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06ME81

Eighth Semester B.E. Degree Examination, December 2012

Industrial Management

Time: 3 hrs. Max. Marks:100

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

PART – A

1 a. Discuss Henry Gantt and Charles Babbage's contributions to the evolution of management sciences. **(10 Marks)**

b. What are the objectives of public sector enterprises? Explain the role of public sector enterprises for developing countries. **(10 Marks)**

2 a. Explain the factors that affect the quality and discuss any one statistical method used to control the quality. **(06 Marks)**

b. What are the aims and principles of standardization? Explain the techniques of standardization. **(08 Marks)**

c. Explain the following:
i) Quality implementation ii)Quality improvement **(06 Marks)**

3 a. What are the statistical principles behind control charts? Differentiate between charts of attribution and charts of variables. **(10 Marks)**

b. Explain chance variations and assignable cause variation and briefly discuss the statistical quality control techniques used to control the quality. **(10 Marks)**

4 a. Discuss briefly the role of work study in increasing industrial productivity. **(10 Marks)**

b. List the different wage payment plans. Briefly describe any two giving salient features of each. **(10 Marks)**

PART – B

5 a. Distinguish between Hygiene factors and motivational factors of Hertzberg's theory. **(06 Marks)**

b. Briefly explain the following:
i) Immaturity theory ii) Goal oriented behaviour **(08 Marks)**

c. Explain briefly the Hawthorns studies. **(06 Marks)**

6 a. Explain the contribution of skinner to the behaviour science. **(10 Marks)**

b. Define controlling. Describe its objectives and importance in managing the business organization. **(06 Marks)**

c. Explain the importance of conceptual skills required by the successful manager. **(04 Marks)**

7 a. Describe the various stages involved in effective process decision making. **(10 Marks)**

b. Discuss: i) Vertical integration, ii) Resource flexibility. **(10 Marks)**

8 a. What are the primary areas covered by technology management? Explain. **(10 Marks)**

b. Discuss the creativity and explain how R and D organization making use of it successfully. **(10 Marks)**

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06ME82

Eighth Semester B.E. Degree Examination, December 2012
Hydraulics and Pneumatics

Time: 3 hrs. Max. Marks:100

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

PART – A

1 a. State Pascal's law. Explain with a neat sketch the basic hydraulic system with respect to forces and pressure in an enclosed tank. **(05 Marks)**

b. Explain the criteria to be considered in selecting a pump and list the difference between positive displacement pump and non positive displacement pump. **(05 Marks)**

c. Explain with a neat sketch, the working of vane pump and determine the volumetric displacement of a vane pump having a rotor diameter of 60mm, a cam ring diameter of 90mm and a vane width of 50mm, if the eccentricity is 10mm. **(10 Marks)**

2 a. Explain "end cushioning" provided in hydraulic cylinder with a neat sketch. **(05 Marks)**

b. Explain the mechanics of hydraulic cylinder loadings. **(05 Marks)**

c. Explain gear motor along with its symbol and determine i) Volumetric efficiency and ii) mechanical efficiency of a hydraulic motor having a displacement of 130 cm^3 and operates with a pressure of 105 bars and a speed of 2000 rpm. The actual flow consumed by the motor is 0.005 m^3/s and the actual torque delivered by the motor is 200 Nm. **(10 Marks)**

3 a. Write the symbolic representation of actuation system:
i) Push button ii) Spring iii) Lever iv) Solenoid v) Pressure line (pilot). **(05 Marks)**

b. With a neat sketch, explain the spool type DC valve (4 way, 3 position DCV) **(10 Marks)**

c. Explain the working of butterfly valve with a neat sketch. **(05 Marks)**

4 a. Explain with suitable circuits, how the single acting and double acting hydraulic cylinders are controlled. **(10 Marks)**

b. What are accumulators? Explain accumulator as hydraulic shock absorber, with a circuit. **(10 Marks)**

PART – B

5 a. Explain the desirable properties of hydraulic fluids. **(10 Marks)**

b. List the hydraulic system operating problems and any two respective probable causes that should be investigated during trouble shooting. **(10 Marks)**

6 a. Explain with a neat sketch, the construction features and working of a double acting pneumatic cylinder. **(10 Marks)**

b. Write a note on cylinder mountings. **(05 Marks)**

c. State the advantage of pneumatic system. **(05 Marks)**

7 a. Explain with neat sketches, different methods commonly employed for controlling the speed of pneumatic cylinder. **(10 Marks)**

b. Using two-way two position directional control valves, show how the following functions can be achieved in pneumatics:
i) AND ii) OR. **(10 Marks)**

8 a. Explain with a symbolic circuit, control of a simple single acting cylinder. **(10 Marks)**

b. Write short notes on any two:
i) Air filters ii) Air driers iii) Air lubrication unit
iv) Pressure regulator v) Accumulators (Gas type) **(10 Marks)**

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06ME844

Eighth Semester B.E. Degree Examination, December 2012
Automotive Engineering

Time: 3 hrs. Max. Marks:100

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

PART – A

1 a. Explain any five components of IC engine with sketch and specify the material used for its manufacturing. **(10 Marks)**

b. With a neat sketch, explain the overhead poppet valve mechanism. **(05 Marks)**

c. Explain water cooling system and state the function of thermostat valve in it. **(05 Marks)**

2 a. What is the necessity of a carburettor? Explain Carter carburettor with sketch. **(10 Marks)**

b. Explain any two fuel injectors with sketch. **(06 Marks)**

c. What do you mean by octane and cetane number? **(04 Marks)**

3 a. Give the objectives of supercharging and explain any two arrangements of supercharging. **(10 Marks)**

b. What is the need of turbocharging? Explain any one method of turbocharging giving its merits and demerits. **(10 Marks)**

4 a. Give the requirements of ignition system and explain magneto ignition system with sketch. **(10 Marks)**

b. What is the need of electronic ignition system? Explain TAC electronic ignition system. **(10 Marks)**

PART – B

5 a. Explain the working principle of clutch and with neat sketch explain centrifugal clutch. **(10 Marks)**

b. Why synchronization is necessary in gears? Explain any one gear box with sketch. **(06 Marks)**

c. Distinguish between fluid coupling and torque converter. **(04 Marks)**

6 a. Draw the neat sketch of general layout of power transmission and explain the working of each component briefly. **(10 Marks)**

b. What do you mean by steering geometry? Explain any four terms related with it, with sketch. **(10 Marks)**

7 a. What are the functions of suspension system? Explain air suspension system with sketch. **(10 Marks)**

b. Classify brakes. Explain hydraulic braking system with sketch. **(10 Marks)**

8 a. What are the sources of pollutants from gasoline engine? Explain. **(05 Marks)**

b. Write short note on any three:
   i) Exhaust gas recirculation
   ii) Treating the exhaust gases
   iii) Catalytic converter
   iv) Euro-I, II norms. **(15 Marks)**

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