



## BRAINWARE UNIVERSITY

Term End Examination 2022

Programme – B.Sc.(Ag)-Hons-2021/B.Sc.(Ag)-Hons-2022

Course Name – Fundamentals of Soil Science-I

Course Code - CC-BAG171(T)

( Semester I )

Full Marks : 50

Time : 2:0 Hours

[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)

1 x 20=20

1. Choose the correct alternative from the following :

- (i) If the parent material transported by gravity is called
- |              |             |
|--------------|-------------|
| a) Aeolian   | b) Alluvium |
| c) Colluvium | d) Loess    |
- (ii) Which is the First phase of soil formation
- |                  |                 |
|------------------|-----------------|
| a) Weathering    | b) Humification |
| c) Podzolization | d) Eluviation   |
- (iii) Identify the Jenny's (1941) equation for soil formation is
- |                     |                            |
|---------------------|----------------------------|
| a) $S = f(p, r, t)$ | b) $S = f(Cl, b, r, p, t)$ |
| c) $S = f(p, cl)$   | d) $S = f(cl, o)$          |
- (iv) Identify the Active factors of soil formation
- |                 |                    |
|-----------------|--------------------|
| a) Biosphere    | b) Climate         |
| c) Both a and b | d) Parent material |
- (v) Choose the following options of Six master soil horizons are recognized by capital letters
- |            |           |
|------------|-----------|
| a) OAEBRCR | b) OAEKCR |
| c) OAELCR  | d) OAECDR |
- (vi) Select the dark coloured horizon in soil profile is
- |              |              |
|--------------|--------------|
| a) A-horizon | b) B-horizon |
| c) C-horizon | d) R-horizon |
- (vii) Select the following option the top most mineral horizon in soil profile is
- |              |              |
|--------------|--------------|
| a) A-horizon | b) O-horizon |
| c) C-horizon | d) B-horizon |
- (viii) In soil profile "Solum" means which horizon
- |                 |                   |
|-----------------|-------------------|
| a) A+B horizons | b) A+B+C horizons |
| c) C-horizon    | d) Bedrock (R)    |
- (ix) The involvement of climate and vegetation related matter under which type of soil classification
- |                 |                |
|-----------------|----------------|
| a) Azonal soils | b) Zonal soils |
|-----------------|----------------|

- c) Intrazonal soils  
 (x) Zonality concept related to which of the following scientist  
 a) Dokuchaev  
 c) Marbut  
 (xi) Identify how many soil orders are included in the 7th approximation system in soil classification  
 a) 15  
 c) 10  
 (xii) What is the lowest category of soil taxonomy is  
 a) Series  
 c) Order  
 (xiii) The cooling magma is quickly occur in which  
 a) Volcanic rocks  
 c) Sedimentary rocks  
 (xiv) The relative proportion of soil particles is called as  
 a) Soil Consistency  
 c) Soil Structure  
 (xv) Minerals under smectite group  
 a) Montmorillonite  
 c) Mica  
 (xvi) The content of CO<sub>2</sub> in soils is \_\_\_\_\_ as compared to atmospheric air  
 a) Higher  
 c) Same  
 (xvii) Which of the following is called as the "flesh" of the soil?  
 a) Sand  
 c) Clay  
 (xviii) Relative purity or strength of spectral colour in Munsell colour chart indicates  
 a) Hue  
 c) Chroma  
 (xix) Thermal conductivity follows the order of  
 a) Peat>Clay>Loam>Sand  
 c) Loam>Peat>Clay> Sand  
 (xx) What is the percentage of CO<sub>2</sub> in soil air?  
 a) 0.03  
 c) 0.3

- d) Both a and c  
 b) Baldwin  
 d) Epstein  
 b) 12  
 d) 9  
 b) family  
 d) Great group  
 b) Plutonic rocks  
 d) Igneous rocks  
 b) Soil Plasticity  
 d) Soil Texture  
 b) Kaolinite  
 d) Vermiculite  
 b) Lower  
 d) No change  
 b) Silt  
 d) None of these  
 b) Value  
 d) None of these  
 b) Sand> Loam> Clay> Peat  
 d) Peat>Loam>Clay>Sand  
 b) 0.003  
 d) 3

### Group-B

(Short Answer Type Questions)

2.5 x  
10=25

2. Write the names of soils order (2.5)
3. Write down the difference between Pedology and Edaphology (2.5)
4. What is the difference between Podzolization and Laterization process for soil formation (2.5)
5. What is Physical weathering and write the major factor of physical weathering (2.5)
6. What is the Soil Profile? Name of the Masters Horizon in the Soil Profile? (2.5)
7. Write and explain the feel method for soil texture analysis in the field (2.5)
8. Define Bulk density and Particle Density of the soil (2.5)
9. What is the difference between Soil Available water and Soil Capillary water? (2.5)
10. Write the difference between soil texture and soil structure (2.5)
11. Write the difference between Hydrolysis and Hydration reaction for soil weathering process (2.5)

OR

What is the difference between Permanent wilting point and Field capacity of water in soil (2.5)

**Group-C**  
(Long Answer Type Questions)

5 x 1=5

12. Write the factors affecting available water on soil texture, structure and organic matter content (5)

**OR**

Write the Biological Classification of soil water and explain the different type of soil biological water (5)

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