Quiz

1. What do we mean by fuel?
2. How can an oxidizer be defined?
3. Why gaseous fuels are preferred over liquid and solid fuels?
4. Is ideal gas law valid for combustion problems?
5. Does number of moles need to be conserved?
6. How to evaluate the heat of reaction?
7. How to find out the state of chemical equilibrium?
8. How to determine the value of k?
9. What happens during chemical reactions?
10. Why it happens?
11. Condition for dissociation of bonds?
12. What will happen if the pressure in the vessel is reduced?
13. Will explosion occurs?
14. If the tank is pressurized beyond 0.5 MPa?
15. How to relate concentrations?
16. Need for PEA?
17. How PEA is done?
18. How to proceed?
19. Why global kinetics?
20. Whether this reaction occurs in nature?
21. What do you mean by flame?
22. How to characterization of premixed flame?
23. How to get a parabolic velocity profile?
24. How to maintain a stationary flame?
25. Where the chemical reaction takes places?
26. What will happen above the luminous zone?
27. What is a dark zone?
28. Which is the zone of highest temperature in flame?
29. Which factor dictates the colors of the luminous zone?
30. What will happen with decrease in air mass fraction?
31. Is this an accurate method?
32. How to overcome this?
33. How to extinguish a flame?
34. What is flame quenching?
35. What is quenching diameter?
36. What will happen with increase in the gas velocity little bit above the burning velocity?
37. What will happen after exceeding certain threshold value?
38. With further increase in flow velocity?
39. How to measure (S_T)?

40 How does the fuel-oxidizer mixing take place?
41 Examples of diffusion flame?
42 Why candle flame has intense luminosity?
43 Which region is unaffected by mixing?
44 Will there be any fuel downstream the flame?
45 Why the diffusion flames are orange/yellow in color?
46 Where is the location of the soot formation?
47 Will all the soot particles get consumed?
48 What is a soot wing?
49 How to burn liquid fuel effectively?
50 What is the need for atomization?
51 Why solid fuels are preferred in certain applications?
52 What is the nature of combustion in naphthalene?
53 What is the difference between solid fuel and liquid fuel vaporization?
54 Is char combustion a homogenous or heterogeneous reaction?
55 What are the factors affecting the production of interior gases?
56 Is solid fuel combustion kinetically controlled or diffusion controlled?
57 Under what condition, solid fuel combustion will be kinetically controlled?
58 Under what condition, solid fuel combustion will be diffusion controlled?
59 Is complete combustion important for our environment? Why?
60 In what ways pollutants affect our environment?
61 Under what circumstances CO is formed?
62 How CO is formed at fuel lean condition?
63 Why CO is formed under fuel rich condition?
64 What are the ways to reduce CO emission?
65 How can we manage CO_2 emission?
66 What are the options available for CO_2 storage?
67 Boilers and furnaces are operated with excess air-why?
68 Is operating with excess air always advantageous?
69 How to achieve temperature reduction?
70 How the particulates are formed?
71 What are the sources of the particulate matter?
72 How to remove these particulate matters?