

**Note: Answer (five) questions only.**

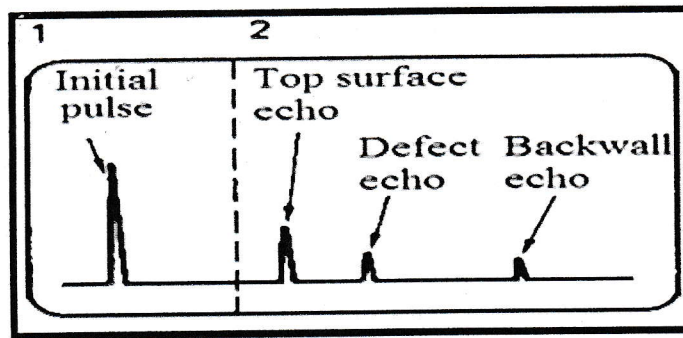
**Q(1-A):-** How can the inspector reduce the Un-sharpness of the image for a specimen inspected by X-Ray inspection? (9 marks)

**Q(1-B):-** Write about the removal of excess penetrant in liquid penetrant inspection. (8 marks)

**Q(1-C):-** In Gamma Ray inspection, there is a unit called a (Curie). Define the (Curie). (3 marks)

**Q(2):-** If the (Cathode Ray Tube – C.R.T) in an ultrasonic wave inspection for a product, appears the signals showed in the figure below:

Write all the information about such inspection with all details. (20 marks)



**Q(3-A):-** Explain the (Transmission technique) used in infrared inspection. (10 marks)

**Q(3-B):-** Suggest a method to magnetize the products below to inspect them by magnetic particles inspection:

1- Products produced by (forging or casting).

2- Crane Hook. (10 marks)

**Q(4-A):-** What are the differences between (Water) and a (Low surface tension) fluid used in pressure and leak inspection? Compare between them as they are used as a visualizing media. (10 marks)

**Q(4-B):-** What are the advantages of liquid penetrant Inspection? (10 marks)

**Q(5-A):-** What are the advantages of Knoop hardness measurement? (15 marks)

**Q(5-B):-** Define the transmitting transducer used in ultrasonic wave inspection. (5 marks)

**Q6:-** If the inspector tried to measure the hardness of a specimen by Rockwell hardness test. What are the requirements for measuring Rockwell hardness that he should provide before doing the test to achieve accurate results? (20 marks)