

Advance Skill Diploma
Press Tool & Die Maintenance & Stamping
Subject: Fundamentals of CNC Machines
Subject Code: NDME-105
Semester: 1st (Regular)
Batch: 2019-20
Theory (External): 70 Marks
Time: 03 hours

Instructions to the Students

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 2 marks.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 10 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

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SECTION -A (OBJECTIVE TYPE QUESTIONS)

(10x2=20 Marks)

- Q1 A machine will be said to have CNC control if
- a) The dimensions of work piece will be measured by sensors while cutting goes on
 - b) The tool motion is guided by drum or disc cam
 - c) The loading and unloading are being done by automatically
 - d) Control is being done by alphanumeric data
- Q2 Several machine tools can be controlled by a central computer in
- a) NC (Numerical Control) machine tool
 - b) CNC (Computer Numerical Control) machine tool
 - c) DNC (Direct Numerical Control) machine tool
 - d) CCNC (Central-Computer Numerical Control) machine tool
- Q3 The depth that the tool is plunged into the surface is called as _____
- a) Feed
 - b) Depth of cut
 - c) Depth of tool
 - d) Working depth
- Q4 Feed is measured in units of _____
- a) Length/revolution
 - b) Degree/revolution
 - c) Length
 - d) Velocity
- Q5 Which of the following is not the advantage of CNC machines?
- a) Higher flexibility
 - b) Improved quality
 - c) Reduced scrap rate
 - d) Improved strength of the components

- Q6 In machining of a workpiece, the material is removed by_____
- a) Drilling action
 - b) Melting action
 - c) Shearing acting
 - d) Using brittleness of the material
- Q7 CNC machine find the widest application in the field of
- a) Mass production
 - b) Small lot and batch production
 - c) Non-conventional machining
 - d) None of the above
- Q8 In a CNC milling machine a circular cut is always produced
- a) By operator's skill and experience
 - b) By copy milling from master circular hole
 - c) By combine motion of feed axes
 - d) None of the above
- Q9 In NC (Numerical Control) machine tool, the position feedback package is connected between
- a) Control unit and programmer
 - b) Programmer and machine tool
 - c) Control unit and machine tool
 - d) Programmer and process planning
- Q10 Which of the following tools is most suitable for very hard and brittle material?
- a) HSS
 - b) Cast-cobalt alloy
 - c) Carbides
 - d) None of the mentioned

SECTION -B (ESSAY TYPE QUESTIONS)

(5x10=50 Marks)

- Q1 State the advantages and disadvantages of CNC machines.
- Q2 Classify the cutting tool with brief detailing on the basis of tool:
i) Construction ii) Material.
- Q3 Write the functioning of Machine Control Unit (MCU) and Feed Back System (FS) in CNC machine tool.
- Q4 Write the construction and utility of following instruments:
i) Micrometer ii) Vernier Caliper
- Q5 Explain Superior features of CNC machine over conventional machines.
- Q6 Write down the types of tool holding devices-spindle tooling-flexible tooling.
- Q7 What is the role of Automatic Tool Changer (ATC) in CNC during machining on work piece?
- Q8 How Swarf removal system works during milling operation on CNC machine?

*****END OF PAPER*****