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

Fourth Semester

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

 (Regulations 2017)

Time : 3 Hours Answer any one Question Max. Marks 100

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| **Aim/Principle/Apparatus required/Procedure** | **Tabulation/Circuit/Program/Drawing** | **Calculation & Results** | **Viva-Voce** | **Record** | **Total** |
| **40** | **20** | **20** | **10** | **10** | **100** |

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| **1.** | (a) Conduct tension test on mild steel and determine yield stress, ultimate stress, actual stress and normal breaking stress. |
| (b) Determine the Co-efficient of discharge (Cd) of a Venturimeter in 25 mm diameter of the pipe. |
| **2.** | (a) Determine the Izod impact strength for the given specimens. |
| (b) Determine the flow in a pipe using Venturimeter and Compare the experimental value with theoretical value. |
| **3.** | (a) Determine the Brinnel's Hardness number for the given specimens. |
| (b) Determine the maximum efficiency and draw the performance characteristic curves by using Single Stage Centrifugal Pump. |
| **4.** | (a) Find the Rockwell Hardness number for the given thin metal sheet. |
|  | (b) Determine the maximum efficiency and draw the performance characteristic curves by using Reciprocating Pump |
| **5.** | (a) Conduct a tensile test on the given helical spring and determine the following (i) Shear modulus (ii) Stiffness of the spring |
| (b) Determine the discharge through a Rota meter  |
| **6.** | (a) Determine the Young's modulus of the material of the steel beam by conducting the deflection test.. |
|  |  (b) Determine the efficiency of Kaplan turbine and draw the performance characteristic curves |
| **7.** | (a) Conduct double shear strength on given MS rod.  |
| (b) Determine the coefficient of friction for 25cm of cast iron pipes. |
| **8.** | (a) Determine the modulus of rigidity of the given MS rod by conducting a torsion test |
|  | (b) Determine the Maximum efficiency of the Pelton wheel turbine.  |
| **9.** | (a) Determine the Charpy impact strength for the given specimens |
| (b) Determine the Efficiency of the Francis turbine and draw the following Characteristic curves (i) Speed Vs Output power (ii) Speed Vs Efficiency |
| **10.** | (a) Conduct a microscopic examination of Iron and aluminium plates and present it in the form of picture.  |
| (b) Determine the Co-efficient of discharge of an Orifice meter and Compare the experimental value with theoretical value |
| **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) Conduct experiment on gear pump and draw performance curves.  |

10.