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06ME81

Eighth Semester B.E. Degree Examination, May/June 2010
Industrial Management

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, choosing atleast TWO questions from each part.***

PART - A

1 a. Explain the characteristics of 'scientific management'. Discuss further, any two schools of management thought. **(10 Marks)**

b. Explain different types of private sector organizations with respect to their formation , risk involved and advantages perceived. **(10 Marks)**

2 a. Explain the meaning of quality and quality improvement. Write about the objectives of 'quality control' and functions of 'quality control department' of an organization. **(10 Marks)**

b. Discuss in detail : i) quality costs ii) legal aspects of quality iii) quality philosophy iv) value engineering. **(10 Marks)**

3 a. What are 'control charts for variables'? Explain 'process out of control' and 'process in control' with respect to these charts. **(10 Marks)**

b. Explain these attribute charts :
i) Attribute charts for defective items (P – chart) ii) Attribute charts for number of defects per unit (C – chart). **(10 Marks)**

4 a. Describe the procedure for motion study and the principles of 'motion economy' in detail. **(10 Marks)**

b. Discuss in detail 'industrial hygiene', 'major job risks', 'safety regulations' and 'safe practices'. **(10 Marks)**

PART - B

5 a. Explain X and Y theory and Herzberg's motivation hygiene theory referred under 'motivation' theories in management. **(10 Marks)**

b. Discuss i) Maslow's theory of hierarchy of human needs ii) Incentives as 'motivators'. **(10 Marks)**

6 a. Explain the contribution of Elton Mayo to 'human relations management'. How are psychological factors important in building an organization? **(10 Marks)**

b. Discuss directing, changing and controlling the behaviour of employees in an organization. **(10 Marks)**

7 a. What is 'process planning'? What are the steps involved? Comment on the overall process management of an organization, citing examples and listing the factors involved. **(10 Marks)**

b. Explain customer involvement in an organisation's working. Can the customer influence the process management decisions? Comment. **(10 Marks)**

8 a. Discuss the primary areas covered by technology management and role of technology management in improving business performance. **(10 Marks)**

b. Explain these terms : i) R and D stages and technology fusion ii) Technology strategy and implementation guidelines. **(10 Marks)**

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06ME82

Eighth Semester B.E. Degree Examination, May/June 2010
Hydraulics and Pneumatics

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting at least TWO questions from each part.***

PART – A

1 a. What are the important considerations when selecting a pump for a particular application? Explain. **(06 Marks)**

b. A displacement type cylinder has a rod of 65 mm diameter and is powered by hand pump with a displacement of 5 ml per double stroke. The maximum operating pressure of the system is to be limited to 350 bar. Calculate :
   i) The number of double pumping strokes needed to extend cylinder rod by 50 mm.
   ii) The maximum load which could be raised, using this system. **(06 Marks)**

c. A hydraulic motor has a displacement of 130 cm^3, operates with a pressure of 105 bar and has a speed of 2000 rpm. If the actual flow rate consumed by the motor is 0.005 m^3/s and the actual torque delivered by the motor is 200 N-m, find :
   i) Volumetric efficiency
   ii) Mechanical efficiency
   iii) Overall efficiency
   iv) Power delivered by motor in kW. **(08 Marks)**

2 a. Explain with a neat sketch, the working of a balanced vane motor. **(06 Marks)**

b. Find the flow rate in Lpm that an axis piston pump delivers at 1200 rpm. The pump has 12, 15 mm diameter pistons arranged on an 120 mm piston circle diameter. The offset is set 10^o, and volumetric efficiency is 94%. **(06 Marks)**

c. A pump is operating at 75.7 Lpm and 12400 kPa. It has an overall efficiency of 0.83. It is driven by an electric motor with an efficiency of 0.87. How much power in kW is the electric motor drawing? **(08 Marks)**

3 a. Explain the working of a pressure reducing valve, with a neat sketch. **(06 Marks)**

b. Explain any four center configurations in three position, four way D.C. valve. **(06 Marks)**

c. Draw ISO symbolic representation of
   i) Pressure sequence valve
   ii) Pressure reducing valve
   iii) Pressure relief valve
   iv) Manually operated spring centered, 3 position four way valve. **(08 Marks)**

4 a. Draw the hydraulic circuit diagram of regenerative cylinder operation and obtain an expression for the regenerated speed of the actuator. **(10 Marks)**

b. Explain with a hydraulic circuit :
   i) The application of accumulator as an emergency power source
   ii) Meter – in and meter – out circuit. **(10 Marks)**

PART – B

5 a. What do you mean by beta ratio and beta efficiency? **(04 Marks)**

b. What are the probable causes for the following troubles in an hydraulic system?

i) Noisy pump

ii) No pressure

iii) Actuator failure

iv) Overheating of hydraulic fluid. **(08 Marks)**

c. Explain the four different types of fire resistant fluids in common use. **(08 Marks)**

6 a. Give complete classification of pneumatic actuators. **(06 Marks)**

b. Name three reasons for considering the use of pneumatics instead of hydraulics. **(06 Marks)**

c. Explain end cushion arrangement in double acting cylinder, with a neat sketch. **(08 Marks)**

7 a. How following functions are generated in pneumatic systems? Explain with a sketch.

i) AND

ii) OR

iii) NOT. **(15 Marks)**

b. Explain with a suitable circuit diagram, application of the memory valve. **(05 Marks)**

8 a. Explain the following as applied to electro-pneumatic controls.

i) Normally closed relay switch.

ii) Normally open relay switch. **(04 Marks)**

b. Sketch a circuit to control two pneumatic cylinders using limit switch for sequential motion. **(10 Marks)**

c. Explain air filter for pneumatic system, with a neat sketch. **(06 Marks)**

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