



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology
Department of Mechanical & Automotive Engineering
UNIVERSITY EXAMINATION FOR:
BTech. Mechanical Engineering/BTech Marine Engineering
TMC 4102 : Workshop Technology and Practice I
SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: SEPTEMBER 2018
TIME: 2 HOURS
DATE: Pick Date Sep 2018

Instruction to Candidates:

You should have the following for this examination

- *Answer booklet*
- *Non-Programmable scientific calculator*

This paper consists of **FIVE** questions. Attempt any **THREE** questions.
Maximum marks for each part of a question are as shown.

Do not write on the question paper.

Question ONE

- State the aims of the OSHA Act 2007.(3mks)
- State **FOUR** safety precaution that should be taken when operating a lathe machine(4mks)
- What is the purpose of a system of safety colors and safety signs?(3mks)
- Discuss the duties of the employees at workplaces as stipulated in OSH 2007 act (5mks)
- List **FIVE** Personal protective equipment (PPEs) that should be all adhered to. (5mks)

Question TWO

- i. Describe at least **TWO** types of hacksaw blades.(4mk)
- ii. Describe the chiseling process (3mks)
- iii. Describe the general procedure for tapping.(5mks)
- iv. What is the purpose of using a reamer?(1mk)
- v. Thread cutting taps are supplied in sets of three. Name each tap and state where each would be used.(6mks)
- vi. Why is it necessary to keep the cutting edge cool when regrinding a cold chisel? (1mks)

Question THREE

- i. State the advantages and disadvantage of following brazing .(4mks)
- ii. Describe the **THREE** flame in oxy acetylene welding .(6mks)
- iii. State the **TWO** alloys used in brazing and soldering. (2mks)
- iv. Differentiate the metal inert gas and tungsten inert gas welding (4mks)
- v. Name **FOUR** types of nondestructive testing used in testing quality of a weld. (4mks)

Question FOUR

i. Define the following terms

- | | |
|--------------|------------------|
| i. Casting | v. Cores: |
| ii. Pattern: | vi. Gate: |
| iii. Riser: | vii. Binders: |
| iv. Runner: | viii. Green sand |

(8mks)

ii. Describe with a Sketch the **TWO** types of moulds. (4mks)

iii. State **TWO** advantage and **TWO** disadvantages of sand casting. (4mks)

iv. Differentiate between hot and cold chamber die casting.(4mks)

Question FIVE

i. Define moulding.(2mks)

ii. Name **TWO** types of permanent moulding.(2mks)

iii. State **TWO** advantages and **TWO** limitations of permanent mould casting. (4mks)

iv. State various tools and equipment used in forging. (2mks)

v. Name **TWO** types of milling machine.(2mks)

vi. Name **ONE** types of work holding equipment used with milling operations.(1mks)

vii. How are milling machine classified (3mks)

viii. List at least **FOUR** parts of a shaping machine (4mks)

****END****

Happy holidays