

**FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI**  
**DEPARTMENT OF FISHERIES AND AQUACULTURE TECHNOLOGY**  
**2018/2019 RAIN SEMESTER UNDERGRADUATE EXAMINATION**  
**FAT 302: OCEANOGRAPHY** **2 CR**  
**INSTRUCTION: ANSWER FOUR QUESTIONS, AT LEAST ONE FROM EACH**  
**SECTION** **TIME: 2 HRS: 30 MINS**

**SECTION A**

1. Define the following terms associated with marine ecosystem:  
(i) Biological oceanography (ii) Ecology (iii) Ecosystem (iv) Symbiosis/ mutualism  
(v) Parasitism (vi) Predation (vii) Commensalism (viii) Estuary (ix) Marine benthos  
(x) Coral reef
2. Discuss the mechanism of biological production and energy flow in marine ecosystem, based on the following attributes:  
(i) A typical food chain showing the energy pathways  
(ii) Primary production/photosynthesis (give chemical equation)  
(iii) Secondary production (name the producers)  
(iv) Chemosynthesis (name the producers)  
(v) Respiration (explain the associated chemical equation in the metabolic process)  
(vi) Give the unit of measure for organic production

**SECTION B**

3. Write short notes on the following physical properties of seawater  
(i) Viscosity (ii) Density of seawater (iii) Pressure in seawater (iv) Electrical conductivity
- b. Briefly comment on the following terms:  
(a) Diurnal tide. (b) Semidiurnal tide. (c) Mixed tides. (d) Spring tides. (e) Neap tides
4. With the use of illustration explain the following characteristics of wave  
(i) Period (ii) Wavelength (iii) Amplitude (iv) Wave steepness (v) Orbital motion
- b. Outline the effects of ocean current on aquatic life

**SECTION C**

- 5a. Define salinity and chlorinity and state the relationship between them
- b. Discuss various methods of determining salinity in oceanography
- c. The variation in salinity of ocean depends on many processes. Discuss this statement in relation to their dynamics and distribution
6. What is the term marine snow?
  - b. Itemise and discuss the components and composition of marine snow
  - c. Explain the importance of marine snow to aquatic biota