HERITAGE INSTITUTE OF TECHNOLOGY

Department of Mechanical Engineering

Subject: Workshop Practice **Subject Code: MECH1011**

Note: The report must be submitted in A4 Size paper on both sides with cover page, page no, border line & roll no on each page in a channel file.

CARPENTRY SHOP

1. What are the differences between Hard Wood & Soft Wood?
2. Name two methods of seasoning
3. Name three advantages of seasoning
4. Name a cutting, planning, striking, boring, holding, marking tool and draw the diagram of each one in relation to carpentry shop.
5. Name different processes that are involved in a typical carpentry job and the tools used for those operations.
6. Explain the terms Log, Batten, Plank, and Beam.
7. How are the following tools classified in relation to the operation they perform?
8. How are these tools specified?
   i. Try Square
   ii. Jack Plane
   iii. Vice
   iv. Marking Gauge
   v. Mortise Gauge
   vi. Rip Saw
   vii. Bench Vice
9. Common defects in timber.

FITTING SHOP

1. Name five important operations that are performed in fitting shop and tools used to perform those operations
2. Draw the following tools used in a fitting shop with a neat sketch for each of them.
   i. Bench Vice
   ii. Flat Chisel
   iii. Adjustable frame Hack Saw
   iv. Flat File
   v. Half Round File
   vi. Ball Peen Hammer
   vii. Outside Spring Caliper
3. How do you calculate the drill size for doing internal thread in a job piece?
4. Why are three taps used for doing an internal thread by hand?
5. Name the tool used for making an external thread by hand and explain how to make a external thread by hand using that tool?
6. Draw a typical thread and mark major dia, minor dia, pitch dia, depth of thread.
7. What do the abbreviations mean- BSW, BSP, TPI stand for in relation to a thread?

MOULDING AND CASTING SHOP

1. Describe the following tools that are used in foundry shop .What purpose are they used for?
   i. Trowel
   ii. Lifter
   iii. Rammer
   iv. Strike off bar
   v. Vent rod
   vi. Draw spike
   vii. Cope and Drag box.
2. Why is sand used for preparing a mould?
3. What are the ingredients that are mixed with sand in order to make a good mould and why are they used?
4. Describe the following terms in relation to a mould
   i. Runner
   ii. Riser
   iii. Vent holes
   iv. Gate
5. Draw typical green mould sand and label the following:
   i. Cope Box
   ii. Drag Box
   iii. Runner
   iv. Riser
   v. Parting Line

SHEET METAL SHOP

1. What is the full name of SWG, HR sheet, CRCA sheet, GI sheet?
2. Name various sheet metal forming processes and the tools used to perform each of those processes.
3. Name few sheet metal working processes and the tools used for each of those processes.
4. Draw the following tools used in Sheet metal work
   i. Hand Shears
   ii. Round Mallet
   iii. Prick Punch
   iv. Bench Vice
   v. Sheet Metal Gauge

WELDING SHOP

1. What is weldability?
2. Describe MMAW & Gas Welding.
3. Describe three types of flames in Gas welding with sketch.
4. What is the basic equipment that constitutes an Arc welding system?
5. Why a step down transformer is used in Arc welding process?
6. What are the functions of flux used in electrodes?
7. Describe different types of welding joints
8. What are the safety precautions that need to be observed in welding shop?

MACHINE SHOP

LATHE

1. How a lathe machine is specified? Describe principal components of a centre lathe.
2. Describe the following operations with schematic diagram –Turning-Taper turning-Facing-Grooving-Chamfering-Thread Cutting.
3. Explain Cutting speed, Feed & Depth of cut in relation to turning operation in lathe.

MILLING

1. How a Milling machine is specified?
2. What's the difference between UP milling and DOWN milling?
3. What operations may be done in a milling machine?

SHAPING MACHINE

1. Draw and explain a quick return mechanism in a shaping machine.
2. Explain the function of a clapper box.
3. How the stroke length and position of stroke in a shaping machine is adjusted?
4. Describe the feed mechanism in a shaper