Uka Tarsadia University (Diwaliba Polytechnic)
Diploma in Mechanical Engineering
Assignment (Plant Maintenance and Safety– 020040406)

Unit-1 Fundamentals of maintenance engineering

1. Write advantages of preventive maintenance.
2. What is service life of a machine?
3. What is the purpose of studying maintenance engineering?
4. Explain why breakdown maintenance is suitable for small scale industries.
5. Explain planned maintenance with its advantages.
6. Give list of tools used in maintenance with their use.
7. Write major functions of maintenance department.
8. What is maintenance? Give example of maintenance.
9. Explain service life of equipment.
10. List out primary functions of maintenance department.
11. Discuss planned maintenance with example.
12. Explain about maintenance cost.
13. List out any five tools name that used for maintenance with their function.
14. Discuss about planned replacement in brief.
15. Define: Planned maintenance
16. What is preventive maintenance?
17. Write down the secondary function of maintenance department.
18. Explain corrective maintenance.
19. Short note on : service life of equipment & machines.
20. Explain any one method for selection of replacement.
21. Write down disadvantages of breakdown maintenance.
22. What is an aim of maintenance engineering?
23. List out types of tools used for maintenance.
24. List out the secondary function of maintenance department.
25. Explain breakdown maintenance.
26. Explain the service life of equipment.
27. Write down applications of tools used for maintenance.
28. Write short note on any replacement method.
29. Define service life of machine.
30. What are the responsibilities of maintenance department?
31. Write down disadvantages of breakdown maintenance.
32. Explain scheduled maintenance.
33. List out any five tool name that used for maintenance with function.
34. Explain any one method for selection of replacement.
35. Write short note on productive maintenance.
36. Define: Breakdown maintenance
37. List out the functions of maintenance department.
38. Write down factor affecting to the maintenance cost.
39. Explain preventive maintenance.
40. List out any five tool name with function that used for maintenance.
41. Explain any one of the factors for deciding replacement instead of maintenance.
42. Explain planned replacement in brief.

43. Define: Maintenance cost.
44. List out tools name used for maintenance.
45. Write short note on corrective maintenance.
46. Write down advantages of breakdown maintenance.
47. Explain any two secondary function of maintenance department.

Unit-2 Wear and Corrosion and their prevention

1. Mention any two wear reduction methods.
2. What should be the properties of an ideal lubricant?
3. Explain how chemicals affect the corrosion.
4. Explain stress and crevice corrosion in brief.
5. Explain how heat treatment of machine components prevent its corrosion.
6. Define mechanical wear. Give four examples of mechanical wear.
7. List out the causes of wear? How does the bad workmanship can cause wear?
8. Define: a) Mechanical wear b) Molecular wear.
9. What are lubricants? Give names of any two commonly used lubricants.
10. Write how chemicals and temperature difference affects the corrosion.
11. Write short note on biological corrosion.
12. List the reasons behind the corrosive wear.
13. Describe change in alignment due to wear.
14. Write any four types of corrosion and explain one of them.
15. What is Wear? Write down causes of wear.
16. What are the causes for corrosive wear?
17. Which steps are taken at the time of designing the different parts for prevention of corrosion?
18. Write down wear reduction method and explain any one.
19. Describe secondary method of corrosion prevention.
20. Explain the types of lubricants.
21. Define wear. How it can be reduced?
22. State causes of molecular wear.
23. Enlist lubrication properties and define viscosity.
24. Enlist lubrication method and explain gravity lubrication.
25. Write down the factors affecting for corrosion. Explain any two.
26. What are the causes of wear?
27. List out wear reduction method and describe any two in detail.
28. Define wear and corrosion.
29. What are the causes for mechanical wear?
30. What is Bio-Logical Corrosion?
31. Enlist types of corrosion. Explain Uniform corrosion
32. State and describe types of lubricants.
33. Explain the effects of wear.
34. Short note on : Splash lubrication method

Unit-3 Fault tracing

1. Discuss eight activities of fault tracing.
2. Draw a decision tree for the petrol engine fails to start.
3. Draw a decision tree to trace a fault when scooter does not start.
4. Lathe chuck stopped running abruptly. Draw a decision tree for the same.
5. Prepare decision tree for centrifugal pump not delivering water.
6. Draw a decision tree for low steam pressure in a boiler.
7. Explain how the decision tree is helpful in fault tracing.
8. Enlist the reasons of overheating of an I.C. engine.
9. Prepare a decision tree for hole becomes a oversized during drilling.
10. Prepare a decision tree to locate the fault for diesel engine is getting overheated.
11. Prepare a decision tree for locating the fault reduced petrol average of an engine.
12. Explain procedure to prepare a decision tree with example.
13. List different factors associated with the decision tree.
14. Discuss about types of faults in machine tools.
15. Discuss about general causes of faults in machine tools.
16. What is the important of fault tracing?
17. Discuss sequence of fault finding activities as a decision tree.
18. Draw decision tree for lathe chuck stops revolving.
19. Draw decision tree for electric motor becoming hot in short time.

Unit-4 Periodic and Preventive maintenance

1. Name the stages of repair cycle.
2. Describe in brief about VEIN analysis with its use.
3. Mention any two factors to be considered for periodic inspection.
4. What is the purpose of maintenance program?
5. What is the difference between preventive and periodic maintenance?
6. Discuss overhauling of gear pump.
7. Give list of factors to be considered for dismantling.
8. Enlist the different factors to be considered in periodic inspection.
9. What is VEIN analysis?
10. Enlist the four stages involved in repair cycle.
11. List the types of Faults arising in machine tool.
12. Write steps involved in preventive maintenance programme.
13. What is backlash measurement? Explain in brief.
14. Write the factors, which are involved in formulating programme and schedule.
15. Define repair cycle with example.
16. List methods of degreasing.
17. Discuss concept and need of periodic inspection.
18. Discuss repair complexity and repair cycle.
19. What precautions are necessary during dismantling?
20. Write short note on backlash measurement.
21. Write shot note on preventive maintenance.
22. Explain repair cycle of drill machine.
23. Define repair complexity with example.
24. Discuss overhauling of components.
25. List different factors to be considered in periodic inspection.

26. Write about different methods of degreasing.
27. Discuss advantages of preventive maintenance.
28. Explain preventive maintenance of Diesel set.
29. Discuss cleaning process of components.
30. Explain overhauling of pulley.
31. Discuss about repair cycle with example.
32. Explain thermal cleaning and abrasive cleaning process.
33. Discuss common troubles and remedies of electric motor.
34. Explain periodic maintenance of Air compressor.
35. Describe procedure of inspection of Guide ways.
36. List four aims of maintenance programme.
37. Differentiate preventive maintenance and periodic maintenance.
38. Discuss repair complexity of general purpose machines.
39. Explain periodic maintenance of Pumps.
40. Write repair cycle for a centre lathe working in two shifts and having time duration of 6 months between the two stages.
41. Explain the need of scheduling maintenance jobs.
42. State the rules for disassembly.
43. Discuss overhauling of cylindrical shaft.
44. Explain importance of repair cycle concept.
45. Write steps involved in preventive maintenance programme.
46. Write about maintenance of compressor.
47. Explain the periodic inspection of centre lathe.

Unit-5 Industrial safety

1. Define accident. Classify types of an accident.
2. List out the reasons for electric shock
3. What are the objectives of safety colour code?
4. List various type of hazards & explain mechanical hazard.
5. Explain fatal accident
6. List common causes of fire in industry.
7. Describe the salient points of factories act 1948 for health and safety.
8. List out unsafe act of accident.
9. What are the objectives of safety colour code?
10. What is industrial accident?
11. Explain mechanical hazard.
12. Classify types of accident. Explain minor accident.
13. Explain uses of yellow and red colour in industry.
14. How we can control the accident? Explain in brief.
15. Define fatal accident.
16. List out unsafe act of accident.
17. What are the common causes of fire in industry?
18. State remedies for preventing mechanical hazards.
19. Write down types of accident. Explain no injury accident.
20. State the factor to control the accident.
21. Explain uses of white and green colour in industry.
22. What is industrial accident? Classify types of an accident.
23. List out unsafe condition of accident.
24. What are the types of mechanical hazards?
25. Explain serious accident.

26. State remedies for preventing electrical hazards.
27. Explain uses of green and blue colour in industry.
28. State and explain types of fire in production industry.
29. Define industrial accident.
30. List out unsafe condition of accident.
31. Write down common causes of fire in industry.
32. What are the reason of electrical hazards?
33. Explain serious accident.
34. State and explain types of fire in production industry
35. How we can control the accident?

Unit-6 Recovery, Reconditioning and Retrofitting

1. How retrofitting reduces handling time?
2. What are the factors that affect the selection of recovery method?
3. What is need of retrofitting?
4. Explain the recovery method for damaged cylinder with enlarged liner.
5. Explain the assembly and commissioning as the features of reconditioning.
6. What are the applications of retrofitting? Explain in brief.
7. Write short note on metal spraying.
8. Write down the name of any four recovery methods used in industries.
9. Explain the 'testing' as a feature of reconditioning.
10. State the concept and need of retrofitting.
11. List out advantages and limitations of metal spraying recovery method.
12. What are the factors considered before selecting recovery methods? Explain any one.
13. Enlist any two recovery methods for warn-out shafts and journal bearing each.
14. How retrofitting can be used for reducing machining time?
15. Enlist the different recovery methods which are used in Industries.
16. Write disadvantages of metal spraying process.
17. Enlist the factors affecting the choice of recovery methods.
18. Write short note on complete dismantling of machine.
19. What is reconditioning? Explain in brief.
20. State the features and fundamental activities of reconditioning.
21. Explain in brief the recovery of following: (i) Worn out piston (ii) Worn out shaft.
22. List different recovery methods.
23. Define reconditioning and retrofitting.
24. How does reliability affect the selection of recovery method?
25. Write short note on recovery of worn out splined join.
26. Discuss about process of reconditioning.
27. Explain applications of retrofitting.
28. Explain scrapping recovery method.
29. With example define recovery.
30. State the four factors influencing the choice of recovery method.
31. Sketch the working principle of chromium plating.
32. Explain welding and surfacing recovery method.
33. Discuss advantages of metal spraying process.
34. Write about worn out journal bearing.
35. List advantages of reconditioning.
36. Define term service life of an equipment and how it is increased.
37. Briefly write about recovery of worn out journal bearing.

38. How we can reduce handling time by retrofitting?
39. List disadvantages of metal spraying method.
40. Explain appropriate recovery method for hole with worn threads.
41. Explain chromium plating recovery method.
42. List advantages of reconditioning.
43. Explain concept of retrofitting.
44. List selection criteria of recovery method.
45. Write disadvantages of metal spraying.
46. Discuss appropriate recovery method for Worn out key joint
47. Write about fundamental activities of reconditioning.
48. Explain process of reconditioning in brief.
49. List different recovery methods.
50. Name factors affecting the choice of recovery methods.
51. Write applications of retrofitting.
52. Sketch metal spraying process.
53. Discuss about features of reconditioning.
54. Explain recovery method for broken tooth of a large gear.