



# MACHAKOS UNIVERSITY

University Examination 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY  
DEPARTMENT OF BUILDING AND CIVIL ENGINEERING  
FIRST YEAR FIRST SEMESTER EXAMINATION FOR  
ARTISAN IN PLUMBING  
PLUMBING TRADE THEORY

DATE: 18/4/2019

TIME: 11:30 – 2:30 AM

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**INSTRUCTIONS:**

**This paper consists of SIX questions**

**Answer any FIVE questions**

**All questions carry equal marks**

1.
  - a) List down **TWO** main sources of water supply hence give **TWO** examples of each. (4 marks)
  - b) By use of a neat diagram, show the process of a rain cycle. (6 marks)
  - c) Draw the following plumbing tools;
    - i) flat file
    - ii) hacksaw
    - iii) cold chisel
    - iv) ball pein hammer
    - v) tin snips (10 marks)
2.
  - a) Name **FIVE** materials used in plumbing works. (5 marks)
  - b) Describe the following;
    - i) ferrous metals
    - i) non-ferrous metals. (4 marks)
  - c) Name **THREE** classes of galvanized iron (GI) pipes and state the colour code for each. (6mks)
  - d) Name **THREE** classes of fire and give one example in each case. (5 marks)

3. a) List down **SIX** safety precautions to be observed in a plumbing workshop. (6 marks)
- b) Name and draw **THREE** joints on sheet metal. (9 marks)
- c) State **THREE** constituents that causes fire hence draw a fire triangle. (5 marks)
4. By means of a neat sketch, show the installation of a direct cold water supply from the mains to the storage tank. (20 marks)
5. a) Draw the following joints used in pipe work;
- i) screw joint
- ii) autogenous welded joint. (6 marks)
- b) Describe the following;
- i) communication pipe
- ii) service pipe
- iii) rising main (9 marks)
- c) List down **FIVE** categories of tools in plumbing. (5 marks)
6. a) State the importance of first aid to a victim. (4 marks)
- b) List down **FOUR** simple steps to follow when administering first aid to a victim. (8 marks)
- c) Name **FIVE** materials used for pipe work in plumbing. (5 marks)
- d) State the use of the following in a water installation;
- i) gate valve
- ii) tap. (3 marks)