Seat No.:_____ No. Of Printed Pages: 02

[10]

SARDAR PATEL UNIVERSITY
M.Sc. (EST) (First Semester) Examination
Saturday, 29 October, 2016
10.00 am to 1.00 pm
PS01EEST03: Environmental Chemistry and Geology

Max. Marks: 70

Q.1. Multiple Choice Questions (Choose Correct Answer) [08]

(1) Following is the most dominant mineral in silt.
(a) Hornblende (b) Feldspar (c) Magnetite (d) Quartz

(2) Soil nutrients are absorbed by plant roots by _____ method.
(a) Diffusion (b) Facilitated transport (c) Active transport (d) None

(3) Loss of leaves in plants is due to deficiency of
(a) Iron (b) Nitrate (c) Sulfate (d) Phosphate

(4) Horse latitude is confined to
(a) 5^0 N - 5^0 S (b) 5^0-25^0 N & S (C) 30^0-35^0 N & S (D) 25^0-40^0 N & S

(5) Choose odd of the following:
(a) Conglomerate (b) Breccia (c) Sandstone (d) Slate

(6) Which of the following is not an example of depositional features formed by glacier?
(a) Drumlin (b) Esker (c) Horns (d) Kettle Lake

(7) Which of the following is not one of the twelve principles of green chemistry?
(a) using high temperatures to speed up reactions (b) minimizing toxic reagents used in a synthesis
(c) maximization of atom economy (d) minimizing the use of solvent

(8) The term which refers to the breakup within a compound due to microbial activity is
(a) Microbial degradation (b) Agrodegradation (c) Photodegradation (d) Decomposition

Q.2. Write a Short Note on followings (Any Seven). [14]

(1) Causes of wind deflection
(2) Enlist the factors affecting soil productivity
(3) Explain - Infiltration, Leaching
(4) Flowchart of soil types
(5) Formation of tributaries and meanders
(6) Give examples of green solvents with their specific uses.
(7) Methods to determine the soil texture
(8) Properties of minerals - hardness and streak
(9) State the differences between a chemical and a biochemical reaction

Q.3. (a) Write a note on soil problems and its solutions citing examples. [06]
(b) Describe in detail – Soil horizons, Soil textures, and Soil-types based on water content [06]

OR

(b) Describe the sources and salient features of non-mineral nutrients (C, H, O), and primary macronutrients (N, P, K). [06]

Q.4. (a) Explain the tree cell circulation model with diagram. [06]
(b) Explain sorting by graphical representation. Mention three different modes of sediment transportation by running water. [06]

OR

(b) Briefly explain the glacier budget. Add a brief note on mode of glacier movement. [06]

Q.5. (a) Define green chemistry. State and explain the twelve principles of green chemistry. **[06]**

(b) State the benefits of green Chemistry. Discuss the use of alternative feedstock with examples. **[06]**

OR

(b) Discuss the functional group approaches to green chemistry with special reference to elimination of toxic functional groups. **[06]**

Q.6. (a) Write a note on bulk density and particle density of soil. **[06]**

(b) How the igneous rocks are classified? Explain the different factors related to rate of cooling of magma. **[06]**

OR

(b) Briefly explain the types of metamorphism. Mention the classification of metamorphic rocks with suitable examples.