DEPARTMENT OF CIVIL ENGINEERING

MINOR III :CVL864 STRUCTURAL HEALTH MONITORING
(2019-20)

Time allowed: 30 mins
Venue : Online

Date : 31 Aug 2020
Max marks : 15

NOTE: (a) This question paper contains one page only. (b) All questions are compulsory. (c) **Assume any data which you deem is necessary but not supplied. (d)** Draw neat and clear sketches wherever required.

Question 1.

Determine the electric permittivity of a PZT material if the slope of B of a patch of dimensions 10x10x0.3 mm made from that material measures $2.5x10^{-10}$ F/ Hz in 0-10 kHz frequency range.

(4 marks)

Question 2.

Explain why the EMI technique does not perform well in quantifying the severity of moderate to high level damages

(3 marks)

Question 3.

For a series kmc system identified by a PZT patch bonded to a structural system, the plot of "y versus f" crosses the frequency axis at 150 kHz. Determine the ratio of k/m.

(5 marks)

Question 5.

List any three advantages and limitations of the radiography technique?

(3 marks)