FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF PHYSICAL SCIENCES
DEPARTMENT OF GEOLOGY

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BTech GEOLOGY
2017/2018 SESSION

COURSE CODE: GEL 514 **UNIT:** 2

COURSE TITLE: ADVANCED SEDIMENTARY PETROLOGY

INSTRUCTIONS: ANY THREE QUESTIONS

TIME ALLOWED: 2 HOURS **DATE:**

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1. With the aid of good and illustrated sketches explain in detail the main components of sandstones in terms of framework grains, matrix, cements and accessory minerals.

2.
   a. Explain in detail the classification of sandstones using the scheme of Pettijohn, 1975.
   b. Petrographic analysis of four sandstones revealed the following percentages. You are required to classify them by plotting the values on QFL diagram of Pettijohn(1975).

Component	Quartz	Feldspar	Rock fragment	Matrix	Name of sandstone
Sample A	55 %	30%	15%	0%	
Sample B	95%	4%	1%	0%	
Sample C	65%	5%	30%	15%	
Sample D	78%	17%	5%	0%	

3. Briefly discuss any four (4) of the following using illustrative diagrams:
   a. Flaser, lenticular and wavy laminations
   b. Cementation in sandstones
   c. Microbial micritization in limestones
   d. Herringbone cross startification
   e. Hummocky cross stratification

4. Write explanatory notes on the framework grains, matrix and cements in limestones.

5. Explain the following diagenetic regimes with specific examples of mineral assemblages as they occur in sandstones.
   a. Eugenesis
   b. Mesogenesis
   c. Telogenesis