

EDDY CURRENT TESTING COURSE – ASSIGNMENT - II

1. If resistance of coil is 6 ohms and inductive reactance is 8 ohms calculate the impedance.
2. Eddy Current Density at one standard depth of penetration is _____% of the surface.
3. Alloy composition will have influence on conductivity of the material. (T/F)
4. When length of conductor increases, resistance ____ (increases, decreases, remain same)
5. Eddy Currents can characterize grain size change after heat treatment. (T/F)
6. Aluminium is a _____ (dia, para, ferro) magnetic material.
7. Permeability value of Air is _____
8. Lift-off is considered a noise source and it is undesirable in defect detection. (T/F)
9. The distance where the edge effect is present is from approximately _____ to _____ times the diameter of the inspection coil in the case of encircling probes
10. Typical inspection frequencies in eddy current testing are in the range of _____ Hz– _____ MHz
11. _____ (high, low, medium) frequency is commonly used in the inspection of ferromagnetic materials
12. To detect smaller discontinuities low frequency is used to maximize eddy current flow (T/F).
13. Multi-frequency testing is also applied to cancel out undesired signals in order to improve the signal-to noise ratio. (T/F)
14. Pancake-type coil probes are not suitable for detecting _____ flaws as currents flow parallel to the surface
15. _____ (Absolute, Differential) probes consist of a single coil that generates eddy currents and senses changes from the eddy current field.
16. _____ (Absolute, Differential) coils do not detect gradual dimensional or composition variations of the test piece.
17. Differential encircling probes only detect discontinuities when a long crack that is parallel to the major axis. (T/F)
18. Eddy current techniques also take advantage of _____ variation to measure the coating thickness of non-conductive materials.
19. Formula for calculating fill factor for an internal coil is _____
20. For Good Coupling, Fill Factor should always be _____ and above.
21. Reduction in coil size _____ (increases, decreases) edge effect.
22. Lift off is applied for _____ (surface, encircling, bobbin) coils.
23. For ferromagnetic materials the problem of permeability variation is eliminated by _____
24. Frequency range generally suitable for Titanium is _____ Hz to _____ Hz
25. For eddy current testing of steels, the penetration is high due to permeability. (T/F)
26. _____ (Absolute, Differential) coils have the advantage of being able to detect very small discontinuities.
27. Coils can be and are arranged so that one coil induces the field and a second coil picks up the signal is called _____ coils
28. The transmission method needs a maximum thickness of the test material of 5 ~ 8 times the standard penetration depth to be able to receive the signal in the pick-up coil. (T/F)
29. In Shielded probes the former (core) is made of _____ material
30. _____ probe is suitable for finding laminar type flaws in plates.

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