R09

Code No: C8002

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M.Tech I Semester Examinations, March/April 2011

APPLIED INDUSTRIAL HYDRAULICS

(MECHATRONICS)

Time: 3hours **Max. Marks: 60**

Answer any five questions

All questions carry equal marks

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1. (a) Describe the various elements in the hydraulic power pack.
   (b) Draw the symbolic representation of any six hydraulic elements and explain their use in hydraulic systems. [12]

2. Classify the pumps used in hydraulic systems: Mentioning their applications with a block diagram explain operation of any one of them. [12]

3. Explain the principle of operation, advantages limitations and applications of various hydraulic control valves used in motion control mechanism. [12]

4. (a) Describe various hydraulic accessories used in hydraulic systems.
   (b) Describe Vane motor used in hydraulic systems with a neat sketch. [12]

5. (a) Explain the different operating methods used to actuate direction control valves in hydraulic systems.
   (b) Write the advantages of hydraulic system over the pneumatic system [12]

6. Draw a circuit diagram to control and operate hydraulic acting cylinder using 4/3 direction control valve (manual control) and explain the principle of working of the components of the system. [12]

7. (a) Differentiate between hydraulic and Electro-hydraulic systems.
   (b) What is the principle of servo controls systems used in hydraulic systems? [12]

8. Explain different methods used in trouble shooting of hydraulic systems and suggest the remedial measures. [12]

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