

**NETTUR TECHNICAL TRAINING FOUNDATION**  
**DIPLOMA IN MECHATRONICS ENGINEERING & SMART FACTORY-CP15**  
**III SEMESTER SUPPLEMENTARY EXAMINATION-JUNE 2023**

**Subject: Mechanics of Machines**  
**Subject Code: CP15305T**

**Total Time: 2 Hr.**  
**Total Marks: 50 Marks**

**PART B**

**1.0 ANSWER ANY EIGHT OF THE FOLLOWING**

**2\*8=16**

- 1.1 What do you mean by work?
- 1.2 Write the difference between machine and structure
- 1.3 Define Geneva Wheel Mechanism
- 1.4 List the material used for Belts
- 1.5 Define Chain Drive
- 1.6 List the types of Gears
- 1.7 Define Manual Lubrication
- 1.8 Define Frictional Bearing
- 1.9 Define Cam and Follower
- 1.10 List the types of Frictional Guide ways

**2.0 ANSWER ANY SIX OF THE FOLLOWING**

**3\*6=18**

- 2.1 List the types of Simple machines
- 2.2 Classify the Kinematic Pair according to the given condition (the type of closure.) and Explain in detail?
- 2.3 List any two application, advantages and disadvantages of Flat Belt Drive
- 2.4 Explain in details about the Hoisting chains types with diagram
- 2.5 List the Purpose of Lubrication
- 2.6 List the benefits of Balancing
- 2.7 List the factors should be considered while selecting the Chain Drive
- 2.8 List the advantages and disadvantages of Frictional Bearing

**3.0 ANSWER ANY FOUR OF THE FOLLOWING**

**4\*4=16**

- 3.1 In a certain weight lifting machine, a weight of 1 kN is lifted by an effort of 25 N. while the weight moves up by 100 mm, the point of application of effort moves by 8m. Find the mechanical advantage, velocity ratio and efficiency of the machine?
- 3.2 Explain in brief about double crank chain mechanism with diagram
- 3.3 List in detail about the Gear Train, its image and its application
- 3.4 Write the Classification of Followers
- 3.5 Explain the working of Slider Crank Mechanism with neat sketch
- 3.6 Define Damping? Explain its types in details

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**DIPLOMA IN MECHATRONICS - CP15**  
**III SEMESTER SUPPLEMENTARY EXAMINATION – JUNE 2023**

**Subject: Mechatronics System**  
**Subject Code: CP15 03 06**

**Total Marks : 50**  
**Total Time : 2H**

**PART B**

**1.0 ANSWER ANY EIGHT OF THE FOLLOWING**

**2\*8=16**

- 1.1 Define Guide way.
- 1.2 Mention any 6 application of mechatronics.
- 1.3 What is Tool monitoring system?
- 1.4 Write a short on Tychoways.
- 1.5 Give any two examples of storage devices.
- 1.6 What is Pneumatics?
- 1.7 Name the types of Elements or link.
- 1.8 What are the types of Cam?
- 1.9 Define Hydraulic Motor.
- 1.10 Define step angle for a stepper motor.

**2.0 ANSWER ANY SIX OF THE FOLLOWING**

**3\*6=18**

- 2.1 List the benefits of mechatronic system.
- 2.2 What are the classifications of Guide ways?
- 2.3 Write a short note on magnetic disc.
- 2.4 Explain working of DAC.
- 2.5 What is Kinematics Chain & Kinematics Pair?
- 2.6 List the three torque transmission elements in mechanical transmission systems.
- 2.7 List the out factors used for specify a stepper motor.
- 2.8 Give an explanation for tension side & slack side in open belt drive system & Mention its direction of rotation.

**3.0 ANSWER ANY FOUR OF THE FOLLOWING**

**4\*4=16**

- 3.1 Draw neat diagram about Building blocks of mechatronics.
- 3.2 What are the types of Antifriction guide ways? Explain anyone with a neat sketch.
- 3.3 Explain Data presentation elements.
- 3.4 Write the advantages and disadvantages in pneumatic system.
- 3.5 Explain the working of a brushless DC motor.
- 3.6 List the difference between Convention Systems & Mechatronics System.