Answer all the questions (Total marks: 20)

**PART –A (5X1=5)**

1. __________ are guided waves that travel in layered material.

2. PWAS is an active sensor. State True or False.

3. In flat plates, ultrasonic guided waves travel as __________ and __________.

4. In pitch-catch method, flaws are detected by __________ and __________ due to damage.

5. Cracks are generally initiated in composites by __________ and __________.

**PART –B (5X3=15)**

1. List the drawbacks (if any) of deploying ultrasonic method?

2. Explain passive SHM.

3. List the advantages of PWAS?

4. Discuss the applications of embedded NDE, using pitch-catch method.

5. Express the relationship used to determine probability of crack detection by pitch-catch method.