J S UNIVERSITY

ASSIGNMENT FOR B.TECH IN MECHANICAL 8TH SEM.

The Assignment will consist of two parts, A and B. Part A will have 5 short answer questions(40-60words) of 4 marks each. Part B will have 4 long answer questions of 5 marks each.

All questions are compulsory.

These Assignments should be completed and submitted in written form by the studentto his/her respective Faculty/ Examiners. Assignment Submission Dates are: june-2023

List Of Suggested Questions

The list of suggested questions is for students to practice. Although optional, we recommend that students solve these questions, as they will help them in preparing for exams as well as in clearing the important concepts of the subject.

List of Practical and suggested practical's

The list of practical's should be done by the students in their Lab Sessions. These are the basic practical's, which each student should be able to do himself independently. While the list of suggested practicals are optional, but it is recommended that students should perform those practical so as to have a thorough knowledge of the subject

Education Delivery Schedule (EDS)

As per University Semester scheme, the minimum contact hours of each paper has been Divided into two hours theory and practical class.
The faculty will maintain this attendance paper wise for his/her batch.

JS UNIVERSITY

8TH SEMESTER ASSIGNMENT

B TECH MECHANICAL ENGINEER

SUBJECT CODE	SUBJECT NAME
BME1	ADVANCED WELDING TECHNOLOGY
BME2	POWER PLANT ENGINEERING
BME3	NON-DESTRUCTIVE TESTING
BME4	NON-CONVENTIONAL ENERGY RESOURCES

ADVANCED WELDING TECHNOLOGY

PART A

1. What is Importance and Application of welding, classification ofwelding processes?
2. Basic characteristics of power sources for various arc weldingprocesses?
3. What is Mechanism and types of metal transfer in various arcwelding processed?
4. What is Manual Metal Arc Welding (MMAW), TIG, MIG, Plasma Arc?
5. Define Width of Heat Affected Zone (HAZ)?

PART B

1. Describe Micro & Macro structures in welding?
2. Types of welds & joints, Joint Design, Welding Symbols, welddefect?

POWER PLANT ENGINEERING

PART A

1. Define the Power and energy, sources of energy, review ofthermodynamic cycles related to power plants?
2. What is Effect of variable load on power plant operation, Selection ofpower plant units?
3. Explain General layout of steam power plant?
4. What is Operation and maintenance of steam power plant?
5. Describe Components of Diesel power plant, Performance of dieselpower plant?

PART B

1. Explain Layout of gas turbine power plant, Elements of gas turbinepower plants, Gas turbine fuels?
2. Principles of nuclear energy, Lay out of nuclear power plant?

NON-DESTRUCTIVE TESTING

PART A

1. Introduction Scope and advantages of NDT, Comparison of NDT with Destructive Testing?
2. Uses of visual inspection tests in detecting surface defects and theirinterpretation?
3. Advantages, limitations Interpretation of results, DC & AC magnetization, SkinEffect?
4. What is X-ray radiography: principle, equipment & methodology, applications?
5. Ultrasonic testing methods Introduction, Principle of operation, Piezoelectricity?

PART B

1. Applications in inspection of castings, forgings, Extruded steel parts, bars, pipes, rails and dimensions measurements?
2. What is Special NDT Techniques Eddy Current Inspection: Principle, Methods,Equipment for ECT, Techniques, Sensitivity, advanced ECT methods?

NON-CONVENTIONAL ENERGY RESOURCES

PART A

1. Introduction various non-conventional energy resources- Introduction, availability, classification, relative merits and demerits?
2. Focussing of collectors and their materials, applications and performance; solarthermal power plants?
3. What is the : Theory of solar cells?
4. What is the flat plate collectors and explain their materials and also applications?
5. Explain Ocean Thermal Energy Conversion (OTEC) with block diagram?
6. Explain the classification of rotors?

PART B

1. Explain Wave and Tidal Wave: Principle of working, performance and limitations?
2. Explain about Wind power and its sources and site selection?