



College of Engineering & Technology

Department: Mechanical Engineering Marks: 20
Lecturer: Dr. Rola Afify Time: 8:30 - 10:00
Course Code: ME464 Date: 8/5/2016

Name:

R.N.:

Answer the following questions:

Question one (6 marks)

a) For Axial Piston pump (Bent-Axis design) when the cylinder block centerline is parallel to the drive shaft centerline, the produced flow is:

- i) Zero ii) Average iii) Maximum

b) Which type of Gears [Spur, Helical, Herringbone] is very noisy?
Which type develops excessive end thrust?

e) Which of the following valves are used for Direction control?

- i- Needle valve
- ii- Pressure-reducing valve
- iii- Check valve
- iv- Sequence valve
- v- Shuttle valve
- vi- Unloading valve
- vii- Relief valve
- viii- Four-way, two position valve

Question two (8 marks)

A) Find the number of pistons of an axial piston pump delivers $0.033 \text{ m}^3/\text{min}$ at 1000 rpm. The offset angle is set at 10° and the volumetric efficiency is 94%. 15-mm-diameter pistons arranged on a 125-mm-diameter piston circle.

B) Compare between Vane Pump and Piston Pump.

Question three (6 marks)

Write down the words that represent the name of each of the following:

