



# BRAINWARE UNIVERSITY

## Term End Examination 2019 - 20

Programme – Bachelor of Science Honours in Biotechnology

Course Name – Biotechnology & Human Welfare

Course Code – BBT304A

(Semester – 3)

Time allotted: 3 Hours

Full Marks: 70

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

### Group –A

(Multiple Choice Type Question)

20 x 1 = 20

1. Choose the correct alternative from the following (Answer any Twenty)

(i) The EC number 3.4.11.6 is conferred to:

- |            |                 |
|------------|-----------------|
| a. Trypsin | b. Lysozyme     |
| c. Urease  | d. Chymotrypsin |

(ii) The molecular weight of alcohol is:

- |                |                |
|----------------|----------------|
| a. 44.23 g/mol | b. 45.08 g/mol |
| c. 46.07 g/mol | d. 47.06 g/mol |

(iii) Streptomycin is produced from:

- |               |                |
|---------------|----------------|
| a. D-lactose  | b. D-galactose |
| c. D-rhamnose | d. D-glucose   |

(iv) The subtilisin gene in *E. coli* is usually mutated:

- |        |                  |
|--------|------------------|
| a. SDM | b. SHM           |
| c. SSM | d. None of these |

(v) Penicillin production usually stops at:

- |            |            |
|------------|------------|
| a. 15 days | b. 13 days |
| c. 12 days | d. 8 days  |

- (vi) The conversion of nitrogen to ammonia or nitrogenous compounds is called as:
- a. Nitrogen assimilation
  - b. Nitrogen fixation
  - c. Denitrification
  - d. Nitrification
- (vii) Symbiotic N<sub>2</sub> fixing cyanobacteria are present in all except:
- a. Anthoceros
  - b. Azolla
  - c. Cycas
  - d. Gnetum
- (viii) Industrial fixation is accomplished by:
- a. Helmonts process
  - b. Haber process
  - c. Friedal-Crafts reaction
  - d. Reimer Tiemann reaction
- (ix) Which of the following is not a characteristic of a transgenic crop?
- a. Herbicide resistance
  - b. Bt insect resistance toxin
  - c. Increased methionine content
  - d. None of these
- (x) Two genes from a bacterium (*Alcaligenes eutrophus*) and a cotton gene produce:
- a. a plastic
  - b. a vaccine against the bacterium
  - c. a pharmaceutical product
  - d. herbicide resistance
- (xi) Which of the following self-pollinating plant/(s) tend to be homozygous?
- a. Peas
  - b. Tomato
  - c. Peach
  - d. All of these
- (xii) Transplastomics
- a. targets genes in the chloroplast
  - b. provides exceptionally low yields of protein products
  - c. produces genes that are released in pollen
  - d. offers little opportunity for practical use
- (xiii) Which of the following gene is responsible for resistance against chilling?
- a. Glycerol 1 phosphate acyl transferase
  - b. Polygalactouranase
  - c. ACC deaminase
  - d. Sucrose phosphate synthase gene

- (xiv) What is greenhouse effect?
- It is a phenomenon that traps long wavelength radiation that leads to more heating and a higher resultant temperature.
  - It is a phenomenon of releasing heat wave to the environment.
  - Both a and b
  - None of the above
- (xv) When the problem of ozone depletion was first identified?
- 1970
  - 1971
  - 1972
  - 1973
- (xvi) Which of the following options is involved in production of carboxy haemoglobin?
- SO<sub>2</sub>
  - NO<sub>2</sub>
  - NO<sub>3</sub>
  - CO
- (xvii) The maximum size of fly ash is
- 1 μm
  - 100 μm
  - 1000 μm
  - 10 μm
- (xviii) The permissible concentration of PM 10 in the air is
- 60 μg/m<sup>3</sup>
  - 40 μg/m<sup>3</sup>
  - 50 μg/m<sup>3</sup>
  - 20 μg/m<sup>3</sup>
- (xix) BOD/COD ratio will always be:
- Equal to 1
  - Less than 1
  - More than 1
  - None of them
- (xx) Sound becomes hazardous noise pollution at decibels:
- Above 80
  - Above 30
  - Above 100
  - Above 120
- (xxi) Liquid hydrocarbon is converted into gaseous hydrocarbon by:
- Oxidation
  - Hydrolysis
  - Cracking
  - Distillation
- (xxii) Which one of the following causes is harmful to human health?
- Organic farming
  - Use of pesticides
  - Use of solar vehicles
  - Forests protection
- (xxiii) How many percentage of water approximately present in human body?
- 50%
  - 60%
  - 70%
  - 80%



- |         |                                                                   |   |
|---------|-------------------------------------------------------------------|---|
| 10. (a) | Explain "Transgenic plants".                                      | 5 |
| (b)     | Describe the transfer process of pest resistance genes to plants. | 5 |
| 11. (a) | Differentiate between "Synthetic" and "Biodegradable" polymers.   | 2 |
| (b)     | Explain the biosynthesis of PHB.                                  | 2 |
| (c)     | What are the properties of PHB?                                   | 2 |
| (d)     | Elaborate poly (hydroxyalkanoate) (PHA).                          | 4 |
| 12. (a) | Describe "Gene therapy."                                          | 2 |
| (b)     | Briefly describe the diagnostics involved in gene therapy.        | 2 |
| (c)     | Diagrammatically explain 'Monoclonal antibody production'.        | 2 |
| (d)     | Elucidate the "Human Genome Project".                             | 4 |

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