[Total No. of Printed Pages:1] **CODE NO:- U-179**

FACULTY OF ENGINEERING

TE(Mechanical) Examination - *DEC - 2014*

Industrial Hydraulics & Pneumatics (Rev)

[Time: THREE *Hours*] **[Max. Marks: 80]**

"Please check whether you have got the right question paper."

N.B
i) *Solve any three questions from each section.*
ii) *Assume suitable data wherever necessary.*

SECTION A

Q 1	A	Draw a basic hydraulic circuit showing various components of a circuit explain the function & working of the different components.	(07)
	B	What are the different types of oil additives? Why are they used in hydraulic oils?	(06)
Q 2	A	What are the different standards used for the hydraulic & pneumatic symbols? What are the general rules for drawing the symbols.	(05)
	B	Draw symbols for the following. i) hydraulic& pneumatic oscillator ii) hydraulicsequence valve. iii) Accumulator iv) Hand lever operated 3 position 4 way direction control valve.	(08)
Q 3	A	Draw a next sketch and explain the construction and the working of a radial piston rotary pumps	(08)
	B	what is an actuator? With next sketch explain the reciprocatingactuator.	(05)
Q 4	A	With next sketch explain the construction and working of a lobe type compressor used in pneumatics.	(08)
	B	What is a reversible motor? State the applications of rotary motors in hydraulic systems used in the industry.	(05)
Q 5	A	Write short note on any three i) Essential properties of hydraulic fluids. ii) Air preparation for pneumatics system iii) Positive displacement pumps. iv) Laws garnering the hydraulic system. v) Types of oils used in hydraulics.	(14)

SECTION-B

Q 6	A	What are the controls used for speed control in the hydraulic and pneumatics systems? Explain meter in, meter ant & bleed off circuit.	(07)
	B	List the different accessories used in the hydraulic & pneumatic system. State the function of each of them.	(06)
Q 7		Draw a circuit for a hydraulic system used for opening and closing a door of a chamber using a double acting cylinder and other standard components used in hydraulic circuit. Explain its working.	(13)
Q 8		Draw a circuit for a pneumatic system used for rotating a drill in a drill rig. Using a reversible air motor, pressure regulator three position four way direction control valve, FRL unit. Explain the working in brief.	(13)
Q 9	A	What are the electrical controls used in the electro pneumatics and electro hydraulic systems. State the function of each of them.	(06)
	B	What is PLC. How is it used in the electro hydraulic& electro pneumatic systems.	(07)
Q 10		Write short notes on any three i) Seals used in hydraulic & pneumatic systems. ii) Filters used in hydraulic& pneumatic system. iii) Unloading valve. iv) Proximity switches. v) Advantages and limitations of the electro pneumatic & electro hydraulic system.	(14)