CBCS SCHEME

| IN. | USN | | | 15ME72 |
|--|------------------|-------|---|--------------|
| 2 | | 10 | | 0 |
| 1 | 1111 | 0 | Seventh Semester B.E. Degree Examination, Aug./Sept.202 | U |
| No. | 11/1 | 1 | Fluid Power Systems | |
| 1 | | A | 18 S | |
| 1 | Tin | ie: 2 | 3 hrs. Max. | Marks: 80 |
| W.O. | 1 | 20 | | |
| S. R.E. | - 37. 4 | N | tote: Answer any FIVE full questions, choosing ONE full question from each mo | odule. |
| k pages. will be treated as malpractice | Strong grandfull | | | |
| pra | | | Module-1 | |
| ma | 1 | a. | With the help of sketch explain the components of fluid power system. | (08 Marks) |
| las | | b. | Define Pascal's law and solve the following problem.[Refer Fig.Q1(b)] | |
| atec | | | F2.72. | |
| s. e tre | | | Fi-300N | |
| age II be | | | A2-600 mm ² | |
| nk p , wi | | | 31=15mm A1-300 mm ² S2=9 | |
| blan = 50, | | | | |
| ing +8= | | | | |
| naining , 42+8 | | | Fig.Q1(b) | |
| ren 1 eg, | | | Find F_2 and S_2 . | (08 Marks) |
| compulsorily draw diagonal cross lines on the remaining blank pages. , appeal to evaluator and /or equations written eg, $42+8=50$, will be | | | | |
| s on | | | OR | |
| line | 2 | a. | With the help of neat sketch explain | |
| oss quat | | | (i) Suction line filter (ii) Pressure line filter. | (06 Marks) |
| al cr | | b. | Write a note on the following: | |
| y pu | | | (i) O-Rings | (03 Marks) |
| diag or ar | | | (ii) Piston Cup Rings | (03 Marks) |
| aw | | | (iii) Heat Exchanger. | (04 Marks) |
| y dr eval | | | CMRIT LIBRAL | |
| oril to | _ | | Module-2 RANGALORE - 560 0 | |
| puls | 3 | a. | With the help of neat sketch explain Internal Gear Pump. | (08 Marks) |
| app | | b. | A hydraulic pump has displacement volume of 90 cm ³ and delivers 82 lpm at 10 | Machaniaal |
| rs, c ion, | | | 7 MPa. If the i/p torque delivered is 102 N-m. Find Volumetric efficiency, | |
| swe | | | efficiency, overall efficiency and theoretical torque required to operate the pump | . (08 Marks) |
| ans | | | OD | |
| your fide | 4 | - | With the help of neat sketch explain cushioning of hydraulic cylinders. | (08 Marks) |
| ng o | 4 | a. | A hydraulic motor has 100 cm ³ volumetric displacement. If it has a pressur | |
| oleti alin | | b. | 140 bars and receives oil from a 0.001 m ³ /s theoretical flow rate pump. Find | ic rating of |
| omp | | | | (08 Marks) |
| : 1. On completing your answers, c 2. Any revealing of identification. | | | (i) Speed (ii) Theoretical torque (iii) Theoretical power. | (UO MAIKS) |
| l. C 2. A | | | Module-3 | |
| : | 5 | а | With the help of neat sketch explain compound pressure relief valve. | (08 Marks) |
| | | | | |

b. With the help of neat circuit explain sequencing of cylinders in a hydraulic system.

(08 Marks)

| | | OR | |
|---|-----|--|------|
| | 6 | a. With the help of neat sketch explain 3 position 4 way direction control valve with close | d |
| | Ü | centre configuration. (08 Mark | s) |
| | | b. With the help of neat sketch explain application of counter balance valve in a hydraul | ic |
| | | system (Counter balance circuit) (08 Mark | s) |
| | | | |
| | | Module-4 What are the advantages, disadvantages and applications of pneumatic system. (07 Mark | · 6) |
| | 7 | a. What are the advantages, disadvantages and applications of pneumatic system. b. With the help of neat sketch explain FRL unit. (09 Mark) | |
| | | o. With the neip of heat sketch explain 1 led unit. | -, |
| | | OR | |
| | 8 | a. With the help of neat sketch explain pneumatic cylinder mounting methods. (08 Mark | |
| | | b. With the help of neat sketch explain quick exhaust valve. (08 Mark | (s) |
| | | NG 4.156 | |
| | 0 | a. With the help of neat circuit explain OR gate system. (08 Mark | (2) |
| | 9 | a. With the help of neat circuit explain OR gate system. (08 Mark b. With the help of neat circuit explain coordinated motion control system. (08 Mark | |
| | | o. With the holp of heat enough explain economics in the second explain | , |
| | | OR | |
| | 10 | a. Explain supply air and air exhaust throttling. (08 Mark | (s |
| | | b. With a neat sketch explain solenoid controlled pilot operated direction control valve. (08 Mark | (a) |
| | | (OD ITIAL) | 13) |
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