2013

Interview Questions for Finite Element Analysis(FEA)

Face Interview with Confidence

Module 1

1. What is the finite element method (FEM)?

2. What is the history of the FEM?

3. What is the Method of Weighted Residuals, i.e., Galerkin's Method?

4. Why should one use finite elements?

5. Can the FEM handle a wide range of problems, i.e., solve general PDEs?

6. What is the advantage of the FEM over finite difference (FDM) and finite volume (FVM) methods?

7. Is there any connection between the FEM and the boundary element method (BEM)?

8. How difficult is it to write a FEM program?

9. Are there any recommended commercial FEM packages that are versatile in handling a wide range of problems?

10. What is meant by finite element analysis?

11. What is meant by finite element?

12. State the methods of engineering analysis.

13. Give examples for the finite element.

14. What is meant by node or Joint?

15. What do you mean by discretization?

16. What are the types of boundary conditions?

17. What are the three phases of finite element method ?

18. Explain force method and stiffness method?

19. What is structural and non-structural problem?

20. What are the methods are generally associated with the finite element analysis?

21. What is polynomial type of interpolation functions are mostly used in FEM?

22. Name the variational methods.

23. Name the weighted residual methods.

24. What is aspect ratio?

25. What is meant by post processing?

26. What is Rayleigh ritz method?

27. What does assemblage mean?

28. What is meant by DOF?

29. What is truss element?

30. List the two advantages of post processing?

31. If a displacement field in x direction is given by u=2x2+4y2+6xy.Determine the strain in x direction.

32. Differentiate between global and local axes.

33. What are h and p versions of finite element method?

34. During discretization, mention the places where it is necessary to place a node

35. What is the difference between static and dynamic analysis?

36. Name the four FEA Softwares?

37. Distinguish between potential energy function and potential energy functional.

38. What are the types of loading acting on the structure?

39. Define body force (f).

40. Define traction force (T)

41. What is point load (P)

42. What are the basic steps involved in the finite element modeling.

43. What is adaptivity, i.e., h-, p-, r-, and hp-adaptation?

44. What is discretization?

45. What is the classification of co-ordinates?

46. What is Global co-ordinates?

47. What is natural co-ordinates?

48. Define shape function.

49. What are the characteristics of shape function?

50. Why polynomials are generally used as shape function?

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For answers please send request to hr@aaplttrc.com