

Salahaddin University  
College of Science  
Department of Geology  
2<sup>nd</sup> Class



Monthly Examination of  
(Ign. & Met.) Petrology  
Date: 17/4/2023  
Time: 60 minutes

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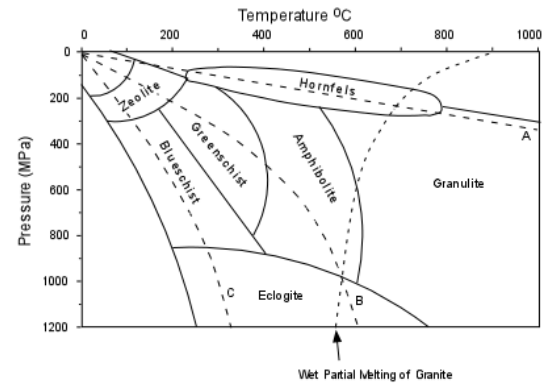
**Q1)** choose the correct answer between brackets **“40 mark”**

1. Non-foliated rocks found in contact metamorphic aureoles are called (**granofels, hornfels, slate, petrofels**).
2. In the post metamorphic textures if the rock is highly strained and the matrix become glassy, the (**cataclasite, mylonite, serpentinites**) term is used.
3. (**Batholith, Stock, Lopolith, Laccolith**) are large discordant bodies (surface exposure > 100 km<sup>2</sup>) with dome-shaped roofs.
4. (**Pyroxene, Garnet, Muscovite**) is a hydrous mineral that eventually disappears at the highest grade of metamorphism.
5. (**Crater, Caldera, Volcano, Columnar Jointing**) is a depression near summit of volcano.
6. (**Low, Intermediate, High**) grade metamorphism takes place at temperatures between about 450 to 650°C.
7. Marble is a metamorphic rock composed of coarse-grained (**plagioclase, quartz, calcite**).
8. (**Metamorphism, Metasomatism**) water brings ions from outside the rock, and they are added to the rock during metamorphism. Other ions may be dissolved and removed.
9. In the (**slaty, schistose, gneissic**) texture of the metamorphic rocks, the sheet silicates become unstable and dark colored minerals like hornblende and pyroxene start to grow.
10. (**Lower limit, Upper limit**) of metamorphism is overlap with diagenesis processes of sedimentary rocks.

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**Q2)** There is a clear relationship between metamorphic facies and geothermal gradient. A, B and C in the following figure are represent geothermal gradient for different metamorphic events. Complete the following table using the terms between brackets: **“6 mark”**

Line	Geothermal gradient (Normal, High, Low)	Geological event (Subduction, Contact metamorphism, Regional metamorphism)
A		
B		
C		



**Q3)** Write about metamorphic zone and count mineralogical zone **“10 mark”**

**Q4)** Answer the following

a- Define injection and classify according to depth. **“6 mark”**

b- The size and shape of an aureole metamorphism is controlled by: **“9 mark”**

c- Write contact metamorphic facies from low to high grade **“6 mark”**

d- Compare between lava flow and sill. **“10 mark”**

**Q5)**

1- what's the difference between blastoporphyritic texture and porphyroblastic texture? **“4 mark”**

2- Define the following **“9 mark”**

Mineral assemblage, Recrystallization, Skarn:

2<sup>nd</sup> Year  
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13/04/2023

Practical examination  
petrology  
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**Q1**

- a- Crystallinity.....
- b- Mode of occurrence.....
- c- Granularity.....
- d- Color index.....

**Q2**

- a- Min. Com.....
- b- Granularity.....
- c- Acidity.....
- d- Acidity.....

**Q3**

- a- Met. Type.....
- b- Texture.....
- c- Parent rock.....
- d- Rock Name .....

**Q4**

- a- Min. Com.....
- b- Mutual relationship.....
- c- Mode of occurrence.....
- d- Rock Name.....

**Q5**

- a- Min Com.....
- b- Acidity.....
- c- Mode of occurrence .....
- d- Rock Name.....

**Q6**

- a- Granularity.....
- b- Acidity.....
- c- Mode of occurrence.....
- d- Rock Name.....

**Q7**

- a- Met. Type.....
- b- Texture.....
- c- Parent rock.....
- d- Rock Name.....

**Q8**

- a- Met. Type.....
- b- Texture.....
- c- Met. Grade.....
- d- Parent rock.....

**Q9** Compare between X & Y in (1-Mutual relationship, 2-Acidity and 3- Mode of occurrence)

	X	Y
M		
A		
O		

**Q10**

- a-Classify igneous rocks according to “silica content”  
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- b-Mention texture types in regional metamorphism  
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