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**UNIVERSITY OF PETROLEUM  
AND ENERGY STUDIES**



**End Semester Examination – December 2017**

**Program/course: B.Tech. GSE, GIE, APE- UP & APE- Gas**

**Semester – III**

**Subject: Introductory Geology**

**Max. Marks : 100**

**Code : EASC- 105**

**Duration : 3 Hrs**

**No. of pages: 02**

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**Section-A**

1. Explain the following: [5×4]
  - a. For a given igneous rock, the texture is Porphyritic. What you can infer about the cooling history of the rock.
  - b. Pure and simple shear strain.
  - c. Characteristics of index fossil.
  - d. Salient features of destructive plate margin.
  - e. Petrification.

**Section-B: attempt all [4×10]**

2. Discuss the geometrical parameters of fold with diagram.
3. What are the morphological features of divergent and transform continental margin.
4. Critically examine the differences between various unconformities.
5. Define the term Fossil. Discuss different modes of preservation of fossils. [2 + 8]

**Section – C: Answer all questions, (choice is given in Q7)**

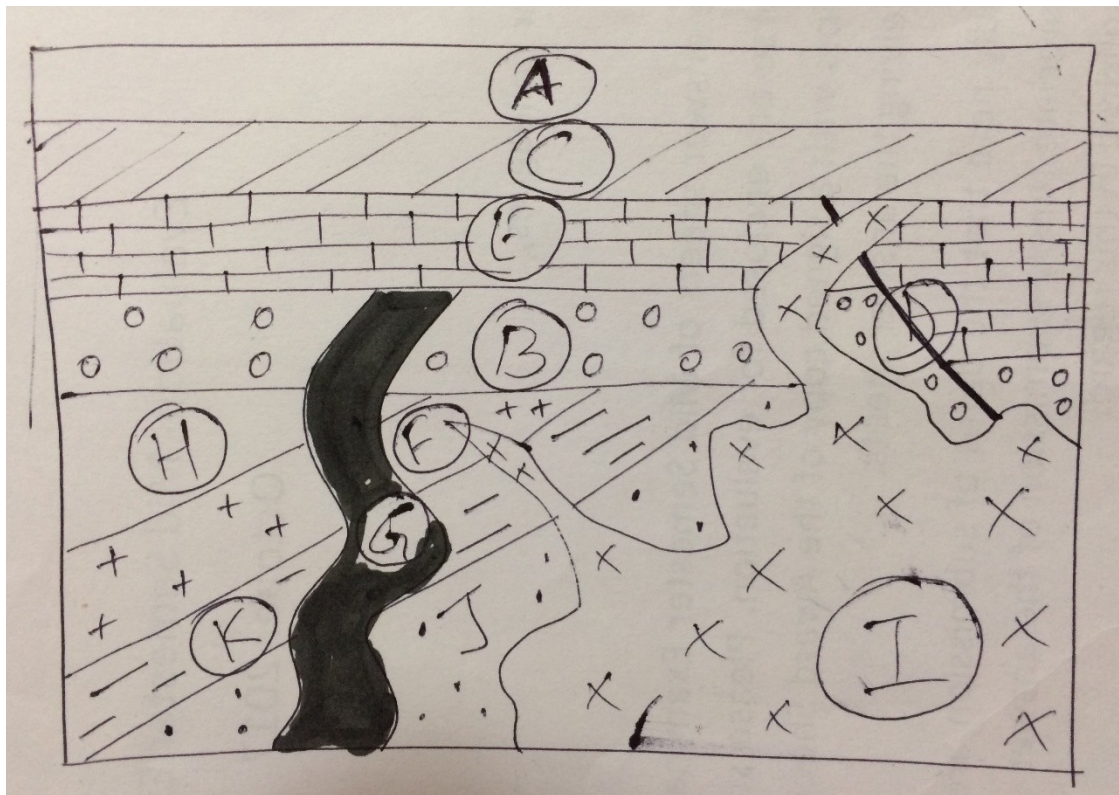
**[2×20]**

6. Seabird Exploration, a global provider for high-end exploration services, did a geological survey over an area and found the observations as presented in geological map (**Fig.1**). As a global company, they want to ensure best quality results and for that, they believe in better acquisition. Therefore, they contacted you for analysis and interpretation of the survey. Construct the report defining:
  - a. Sequence of layers from oldest to youngest with reason. [10]
  - b. Identify different structural and stratigraphic features present on map. [5]
  - c. Geological history of the area with all events occurred, in order. [5]

7. Describe the classification of folds on the basis of (a) Position of Axial Plane, (b) Degree of Compression of the Beds (c) Mode of Occurrence (d) Position of Fold Axis and (e ) Behavior with Depth.

OR

Describe the classification of faults on the basis of (a) Net Slip (b) Apparent movement of blocks (c) Dip Angle and (d) Fault Pattern.



**Fig. 1**

\*\*\*END\*\*\*\*