

Registration No.

--	--	--	--	--	--	--	--	--	--

Total number of printed pages - 02

B.TECH
PECH5304

5th Semester Regular / Back Examination 2016 - 17
PROCESS INSTRUMENTATION
BRANCH : BIOTECH, CHEM

Time : 3 Hours

Max Marks : 70

Question Code :Y299

Answer Question No. 1 which is compulsory and any FIVE from the rest.
The figures in the right-hand margin indicate marks.
Answer all parts of a question at a place.

1. **Answer the following questions :** **2 x 10**
- (a) Define accuracy and precision.
 - (b) What is the range of sight glass?
 - (c) What are the different parts of differential flowmeter?
 - (d) What are the different fluids used in manometer?
 - (e) Write the advantages of bellows.
 - (f) What is the different periodic maintenance required for pressure measuring instruments?
 - (g) What is the difference between thermometer and pyrometer?
 - (h) What is thermistor?
 - (i) At what temperature, reading of centigrade and Fahrenheit scale becomes equal?
 - (j) What are the materials of construction of Bourdon tube pressure gauge?
2. (a) What are the different dynamic characteristics of an instrument? **04**
- (b) What are the functional elements of an instrument? **06**
3. (a) Describe in details about turbine flowmeter with a neat sketch. **05**
- (b) Describe the construction and working principle of bimetallic thermometer with a neat sketch. **05**
4. (a) Describe the construction, working principle, advantages, and disadvantages of radiation level detector with a neat sketch. **06**
- (b) Describe different types of orifice plate. **04**

- 210 210 210 210 210 210 210 210
5. What is variable area flowmeter? Describe the construction, working principle, advantages, and disadvantages of Rotameter with a neat sketch. **10**
- 210 210 210 210 210 210 210 210
6. What is a thermocouple? Name any two types of thermocouples. Describe the construction and working of thermocouple with a neat sketch. **10**
7. What is vacuum pressure? Describe the construction, working principle, and range of McLeod gauge with a neat sketch. **10**
- 210 210 210 210 210 210 210 210
8. Write short notes on any **TWO**: **5 x 2**
- (a) Emission spectroscopy
 - (b) Pitot tube
 - (c) Optical pyrometer
 - (d) Air bellow
- 210 210 210 210 210 210 210 210
-
- 210 210 210 210 210 210 210 210
- 210 210 210 210 210 210 210 210
- 210 210 210 210 210 210 210 210
- 210 210 210 210 210 210 210 210
- 210 210 210 210 210 210 210 210
- 210 210 210 210 210 210 210 210
- 210 210 210 210 210 210 210 210