Benha University		First Year Geomatics
Faculty of Engineering at Shoubra		Final Exam
Geomatics Engineering Department		Engineering Geology
Academic Year: 2017/2018		Course Code: SUR124
Semester: Two		Date: 11 – 06 – 2018

• Answer all the following questions	• Duration: 3 Hours (for the two pages)
• Illustrate your answers with sketches when necessary	• No of questions in the first page: 3
• Assume any missing data	• Total Marks: 70 Marks (for the two pages)

1. A Define each of the following:
   iii. Geothermal Gradient.   ii. Cleavage.   i. Mineral
   vi. Batholith.   v. DRM   iv. Fault.

1. B Compare between each pair of the following:
   i. Disconformity and nonconformity.   iii. Quiet volcanos and explosive volcanos.
   ii. Cross bedding and graded bedding.   iv. Basic and acidic igneous rocks.

1. C Show how to differentiate between each pair of the following:
   i. Azurite and chlorite.   iii. Calcite and quartz.
   ii. Albite and orthoclase.   iv. Calcite and dolomite

(10 marks)

2. A Describe any four of the following minerals:
   i. Albite.   ii. Halite.   iii. Hematite.
   iv. Galina.   v. Rock – Salt   vi. Augite.

2. B. What is the economic importance of the following?
   i. Sedimentary rocks.   ii. Apatite.   iii. Flourspar.   iv. Underground water.

2. C. What is the geologic significance of the following?
   i. Graded bedding   ii. Cross – bedding   iii. Mudcracks

(10 marks)

3. A Describe any four of the following rocks:
   i. Limestone   ii. Basalt   iii. Arkose
   iv. Gabbro.   v. Quartzite   vi. Shale

3. B. i. Show how orthoclase can be weathered chemically.
   ii. Compare between arch dam and gravity dam.
   iii. Discuss characteristics of an artesian water.
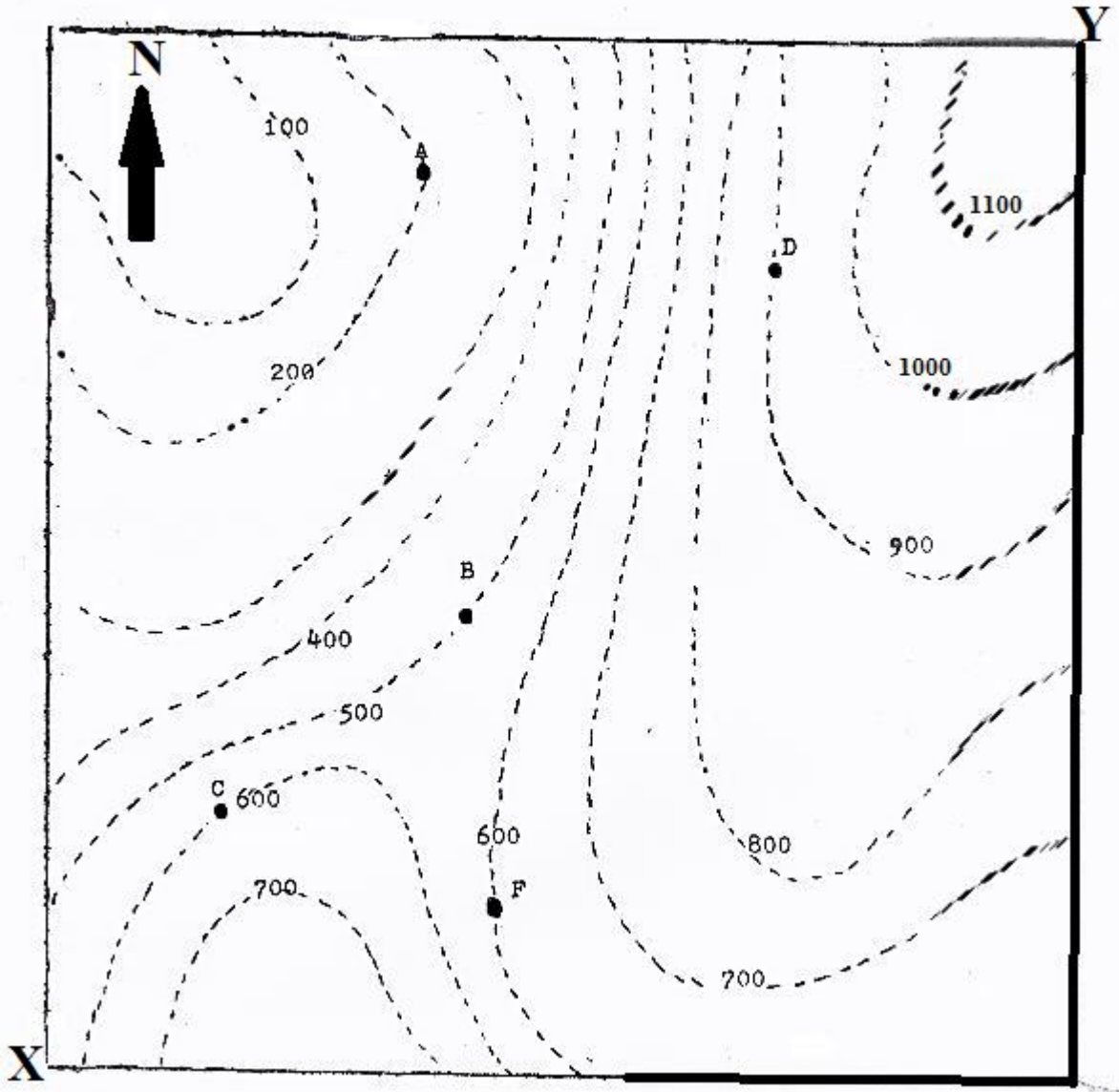
3. C. i. Give evidences for crustal deformation.
   ii. Show why study of metamorphic rooks is difficult.
   iii. Discuss selection of dam site.

(20 marks)

4. Solve the given geologic map. **(30 Marks)**

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Scale 1:5000   **Contour in meters**

A thin seam of coal is outcropping on surface at stations A, B and C, it is required to:

- Calculate the amount and direction of the true dip.
- Draw the outcrop of the seam.
- Calculate the apparent dip in the direction 45 degrees N – E.
- What is the depth to the drilled at points D and F to reach the coal seam.
- Draw a geologic section in the direction X-Y.