

# GURUDAS COLLEGE

## B. Sc. SEMESTER - IV (Honours) Examination, 2021

Online Internal Assessment, 2021

Subject: BOTA

Subject Category: Honours

CORE COURSE-10

Course: BOT-A-CC-4-10-TH

Course Name: GENETICS

Date of Examination: 20<sup>th</sup> July, 2021, 1:30PM

All questions carry equal marks

Time: 30 minutes

FM:10

Answer the following (Any 5):

2X5=10

Q1). In a dihybrid cross, if F<sub>1</sub> individuals are self-crossed, phenotypic ratio comes to be 15:1. It is due to

- a) Duplicate genes
- b) Supplementary genes
- c) Dominant epistasis
- d) Recessive epistasis

Q2). If the percentage of crossing over between two genes is 10, then the distance between two genes will be

- a) 5 morganoid
- b) 10 centimorgans
- c) 20 centimorgans
- d) 40 map units

Q3). This is the reason why Gregor Johann Mendel did not recognize linkage phenomenon in his experiments

- a) He studied only pure plants
- b) He did not have a powerful microscope
- c) Characters he studied were situated on different chromosomes
- d) Many chromosomes to handle

Q4). Aneuploidy represents

- a) Increase or decrease number of chromosomes
- b) Increase in multiple sets of chromosomes
- c) Deletion of some parts of chromosome
- d) Addition of some parts of chromosome

Q5). Which of the following is not true about Inversion?

- a) Two strands with an inverted segment will not pair
- b) Inverted chromosomes are generally viable
- c) Inversion including centromere is known as paracentric
- d) Inversion can cause chromosome breakage.

Q6). What would be the altered base if Adenine is exposed to nitrous acid& what would be the altered pairing?

- a) Hypoxanthine (H) & G – C
- b) Hypoxanthine (H) & H – T
- c) Uracil & G – U
- d) Cytosine & A – T

Q7. Which of the following statements is true?

- a) Pyrimidine dimers in DNA are repaired by Mismatch type of DNA repair system.
- b) DNA damage caused by double strands breaks is repaired by Homologous recombination.
- c) Mis-paired bases in DNA are repaired by Direct repair system.
- d) All types of DNA repair mechanisms involve replacement of nucleotides.

Q8. The size of the pigmented sector on the corn kernel is larger if

- a) The excision of the transposable element from the pigment gene is early in development
- b) The excision of the transposable element from the pigment gene is late in development
- c) The transposable element is never excised from the pigment gene
- d) None of the above

### **Instructions for submission of answer scripts**

1. Write the front page/top sheet as per instruction.
2. Scan the pages in sequence and make a single PDF file.
3. Rename file as per instruction.
4. Email the PDF file within the stipulated time to the following

#### **Email IDs:**

1. bothons2020on@gmail.com
2. gdccug20@gmail.com
3. gdcexamhons@gmail.com
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