. 4

**Question Number : 12 Question Id : 60348917617 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Which of the following about processing of rRNA and tRNA is correct?

1. Pre-tRNA function as nucleolar organizers
2. Small nucleolar RNA assists in processing pre-rRNAs
3. Pre-tRNA undergo extensive modification in the cytoplasm
4. Pre-tRNA is synthesised by RNA polymerase I

**Options :**

60348966281. 1

60348966282. 2

60348966283. 3

60348966284. 4

**Question Number : 13 Question Id : 60348917618 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

UGA is usually a stop codon in almost all organism. But in mycoplasma, spiroplasma, and mitochondria of some, it is an unusual codon which codes for the aminoacid

1. Thr
2. Gln
3. Cys
4. Trp

**Options :**

60348966285. 1

60348966286. 2

60348966287. 3

60348966288. 4

**Question Number : 14 Question Id : 60348917619 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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



Give the phase of meiosis in which crossing over and recombination occur.

1. Leptotene
2. Zygotene
3. Pachytene
4. Diplotene

**Options :**

60348966289. 1

60348966290. 2

60348966291. 3

60348966292. 4

**Question Number : 15 Question Id : 60348917620 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Proof reading of newly synthesised DNA is done by

1. Exonuclease
2. Topoisomerase
3. Primase
4. endonuclease

**Options :**

60348966293. 1

60348966294. 2

60348966295. 3

60348966296. 4

**Question Number : 16 Question Id : 60348917621 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Lack of independent assortment of two genes is due to

1. recombination
2. crossing over
3. linkage
4. repulsion

**Options :**

60348966297. 1

60348966298. 2

60348966299. 3

60348966300. 4

**Question Number : 17 Question Id : 60348917622 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

The cross where the sources of gametes are reversed is called

1. reciprocal cross
2. reverse cross
3. dihybrid cross
4. test cross

**Options :**

60348966301. 1

60348966302. 2

60348966303. 3

60348966304. 4

**Question Number : 18 Question Id : 60348917623 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Helicase loading is the first step in the initiation of replication in eukaryotes. It occurs in which phase of cell cycle?

1. G<sub>1</sub>
2. S
3. G<sub>2</sub>
4. M

**Options :**

60348966305. 1

60348966306. 2

60348966307. 3

60348966308. 4

**Question Number : 19 Question Id : 60348917624 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

The structure of DNA was discovered by

1. Robert Hook
2. Watson and Crick
3. Sutton and Boveri
4. Gregor Mendel

**Options :**

60348966309. 1

60348966310. 2

60348966311. 3

60348966312. 4

**Question Number : 20 Question Id : 60348917625 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Which of the following about DNA replication is not correct?

1. DNA polymerase require a primer to initiate replication
2. Duplex DNA are unwound and daughter strands are formed at the DNA replication fork
3. DNA replication occurs unidirectionally from each origin.
4. Replication begins at a sequence called an origin. Eukaryotes contains multiple replication origins.

**Options :**

60348966313. 1

60348966314. 2

60348966315. 3

60348966316. 4

**Question Number : 21 Question Id : 60348917626 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Homologous recombination can repair DNA damage and can generate genetic diversity. The correct order of repair of collapsed replication fork is

A. Ligate ends

B. Strand invasion

C. Cut strands at crossover

D. 5'-exonuclease acts on broken end. Other daughter strand ligated to repaired parental strand in unbroken chromosome

E. Branch migration

1. D, B, E, C, A

2. B, E, C, A, D

3. C, B, E, D, A

4. B, E, C, D, A

**Options :**

60348966317. 1

60348966318. 2

60348966319. 3

60348966320. 4

**Question Number : 22 Question Id : 60348917627 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Which of the following characteristics of pea plants was not used by Mendel in his experiments?

1. seed colour

2. seed shape

3. pod length

4. flower position

**Options :**

60348966321. 1

60348966322. 2

60348966323. 3

60348966324. 4

**Question Number : 23 Question Id : 60348917628 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Translation is initiated by\_\_\_\_\_

1.  $\beta$
2.  $\gamma$
3.  $\rho$
4.  $\sigma$

**Options :**

60348966325. 1

60348966326. 2

60348966327. 3

60348966328. 4

**Question Number : 24 Question Id : 60348917629 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Tetracycline blocks protein synthesis by\_\_\_\_\_

1. inhibiting binding of aminoacyl tRNA to ribosome
2. inhibiting initiation translation
3. inhibiting peptidyl transferase
4. inhibiting translocase enzyme

**Options :**

60348966329. 1

60348966330. 2

60348966331. 3

60348966332. 4

**Question Number : 25 Question Id : 60348917630 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Homozygosity and heterozygosity is determined through\_\_\_\_

1. back cross
2. test cross
3. Both 1 and 2
4. Neither of the two

**Options :**

60348966333. 1

60348966334. 2

60348966335. 3

60348966336. 4

**Question Number : 26 Question Id : 60348917631 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

How many phenotypes can be obtained from alleles  $I^A I^B$  i in human ABO blood grouping?

1. 1
2. 2
3. 3
4. 4

**Options :**

60348966337. 1

60348966338. 2

60348966339. 3

60348966340. 4

**Question Number : 27 Question Id : 60348917632 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Genotypic ratio of monohybrid cross is\_\_\_\_\_

1. 1:2:1
2. 3:1
3. 2:1:1
4. 9:3:3:1

**Options :**

60348966341. 1

60348966342. 2

60348966343. 3

60348966344. 4

**Question Number : 28 Question Id : 60348917633 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Incomplete dominance was studied in\_\_\_\_

1. Pisum
2. Lathyrus
3. Antirrhinum
4. Drosophila

**Options :**

60348966345. 1

60348966346. 2

60348966347. 3

60348966348. 4

**Question Number : 29 Question Id : 60348917634 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

An exception to Mendel's law is\_\_\_\_

1. Independent assortment
2. Linkage
3. Dominance
4. Purity of gametes

**Options :**

60348966349. 1

60348966350. 2

60348966351. 3

60348966352. 4

**Question Number : 30 Question Id : 60348917635 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

The geometrical device that helps to find out all the possible combinations of male and female gametes is known as\_\_

1. Bateson Square
2. Mendel Square
3. Punnett Square
4. Mendel's Cube

**Options :**

60348966353. 1

60348966354. 2

60348966355. 3

60348966356. 4

**Question Number : 31 Question Id : 60348917636 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Which term represents a pair of contrasting characters?

1. Heterozygous
2. Homozygous
3. Codominant genes
4. Allelomorphs

**Options :**

60348966357. 1

60348966358. 2

60348966359. 3

60348966360. 4

**Question Number : 32 Question Id : 60348917637 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**



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

Left-handed DNA is known as \_\_\_

1. A DNA
2. B DNA
3. Z DNA
4. C DNA

**Options :**

60348966361. 1

60348966362. 2

60348966363. 3

60348966364. 4

**Question Number : 33 Question Id : 60348917638 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

The alternate form of a gene is\_\_\_

1. Alternate type
2. Recessive character
3. Dominant character
4. Allele

**Options :**

60348966365. 1

60348966366. 2

60348966367. 3

60348966368. 4

**Question Number : 34 Question Id : 60348917639 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Group of adjacent nucleotides are joined by\_\_\_

1. Phosphodiester bond
2. Peptide bond
3. Ionic bond
4. Covalent bond

**Options :**

60348966369. 1

60348966370. 2

60348966371. 3

60348966372. 4

**Question Number : 35 Question Id : 60348917640 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Cystic fibrosis is \_\_\_\_\_

1. sex-linked recessive disorder
2. sex-linked dominant disorder
3. autosomal recessive disorder
4. autosomal dominant disorder

**Options :**

60348966373. 1

60348966374. 2

60348966375. 3

60348966376. 4

**Question Number : 36 Question Id : 60348917641 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

The genetic ratio of dihybrid cross is\_\_\_\_

1. 1:2:1
2. 3:1
3. 9:3:3:1
4. 2:1:1

**Options :**

60348966377. 1

60348966378. 2

60348966379. 3

60348966380. 4

**Question Number : 37 Question Id : 60348917642 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Who coined the term Mutation?

1. James Watson
2. Herman Joseph Muller
3. Hugo de Vries
4. None of the above

**Options :**

60348966381. 1

60348966382. 2

60348966383. 3

60348966384. 4

**Question Number : 38 Question Id : 60348917643 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Extrachromosomal inheritance involves genes passed on by the mothers through \_\_\_\_

1. Golgi bodies
2. Mitochondria
3. Chromosomes
4. Cytoplasm

**Options :**

60348966385. 1

60348966386. 2

60348966387. 3

60348966388. 4

**Question Number : 39 Question Id : 60348917644 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

In the human blood type AB, the alleles are\_\_\_\_

1. Dominant
2. Codominant
3. Sex-linked
4. Polygenic

**Options :**

60348966389. 1

60348966390. 2

60348966391. 3

60348966392. 4

**Question Number : 40 Question Id : 60348917645 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Humans have\_\_\_ pairs of chromosome

1. 12
2. 23
3. 46
4. 24

**Options :**

60348966393. 1

60348966394. 2

60348966395. 3

60348966396. 4

**Question Number : 41 Question Id : 60348917646 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

A pink snapdragon is crossed to a white snapdragon. What is the probability of getting a red snap dragon?

1. 1
2.  $\frac{1}{2}$
3.  $\frac{1}{4}$
4. None

**Options :**

60348966397. 1

60348966398. 2

60348966399. 3

60348966400. 4

**Question Number : 42 Question Id : 60348917647 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

9:7 ratio in the F2 generation represents\_\_\_\_

1. Incomplete dominance
2. Co-dominance
3. Epistasis
4. Complementary interaction

**Options :**

60348966401. 1

60348966402. 2

60348966403. 3

60348966404. 4

**Question Number : 43 Question Id : 60348917648 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

The crossing of F1 to either of the parents is known as\_\_\_\_

1. Test cross
2. Back cross
3. F1 cross
4. All of the above

**Options :**

60348966405. 1

60348966406. 2

60348966407. 3

60348966408. 4

**Question Number : 44 Question Id : 60348917649 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

The tendency of an offspring to resemble its parent is known as \_\_\_\_\_

1. Variation
2. Heredity
3. Resemblance
4. Inheritance

**Options :**

60348966409. 1

60348966410. 2

60348966411. 3

60348966412. 4

**Question Number : 45 Question Id : 60348917650 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Linkage \_\_\_\_\_ as the distance between two genes \_\_\_\_\_

1. Decreases, decreases
2. Unaffected, Decreases
3. Decreases, Increases
4. Increases, Increases

**Options :**

60348966413. 1

60348966414. 2

60348966415. 3

60348966416. 4

**Question Number : 46 Question Id : 60348917651 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

The enzyme required for transcription is\_\_\_\_\_

1. RNAase
2. DNA polymerase
3. RNA polymerase
4. Restriction enzyme

**Options :**

60348966417. 1

60348966418. 2

60348966419. 3

60348966420. 4

**Question Number : 47 Question Id : 60348917652 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

A way to generate different proteins from the same gene is by combining different segments of initial RNA transcript to make distinct mRNAs. Which one of the following terms defines this process?

1. Alternative splicing
2. Self splicing
3. Premature splicing
4. Protein splicing

**Options :**

60348966421. 1

60348966422. 2

60348966423. 3

60348966424. 4

**Question Number : 48 Question Id : 60348917653 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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



Give the main role of tRNA with regard to protein synthesis.

1. Proof reading
2. Identifies amino acid and transport them to ribosomes
3. Inhibits protein synthesis
4. All of the above

**Options :**

60348966425. 1

60348966426. 2

60348966427. 3

60348966428. 4

**Question Number : 49 Question Id : 60348917654 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Which of the following known as ' Drosophila of the plant kingdom?

1. *Arabidopsis thaliana*
2. *Pisum sativum*
3. *Neurospora*
4. *Oryza sativa*

**Options :**

60348966429. 1

60348966430. 2

60348966431. 3

60348966432. 4

**Question Number : 50 Question Id : 60348917655 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

One end of tRNA matched genetic code in three nucleotide sequences known as\_\_\_\_\_

1. Codon
2. Genetic code
3. Blunt ends
4. Anticodon

**Options :**

- 60348966433. 1
- 60348966434. 2
- 60348966435. 3
- 60348966436. 4

**Question Number : 51 Question Id : 60348917656 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Temin and Baltimore discovered reverse transcriptase in\_\_\_\_

- 1. Retro virus
- 2. T2 phages
- 3. Roux's sarcoma virus
- 4. Herpes virus

**Options :**

- 60348966437. 1
- 60348966438. 2
- 60348966439. 3
- 60348966440. 4

**Question Number : 52 Question Id : 60348917657 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Normal human eggs have\_\_\_\_

- 1. 22 autosomes and an X chromosome.
- 2. 22 autosomes and a Y chromosome.
- 3. 23 autosomes.
- 4. 46 chromosomes.

**Options :**

- 60348966441. 1
- 60348966442. 2
- 60348966443. 3

60348966444. 4

**Question Number : 53 Question Id : 60348917658 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

In Eukaryotes the region between 1st AUG and 5'-G cap is known as \_\_\_\_\_

1. Leader
2. Attenuator
3. UTR
4. ORF

**Options :**

60348966445. 1

60348966446. 2

60348966447. 3

60348966448. 4

**Question Number : 54 Question Id : 60348917659 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Rho protein, that is necessary for transcription termination, is a \_\_\_\_\_

1. Homotetramer
2. Heterotetramer
3. Heterohexamer
4. Homohexamer

**Options :**

60348966449. 1

60348966450. 2

60348966451. 3

60348966452. 4

**Question Number : 55 Question Id : 60348917660 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

What is DNA replication?

1. Conservative
2. Non-conservative
3. Semi-conservative
4. None of the mentioned

**Options :**

60348966453. 1

60348966454. 2

60348966455. 3

60348966456. 4

**Question Number : 56 Question Id : 60348917661 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Histone four (H4) consists of 102 amino acids and it has\_\_\_\_\_

1. Negative charge
2. Positive charge
3. Neutral
4. Non-of these

**Options :**

60348966457. 1

60348966458. 2

60348966459. 3

60348966460. 4

**Question Number : 57 Question Id : 60348917662 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Which blood type would not be possible for children of a type AB mother and a type A father?

1. O
2. A
3. B
4. AB

**Options :**

60348966461. 1

60348966462. 2

60348966463. 3

60348966464. 4

**Question Number : 58 Question Id : 60348917663 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Genetic Drift is more likely to happen in\_\_\_\_\_

1. Aquatic population
2. Larger population
3. Smaller population
4. Older population

**Options :**

60348966465. 1

60348966466. 2

60348966467. 3

60348966468. 4

**Question Number : 59 Question Id : 60348917664 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Which of the following is considered to be the start codon

1. AGG
2. UAG
3. GUG
4. AUG

**Options :**

60348966469. 1

60348966470. 2

60348966471. 3

60348966472. 4

**Question Number : 60 Question Id : 60348917665 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

A DNA sequence is read by an RNA polymerase that produces complementary antiparallel RNA strand known as\_\_\_\_\_

1. Hexa transcript
2. secondary transcript
3. primary transcript
4. tertiary transcript

**Options :**

60348966473. 1

60348966474. 2

60348966475. 3

60348966476. 4

**Question Number : 61 Question Id : 60348917666 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Which protein mentioned below can reverse central dogma?

1. Ribosome
2. Restriction Endonuclease
3. Reverse Transcriptase
4. RNA Polymerase

**Options :**

60348966477. 1

60348966478. 2

60348966479. 3

60348966480. 4

**Question Number : 62 Question Id : 60348917667 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

What is the direction in which the transcript produced by RNA polymerase grows?

1. 3'→5' direction on 3'→5' strand
2. 5'→3' direction on 5'→3' strand
3. 3'→5' direction on 5'→3' strand
4. 5'→3' direction on 3'→5' strand

**Options :**

60348966481. 1

60348966482. 2

60348966483. 3

60348966484. 4

**Question Number : 63 Question Id : 60348917668 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

The step of mitosis in which chromosomes line up along the equatorial plane of the cell is called\_\_\_\_

1. Prophase.
2. Metaphase.
3. Anaphase.
4. Telophase

**Options :**

60348966485. 1

60348966486. 2

60348966487. 3

60348966488. 4

**Question Number : 64 Question Id : 60348917669 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Give the condition necessary in eukaryotes, in order to initiate transcription.

1. RNA strand must be present
2. RNA polymerase must be present
3. Core promoter sequence must be present
4. None of these

**Options :**

60348966489. 1

60348966490. 2

60348966491. 3

60348966492. 4

**Question Number : 65 Question Id : 60348917670 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Which cation is placed in the catalytic subunit of RNA polymerase?

1.  $Zn^{2+}$
2.  $Mn^{2+}$
3.  $Mg^{2+}$
4.  $Fe^{3+}$



**Options :**

60348966493. 1

60348966494. 2

60348966495. 3

60348966496. 4

**Question Number : 66 Question Id : 60348917671 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Which of the following is incorrect about the nature of genetic code.

1. Universal
2. Overlapping
3. Commaless
4. Triplet

**Options :**

60348966497. 1

60348966498. 2

60348966499. 3

60348966500. 4

**Question Number : 67 Question Id : 60348917672 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

The structural genes involved in lac operon is \_\_\_\_

1. lacA-lacZ-lacY
2. lacP-lacI-lacZ
3. lacP-lacO-lacI
4. lacZ-lacI-lacY

**Options :**

60348966501. 1

60348966502. 2

60348966503. 3

60348966504. 4

**Question Number : 68 Question Id : 60348917673 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Name the carriers of the colour-blindness trait.

1. Men who are heterozygous for the trait.
2. Men who are homozygous for the trait.
3. Women who are heterozygous for the trait.
4. Women who are homozygous for the trait.

**Options :**

60348966505. 1

60348966506. 2

60348966507. 3

60348966508. 4

**Question Number : 69 Question Id : 60348917674 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Which of the following is correct?

1. A forms 2 hydrogen bonds with G; T forms 3 hydrogen bonds with C
2. A forms 3 hydrogen bonds with T; G forms 2 hydrogen bonds with C
3. A forms 2 covalent bonds with T; G forms 3 covalent bonds with C
4. A forms 2 hydrogen bonds with T; G forms 3 hydrogen bonds with C

**Options :**

60348966509. 1

60348966510. 2

60348966511. 3

60348966512. 4

**Question Number : 70 Question Id : 60348917675 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Which of these act as an inducer of the lac operon?

1. Allolactose
2. Lactose
3. Galactose
4. Glucose

**Options :**

60348966513. 1

60348966514. 2

60348966515. 3

60348966516. 4

**Question Number : 71 Question Id : 60348917676 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Which statement concerning a pair of alleles for a gene controlling a single characteristic in Humans is true?

1. Both genes come from the father.
2. Both genes come from the mother.
3. One gene comes from the mother and one gene comes from the father.
4. none of these

**Options :**

60348966517. 1

60348966518. 2

60348966519. 3

60348966520. 4

**Question Number : 72 Question Id : 60348917677 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Lac operon is an example of\_\_\_\_

1. Positive regulation
2. Negative regulation
3. Both positive and negative regulation
4. None of these

**Options :**

60348966521. 1

60348966522. 2

60348966523. 3

60348966524. 4

**Question Number : 73 Question Id : 60348917678 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Bacteriophage is a\_\_\_\_

1. Virus eating bacteria
2. Bacteria eating virus
3. Viroid attacking humans
4. Disease causing Prions

**Options :**

60348966525. 1

60348966526. 2

60348966527. 3

60348966528. 4

**Question Number : 74 Question Id : 60348917679 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Melting of DNA would lead to \_\_\_\_\_

1. Increase in UV absorption
2. Increase in Fluorescence
3. Decrease in UV absorption
4. Decrease in fluorescence

**Options :**

60348966529. 1

60348966530. 2

60348966531. 3

60348966532. 4

**Question Number : 75 Question Id : 60348917680 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Those cancers that are derived from ectoderm or endoderm of epithelial cell are called\_\_\_\_

1. Carcinoma
2. Sarcoma
3. Leukaemia
4. Myeloid

**Options :**

60348966533. 1

60348966534. 2

60348966535. 3

60348966536. 4

**Question Number : 76 Question Id : 60348917681 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

A double stranded DNA has 35% of Adenine. The percentage of cytosine is\_\_\_\_\_

1. 35%
2. 30%
3. 15%
4. 70%

**Options :**

60348966537. 1

60348966538. 2

60348966539. 3

60348966540. 4

**Question Number : 77 Question Id : 60348917682 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

The Z DNA helix\_\_\_\_\_

1. Is favored by an alternating GC sequence
2. Is the most common conformation of DNA
3. Is present in RNA- DNA hybrids
4. Is Right handed

**Options :**

60348966541. 1

60348966542. 2

60348966543. 3

60348966544. 4

**Question Number : 78 Question Id : 60348917683 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

The positive supercoiling of DNA helix ahead of replication fork is relieved by which enzyme?

1. DNA ligase
2. Topoisomerase
3. Helicase
4. Primase

**Options :**

60348966545. 1

60348966546. 2

60348966547. 3

60348966548. 4

**Question Number : 79 Question Id : 60348917684 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

The bases are held together in a DNA double helix by hydrogen bonds. These bonds are

1. Ionic bonds
2. Covalent bonds
3. Non-covalent bonds
4. Van der Waals forces

**Options :**

60348966549. 1

60348966550. 2

60348966551. 3

60348966552. 4

**Question Number : 80 Question Id : 60348917685 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

In mismatch repair mechanism adopted by prokaryotes, they distinguish the parental strand by\_\_\_\_\_

1. Hemi-methylation
2. Hemi-acetylation
3. Phosphorylation
4. None of these

**Options :**

60348966553. 1

60348966554. 2

60348966555. 3

60348966556. 4

**Question Number : 81 Question Id : 60348917686 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Hybrid vigour is due to \_\_\_\_

1. Emasculation
2. Heterozygosity
3. Linkage
4. Homozygosity

**Options :**

60348966557. 1

60348966558. 2

60348966559. 3

60348966560. 4

**Question Number : 82 Question Id : 60348917687 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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



Which of the following statement is false about DNA?

1. Located in chromosomes
2. Carries genetic information from parent to offspring
3. Abundantly found in cytoplasm
4. There is a precise correlation between amount of DNA and number of sets of chromosome per cell.

**Options :**

60348966561. 1

60348966562. 2

60348966563. 3

60348966564. 4

**Question Number : 83 Question Id : 60348917688 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Which of the following will not lead to evolution?

1. Genetic drift
2. Non random mating
3. Gene flow
4. Mutations

**Options :**

60348966565. 1

60348966566. 2

60348966567. 3

60348966568. 4

**Question Number : 84 Question Id : 60348917689 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Mendel studied the characters in garden peas that showed which phenomenon?

1. complete dominance
2. Pleiotropy
3. Epistasis
4. Incomplete dominance

**Options :**

60348966569. 1

60348966570. 2

60348966571. 3

60348966572. 4

**Question Number : 85 Question Id : 60348917690 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

What is meant by Albinism?

1. lack of production of pigment
2. Inability to produce normal connective tissue
3. the presence of two different codominant alleles
4. An extra chromosome 21

**Options :**

60348966573. 1

60348966574. 2

60348966575. 3

60348966576. 4

**Question Number : 86 Question Id : 60348917691 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Prokaryotes have one RNA polymerase. How many RNA polymerases are there in eukaryotes?

1. 2
2. 3
3. 4
4. None

**Options :**

60348966577. 1

60348966578. 2

60348966579. 3

60348966580. 4

**Question Number : 87 Question Id : 60348917692 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

A picture of a person's chromosomes is called \_\_\_\_

1. Syntype
2. Karyotype
3. Fingerprint
4. Karyomorph

**Options :**

60348966581. 1

60348966582. 2

60348966583. 3

60348966584. 4

**Question Number : 88 Question Id : 60348917693 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Which of the following is true about the inheritance of haemophilia and colour blindness?

1. Father → F<sub>1</sub> son → F<sub>2</sub> grand-son
2. Father → F<sub>1</sub> daughter → F<sub>2</sub> grand-son
3. Mother → F<sub>1</sub> son → F<sub>2</sub> grand-daughter
4. Father → F<sub>1</sub> daughter → F<sub>2</sub> grand-son and Mother → F<sub>1</sub> son → F<sub>2</sub> grand-daughter

**Options :**

60348966585. 1

60348966586. 2

60348966587. 3

60348966588. 4

**Question Number : 89 Question Id : 60348917694 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

How many different codons are possible?

1. 3
2. 20
3. 64
4. 62

**Options :**

60348966589. 1

60348966590. 2

60348966591. 3

60348966592. 4

**Question Number : 90 Question Id : 60348917695 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

The process of crossing over occurs in which phase of meiosis?

1. Anaphase I
2. Prophase I
3. Anaphase II
4. Prophase II

**Options :**

60348966593. 1

60348966594. 2

60348966595. 3

60348966596. 4

**Question Number : 91 Question Id : 60348917696 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Type of mutation in which a pyrimidine is substituted for a purine?

1. Transition
2. Transversion
3. Conversion
4. Deletion

**Options :**

60348966597. 1

60348966598. 2

60348966599. 3

60348966600. 4

**Question Number : 92 Question Id : 60348917697 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

In addition to RNA polymerase enzyme, the transcription in eukaryotes requires\_\_\_

1. Start and stop codons
2. Transcription factors
3. Ribosomes and tRNA
4. Aminoacyl synthetase

**Options :**

60348966601. 1

60348966602. 2

60348966603. 3

60348966604. 4

**Question Number : 93 Question Id : 60348917698 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Which of the following enzymes is the principal replication enzyme in E. coli?

1. DNA polymerase I
2. DNA polymerase II
3. DNA polymerase III
4. None of these

**Options :**

60348966605. 1

60348966606. 2

60348966607. 3

60348966608. 4

**Question Number : 94 Question Id : 60348917699 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Recombination of virus genomes occurs \_\_\_\_

1. by transduction
2. by transcription
3. simultaneous infection of a host cell by two viruses with homologous chromosomes
4. by transformation

**Options :**

60348966609. 1

60348966610. 2

60348966611. 3

60348966612. 4

**Question Number : 95 Question Id : 60348917700 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

What is the meaning of "Phenotype" ?

1. Shape and appearance
2. Image and hereditary
3. Mathematical form
4. Shape and birth or origin,

**Options :**

60348966613. 1

60348966614. 2

60348966615. 3

60348966616. 4

**Question Number : 96 Question Id : 60348917701 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

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

Which of the following mechanisms will remove uracil and incorporate the correct base?

1. Direct repair
2. Base excision repair
3. Mismatch repair
4. Nucleotide excision repair

**Options :**

60348966617. 1

60348966618. 2

60348966619. 3

60348966620. 4

**Question Number : 97 Question Id : 60348917702 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

Which of the following has the self-repairing mechanisms?

1. DNA and RNA
2. DNA, RNA and protein
3. Only DNA
4. DNA and proteins

**Options :**

60348966621. 1

60348966622. 2

60348966623. 3

60348966624. 4

**Question Number : 98 Question Id : 60348917703 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

The type of coiling in DNA is

1. Zig-zag
2. Left-handed
3. Opposite
4. Right-handed

**Options :**

60348966625. 1

60348966626. 2

60348966627. 3

60348966628. 4

**Question Number : 99 Question Id : 60348917704 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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



The enzyme photolyase is used in which repair method?

1. Base excision
2. Photo reactivation
3. Nucleotide excision
4. None of the mentioned

**Options :**

60348966629. 1

60348966630. 2

60348966631. 3

60348966632. 4

**Question Number : 100 Question Id : 60348917705 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

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

On hydrolysis of nucleoside there would not be any yield of \_\_\_\_

1. Purine
2. Pyrimidine
3. Pentose sugar
4. Phosphoric acid

**Options :**

60348966633. 1

60348966634. 2

60348966635. 3

60348966636. 4