

**PARUL UNIVERSITY**  
**FACULTY OF APPLIED SCIENCE**  
**M.Sc., Winter 2019-20 Examination**

**Semester: 1****Subject Code: 11211102****Subject Name: Earth Surface Processes****Date: 29/11/2019****Time: 10.30 am To 1.00 pm****Total Marks: 60****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**  
 (a) Explain the carbon cycle in detail with appropriate diagram.  
 (b) Short note on earth's energy balance.
- Q.1. B) Answer the following questions (Any two) (04)**  
 (a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) (04)  
 1. Define Stefan-Boltzmann law?  
 2. Explain global patterns of runoff.  
 (b) Short note on Role of soils and silicate in weathering in the earth surface system. (04)  
 (c) Short note on Global heat transfer. (04)
- Q.2. A) Answer the following questions. (04)**  
 (a) Short note/ Brief note (2x2). (Each of 02 marks) (04)  
 1. Brief note on the surface water balance.  
 2. What is planck curve?  
 (b) Short note on the hydrological cycle. (04)
- Q.2. B) Answer the following questions (Any two) (03)**  
 (a) Multiple choice questions. (Each of 01 marks) (03)  
 1. How many percentage of water is stored in the oceans?  
 a) 97%                      b) 96%                      c) 98%                      d) 99%  
 2. Residence time of water in the Ocean and Seas is \_\_\_\_\_.  
 a) 4000 years+              b) 1000 years+              c) 2000 years+              d) 3000 years+  
 3. \_\_\_\_\_ is a so called blackbody radiator?  
 a) Sun                      b) Mars                      c) Moon                      d) Venus  
 (b) Short note on Topography and bathymetry. (03)  
 (c) Short note on Dynamic topography. (03)
- Q.3. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**  
 (a) Short note on the Indus sediment routing system.  
 (b) Explain Mechanical weathering.
- Q.3. B) Answer the following questions (Any two) (04)**  
 (a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) (04)  
 1. Define Aridisols.  
 2. Brief note on sheet silicates.  
 (b) Short note on Bedload. (04)  
 (c) Short note on driving mechanisms of Ocean-atmosphere interaction. (04)
- Q.4. A) Answer the following questions. (04)**  
 (a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks) (04)  
 1. Define Oxisols.  
 2. Brief note on regolith.  
 (b) Explain Suspended load. (04)
- Q.4. B) Answer the following questions (Any two) (03)**  
 (a) Multiple choice questions. (Each of 01 marks) (03)  
 1. How many percentage of the earth's water is fresh water?  
 a) 50 %                      b) 22 %                      c) 7 %                      d) 3%  
 2. Global average surface temperature of earth is \_\_\_\_\_.  
 a) 283 K                      b) 288 K                      c) 277 K                      d) 273 K  
 3. Identify endogenous process  
 a) Earthquake              b) Mass-wasting              c) Erosion                      d) Weathering  
 (b) Short note on solute load. (03)  
 (c) Short note on solar radiation. (03)