Reg. No. | | | | | | | | | | |

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

SIXTH SEMESTER B.TECH. (ELECTRONICS & INSTRUMENTATION ENGG.)
ONLINE GRADE IMPROVEMENT/MAKE-UP EXAMINATIONS, AUGUST - 2021

Advanced Sensor Technolgy [ICE 4055](PE-II)

TIME: 2 HOURS 12-08-2021 **MAX.MARKS: 40**

Instructions to candidates: Answer any *FOUR FULL* questions.

Missing data may be suitably assumed.

1A. What is meant by sensor classification in accordance to energy domain? Also elaborate the concept of Modular Sensor.

1B. Discuss the method of sensing based on variations in numerical apertures of optical fibre. (6+4)

2A. List the constrains to be taken into consideration while measuring strain using optical sensors.

2B. Discuss the techniques used for detection of surface and dimensional flaws on a conductive structure. (5+5)

3A. With a neat diagram, explain the construction and working principle of RVDT. How can it be used for detection of gear tooth faults.

3B. Discuss the design technique of mine detector using flux gate sensor. (6+4)

4A. Describe measuring technique of acceleration using a servo/Force balance type accelerometer.

4B. Describe and Compare any two sensing technique for soil moisture measurement. (4+6)

5A. Deliberate the functioning of catalytic sensors.

5B. With the neat diagram, explain the working of diffusion controlled current limiting oxygen sensor. (5+5)

6A. Probe the velocity measuring technique by RF and DC squid.

6B. Give example of an application involving physical and chemical sensing. Briefly describe the functioning of sensors used for the purpose. (4+6)

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