University of Abou Bekr Belkaid

Faculty of Technology
Civil Engineering Department
Second Year Licence (L2)

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Exam (GC301)
The corrected

1. Chemical Classification: On the basis of their chemical composition engineers prefer to classify rocks as: (1.5 points)
• Silicious rocks • Argillaceous rocks and • Calcareous rocks

2. Physical Classification Based on the structure, the rocks may be classified as: (*i*) **Stratified Rocks**-(*ii*) **Unstratified Rocks**-(*iii*) **Foliated Rocks** (1.5 points)

3. The bricks utilized in construction area unit classified as: (3 points)

Depending on quality, bricks are three type –

- First-class brick
- Second-class brick, and
- Third-class brick.

First-Class Bricks: These bricks are made from good quality raw materials. The color of first-class bricks is uniform. These are regular in size and shape and don't absorb more than **20%** water of their own dry weight when immersed in fresh water for **24** hours.

Second Class Bricks The quality of this type of bricks is a little bit less from first-class bricks. Such as these can be slightly over burned. The size and shape can slightly differ from the standard.These bricks don't absorb more than **22%** water of their own weight after **24** hours immersion in freshwater.

Third Class Bricks: This type of bricks isn't uniform in size and shape. They don't absorb more than 25% water of their own weight when immersed 24 hours in freshwater.

4. Types of Bricks Based on its Composition (1.5 points)

- Burnt Clay **Bricks**.
- Fire Clay **Bricks**.
- Fly ash Clay **Bricks**.
- Sand Lime **Bricks** (Calcium Silicate **Bricks**)
- Concrete **Bricks**.

6.Types of Limes and their Properties : The limes are classified as **fat lime, hydraulic lime and poor lime.** (1.5 points)

7. **The three main ingredients with a high percentage in cement are : lime- silica and alumina.** (1.5 points)

8. Types of cement are : White Cement (*ii*) Coloured Cement(*iii*) Quick Setting Cement(*iv*) Rapid Hardening Cement (*v*) Low Heat Cement(*vi*) Pozzulana Cement(*vii*) Expanding Cement (*viii*) High Alumina Cement (*ix*) Blast Furnace Cement(*x*) Acid Resistant Cement: (*xi*) Sulphate Resistant Cement: (*xii*) Fly Ash Blended Cement (2 points)

9. The three major kinds of concrete are : Reinforced concrete- prestressed concrete and precast concrete. (1.5 points)

10. The types of metals used in construction are : cast iron- steel and aluminium (1.5 points)

11. Timber Properties : hardness, soundness, strengh' density (1 points)

12. **Write whether theses sentences are advantages or disadvantages of steel:** (1 points)

- Steel is structurally sound and manufactured to strict specifications and tolerances. Advantage
- Steel is cost effective and rarely fluctuates in price. Advantage
- With the propagation of mold and mildew in residential buildings, using steel decreases these infestations. Advantage
- Heat conductivity: Calculations show that the web of an 18-gauge steel stud is about 31 times thinner than a "two-by" wood stud; however, steel conducts heat 310 times more efficiently than wood. As a net result, a "two-by" steel stud will conduct 10 times more heat than a "two-by" wood stud. Disadvantage

13. **Rebar steel 2. Mild steel 3. Structural steel** (1.5 points)

14. Dam, dike, tunnel, aqueduct (2 points)