



INTERNATIONAL CENTRE FOR APPLIED SCIENCES
MAHE, MANIPAL
B.Sc. (Applied Sciences) in Engg.
End – Semester Theory Examinations – May 2021
IV SEMESTER – METROLOGY AND MEASUREMENTS (IME244)
(BRANCH: MECHANICAL)

Time: 3 Hours

Date: 21 May 2021

Max. Marks: 50

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- ✓ Answer ALL questions.
 - ✓ Missing data, if any, may be suitably assumed
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- 1A** What are the advantages of having secondary transducer element along with the primary transducer element? (5)
- 1B** What should be the change in pressure for 0.1% change in resistance value of Bridgeman gauge using manganin element has a pressure coefficient of resistance of $2.3 \times 10^{-11} \text{ m}^2/\text{N}$? (5)
- 2A** Explain Thermocouple materials and its Construction. (5)
- 2B** What are the factors to be considered while deciding the arrangements of strain gauges on elastic members, for measuring various physical variables? Explain. (5)
- 3A** Explain the method of measuring force using a pneumatic load cell (5)
- 3B** Explain the Nominal size and basic dimensions of limits and fits. (5)
- 4A** Classify the Gauges and explain Metal limits for hole gauging (5)
- 4B** Explain the method of checking squareness by Engineer's square. (5)
- 5A** Differentiate between first, second, third, and fourth order irregularities. (5)
- 5B** Define the effective diameter of a screw thread. How do you find effective diameter of a screw thread using two-wire method? (5)
