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**University Examinations 2015/2016**

SECOND YEAR FIRST SEMESTER EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE IN HORTICULTURE

**EMT 3208: INTRODUCTION TO WORKSHOP TECHNOLOGY**

**DATE: NOVEMBER 2015 TIME:2HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. State four workshop rules associated with the use of bench tools. (4 Marks)
2. State any four possible causes of accidents in the workshop. (4 Marks)
3. (i) Define least count. (2 Marks)

(ii) Determine the least count of a vernier caliper. (3 Marks)

1. Define housekeeping and state three things that are done to ensure good housekeeping (4 Mark)
2. (i) What does heat treatment of metals mean? (2 Marks)

(ii) Give three reasons why heat treatment is carried out. (3 Marks)

1. State two advantages and tow disadvantages of using wood as a material for pattern making (4 Marks)
2. State two advantages and two disadvantages of welded joints. (4 Marks)

**QUESTION TWO (20 MARKS)**

1. Define welding. (2 Marks)
2. State four factors affecting the weldability of a metal. (4 Marks)
3. Using diagrams, differentiate between single transverse and double transverse joints. (4 Marks)
4. Using well labeled diagram, describe how arc welding takes place. (10 Marks)

**QUESTION THREE (20 MARKS)**

1. Describe the following processes as applied in heat treatment of metals and metal alloys
2. Full annealing
3. Normalising
4. Tempering (9 Marks)
5. State the three main processes that are followed when carrying out heat treatment. (3 Marks)
6. (i) Define forging. (2 Marks)

(ii) State three advantages and three disadvantages of forging. (6 Marks)

**QUESTION FOUR (15 MARKS)**

1. State any four forms of protective gear that is required when working in the workshop. (4 Marks)
2. State the uses of each of the following workshop tools:
3. Centre puch.
4. Dial gauge.
5. Scriber.
6. Combination set.
7. Angle plate.
8. Dot punch (6 Marks)
9. Give two functional differences between a bench vice and a machine vice. (2 Marks)
10. Give two differences between hand tool and machine tool. (2 Marks)
11. Using diagrams, illustrate the difference between taps and dies. (4 Marks)
12. State four types of files based on their cross-sections. (2 Marks)