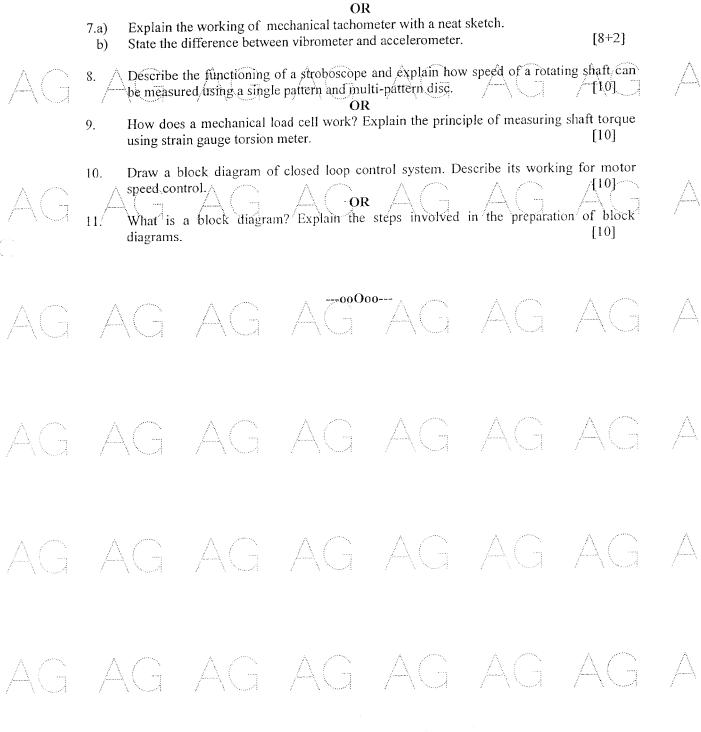
R13 Code No: 117EA JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD B. Tech IV Year I Semester Examinations, November/December - 2017 INSTRUMENTATION AND CONTROL SYSTEMS (Common to AME, ME) Max. Marks: 75 Time: 3 Hours Note: This question paper contains two parts A and B. Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. question carries 10 marks and may have a, b, c as sub questions. [2] Define Resolution and Threshold. 1.a) How errors are classified? Enumerate the various sources of errors. [3] b) State the difference between thermometer and thermistor. [2] Describe the constructional details and application of different types of Diaphragm c) d) pressure gauges. [2] State the principle of capacitive level indicator. e) [3] What is a turbine flow meter? f) [2] Define absolute humidity. g) [3] Explain strain gauge rosettes. h) [2] What is a servo mechanism? i) Differentiate Open and closed loop control systems with a suitable examples. [3] j) PART-B (50 Marks) Explain the following terms: 2. b) Resolution a) Range and span d) Sensitivity. c) Calibration -OR Sketch and explain with a block diagram generalized measurement system and its [10] elements with an example. State law of thermocouples. How are the laws useful in construction of thermocouple 4. [10] thermometers? OR Discuss the application areas in which low pressures are maintained. List out various indirect methods for measurement of low pressure and explain any two methods. [10] A Stroboscope projects 6000 flashes per minute on a disk mounted on the shaft of a machine. Find the speed of the machine if the disk appears stationary and has a single 6. [10]

image of 10 points.

OR 7.a) Explain the working of mechanical tachometer with a neat sketch. 1) State the difference between with rometer and accelerometer. [8+2]



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