Total number of printed pages:04

UG/1st Sem/UME101

2022

ENGINEERING WORKSHOP

Full Marks: 100

Time: Two hours

The figures in the margin indicate full marks for the questions.

Answer all the questions

1. State the ***true or false*** of the following. [1 x 5 = 5]
   a) Joining process are conducted in a lathe machine.
   b) Facing is an operation for generating flat surfaces in lathes.
   c) Milling cutters are single point cutting tool.
   d) Universal machine is suitable for milling spur and helical gears.
   e) Gas welding is an example of plastic welding.

2. Identify the name of the following tools /devices. [1x 5 = 5]

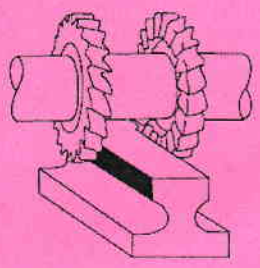

Fig. (a)

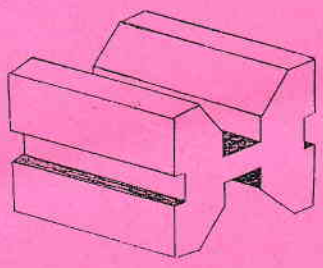

Fig. (b)

Fig. (c)

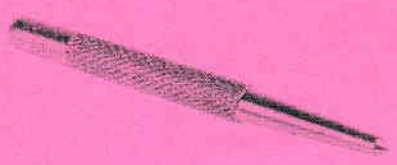

Fig. (d)

Fig. (e)

3. Choose the correct answer. [1 x10 =10]

i) A hacksaw blade cut on the
   a) Forward stroke
   b) Return stroke
   c) Both forward and return stroke
   d) Cutting depends upon the direction of force

ii) V block is used to
   a) Checks the trueness of flat surface
   b) Locates centre of round rods
   c) Check the surface roughness
   d) None of the above.

iii) Which one of these is striking tool?
   a) V block
   b) Surface plate
   c) Anvil
   d) Hammer

iv) Lathe machine produces --------
   a) Spherical surface
   b) Cylindrical surface
   c) Flat surface
   d) Both B and C

v) Which one of the following is not a material removal process?
   a) Drilling
   b) Griding
   c) Milling
   d) Welding

vi) Drill bit is a ___
   a) Single point cutting tool
   b) Multi-point cutting tool
   c) Both a) and b)
   d) None of these

vii) Clearance angle of a single point cutting tool is
   a) 5 to 6°
   b) 1 to 3°
   c) 10 to 15°
   d) 20 to 25°

viii) Milling cutter is
   a) Single point cutting tool
   b) Multi-point cutting tool
   c) Both a) and b)
   d) None of these

ix) Which one is not a type of production milling machine?
   a) Simplex milling machine
   b) Duplex milling machine
   c) Triplex milling machine
   d) Quad milling machine

x) Which one of the following is not a boring tool?
   a) Bradawl
   b) Gimlet
   c) Auger
   d) C -Clamp

4. Answer ***any ten*** of the following. [2 x 10 = 20]
   a) Why are the welding and milling operations processes known as the secondary manufacturing process?
   b) What do you mean by feed rate and depth of cut of a lathe machine operation?
   c) What is the use of a work holding device? Name different types of working holding device used in machining process.
   d) Explain briefly any two functions of flux used in electrodes during welding process?
   e) Name the different types of gases used in a gas welding process.
   f) What are the different types flames found in oxy-acetylene welding process?
   g) Write the uses of a try-square and a jack plane in a carpentry shop.
   h) Distinguish between the rip saw and cross-cut saw.
   i) What is mallet? Draw a schematic diagram of mallet.
   j) Distinguish between the inside and outside calipers.
   k) What is the main role of a boring operation in a lathe machine?
   l) What is the function of the ram in a shaping machine?

5. Answer ***any four*** of the following. [5 x 4 =20]
   a) Write briefly different safety precautions to be taken in mechanical workshop
   b) What is a cutting fluid? Write any four functions of cutting fluids.
   c) Explain the different types of rake angle.
   d) Mention any five cutting tools used in carpentry shop and their application.
   e) What do you mean forming process? Name any four metal forming process with schematic diagrams of operation.

6. Answer ***any four*** of the following. [10 x 4 = 40]
   a) Define welding process. What are the plastic and fusion welding? Name different types of welding joints with schematic diagrams.
   b) Explain briefly the role of main parts of a shaping machine with schematic diagram.
   c) What do you mean by filling operation? Discuss any five types of files used in a fitting shop.

d) Explain briefly the role of main parts of a knee and column milling machine with schematic diagram.

e) What are the types of lathe machine? Explain briefly any four operations that can be performed in lathe machine.

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