**B.E / B.Tech. PRACTICAL END SEMESTER EXAMINATIONS, APRIL / MAY 2019**

Fourth Semester

**CE8381 & STRENGTH OF MATERIALS AND FLUID MECHANICS & MACHINERY LABORATORY**

 (Regulations 2017)

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| **Aim/Principle/Apparatus required/Procedure** | **Tabulation/Circuit/Program/Drawing** | **Calculation & Results** | **Viva-Voce** | **Record** | **Total** |
| **25** | **25** | **30** | **10** | **10** | **100** |
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 Time : 3 Hours Answer any one Question Max. Marks 100

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| **1.** | (a) Conduct tension test on mild steel and draw the stress strain curve and mark the yield stress, ultimate stress and breaking stress. |
| (b) Determine the Co-efficient of discharge (Cd) of a Venturimeter for any two pipes of different diameter |
| **2.** | (a) Determine the Izod impact strength for the given specimens. |
| (b) Determine the friction factor when the fluid flows through a 15mm and 40 mm diameter of the pipes. |
| **3.** | (a) Find the Rockwell Hardness number for the given thin metal sheet  |
| (b) Determine the Co-efficient of discharge of an Orifice meter and Compare the experimental value with theoretical valu |
| **4.** | (a) Determine the Brinnel's Hardness number for the given specimens. |
|  | (b) Calibrate the flow measuring instrument Orificemeter and find the Co-efficient of discharge.  |
| **5.** | (a) Determine the Young's modulus of the material of the steel beam by conducting the deflection test. |
| (b) Determine the performance of the Francis turbine, specific speed of the pump and draw the constant head characteristic curves. |
| **6.** | (a) Conduct double shear strength on given MS rod. |
|  | (b) Determine the performance of the Pelton turbine, specific speed of the pump and draw the constant head Characteristic curves |
| **7.** | (a) Determine the modulus of rigidity of the given MS rod by conducting a torsion test  |
| (b) Perform an experiment to determine the flow in a pipe using Orificemeter and draw the calibration curves |
| **8.** | (a) Conduct test on quenched and tampered sample to determine the tampering improvement mechanical properties |
|  | (b) Determine the performance of Submersible pump and draw the characteristic curves |
| **9.** | (a) Determine the Charpy impact strength for the given specimens  |
| (b) Determine the performance of Gear pump and draw the characteristic curves |
| **10.** | (a) Conduct a microscopic examination of copper and aluminium plates and present it in the form of picture.  |
| (b) Determine the efficiency of the gear oil pump and draw characteristics curves |
| **11.** | (a) Carry out compression test on open coiled helical spring and determine its Stiffness and rigidity modulus. Also compute maximum energy stored in the spring.  |
| (b) Determine the friction factor when the fluid flows through any two different diameter of the pipes.  |

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