

# NETTUR TECHNICAL TRAINING FOUNDATION DIPLOMA IN TOOL ENGINEERING & DIGITAL MANUFACTURING – CP01 IV SEMESTER REGULAR & SUPPLEMENTARY EXAMINATION-JULY 2023

Subject Code: CP01405T	Total Marks:
PART B	
<b>1.0 ANSWER ANY EIGHT OF THE FOLLOWING</b>	2*8=16
1.1 Productivity is enhanced with CNC machine. Justify.	
1.2 How surface coating will play an important role in CNC machin	nes
1.3 List the different types of canned cycle used in CNC turning cer	nters.
1.4 How do you classify NC based on motion control system?	
1.5 What is the meaning of G28 U0 W0?	
1.6 Briefly explain the meaning of following, a); b)/	
1.7 Briefly explain the term "BLOCK".	
1.8 What is dwell? Explain its necessity.	
1.9 What is programme number?	
1.10 Write the difference between M03 and M04	

## 2.0 ANSWER ANY SIX OF THE FOLLOWING

- 2.1 What are the additional features available in CNC compared to NC?
- 2.2 Explain closed loop system with neat sketch
- 2.3 Briefly describe the functions of ATC.

Subject: CNC Technology

- 2.4 Explain incremental and absolute co-ordinate system
- 2.5 Explain the importance of cutter radius compensation.
- 2.6 Write the difference between CNC turning center and machining Centre
- 2.7 List five M-codes and write the functions
- 2.8 Explain Rough turning cycle format.

## 3.0 ANSWER ANY FOUR OF THE FOLLOWING

- 3.1 Specify any eight areas of application of CNC Machines
- 3.2 Write the tool selection criteria for the following materials-P, M, K, N, S, and H
- 3.3 Explain with neat sketch axis nomenclature of CNC turning centre
- 3.4 Explain the importance of absolute encoders in CNC.

3.5 Explain the importance of reciprocating ball screw used in the actuation system of CNC machine?

3.6 Define following:

(a) Preparatory Function (b) Miscellaneous Function (c) Feed Function

Total Time: 2 Hr. Total Marks: 50

4\*4=16

3\*6=18



# NETTUR TECHNICAL TRAINING FOUNDATION DIPLOMA IN TOOL ENGINEERING & DIGITAL MANUFACTURING – CP01 IV SEMESTER SUPPLEMENTARY EXAMINATION-JULY 2023

### Subject: Pneumatics & Hydraulics Subject Code: CP010406

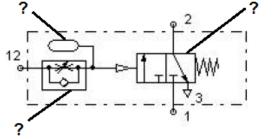
PART B

### 1.0 ANSWER ANY EIGHT OF THE FOLLOWING

- 1.1 List any six applications of 'Pneumatic System'.
- 1.2 Differentiate between 'Theoretical Volume & Effective Delivery Volume'.
- 1.3 List out the Disadvantages of Pneumatic system.
- 1.4 Explain about Actuator.
- 1.5 What is 'Isothermal Compression'?
- 1.6 Write two problems that occur with 'Excessive Lubrication'.
- 1.7 Define Pascal's Law.
- 1.8 Name two different types of 'Drives' used in compressors.
- 1.9 Define the term 'Atmospheric Pressure'.
- 1. 10 What do you mean by Venturi Effect?

### 2.0 ANSWER ANY SIX OF THE FOLLOWING

- 2.1 Differentiate between 'Absolute Pressure and Gauge Pressure'.
- 2. 2 Draw the symbol of 5/2 single Air Pilot Operated DC Valve and 4/3 Lever Operated DC Valve.
- 2.3 What are the criteria for selecting 'Pipe Diameter' in Pneumatics System?
- 2.4 How to determine the pressure at a depth below the 'Free Surface of a Liquid'?
- 2. 5 Briefly explain the following:
  - a) Cylinder with End Position Cushioning b) Hydraulic Telescopic Cylinder.
- 2. 6 Identify the element and label the parts fig: 1



- 2.7 Name different methods of 'Compressor Regulation'.
- 2.8 Write a short note on 'Routine Maintenance of Compressed Air Filter'.

### 3.0 ANSWER ANY FOUR OF THE FOLLOWING

3.1 What is the need of a Hydraulic Filter in the Hydraulic Power Pack? Explain various type of Hydraulic Filters used in Hydraulic system.

Fig: 1

- 3. 2 Explain Bernoulli's Principle mathematically.
- 3.3 List out various benefits of Low Cost Automation.
- 3.4 Explain the functions of a 'FRL Unit'.
- 3. 5 With a neat sketch explain the working of a Diaphragm Cylinder.
- 3.6 Explain adsorption drying Process with a neat sketch.

3\*6=18

Time: 2 Hr.

Marks: 50

4\*4=16