MES Imp. Questions:

(1). Explain the emerging Trends and Technologies in :
a) Marine sector 2) Energy sector 3) Automotive sector.

(2). with suitable example, briefly explain the role of mechanical engineers in GDP.

(3). with a neat sketch explain 1) Nuclear power plant
2) Thermal power plant

(4). List advantages, drawbacks and Properties of FRC and MMC.

(5). Define shape memory alloy (SMA). Briefly explain any one type of SMA.

(6). Write briefly on solar energy photovoltaic technology and flate plate collector.

(7). State classification of Ferrous and non-ferrous metals.

(8). State the difference b/w renewable and non-renewable energy sources.

(9). Explain the properties of engg. materials.

(10). Mention the clasification of composite materials.

(11). with a neat sketch explain pv diagram the working of
a) Four stroke diesel engine
b) Four stroke petrol engine.

(12). State the desirable properties of an Ideal refrigerant.

(13). with a neat sketch explain the Vapour compn. refrigeration system.

(26). Briefly explain the classification of automobiles.

(27). List and explain the components of IC engines and their functions.

(30). With a neat sketches explain open and cross belt drives.

(31). Define fasteners. Briefly explain permanent and temporary fasteners.

(32). Briefly explain the automobile components.

(33). With suitable sketches explain different types of gears.

(34). With suitable sketches explain ~~a~~ types of belt drives.

(35). Differentiate btw permanent and temporary fasteners with suitable sketches.

(36). Explain with a neat sketch ↑explain gear terminology.

(37). ~~or~~ Explain briefly slip and creep in belt drive with suitable sketches.

(38). State the main elements of automated system.

(39). With a suitable graph explain the ↑different types of automation.

(40). Explain briefly machining centre with sketches.

(41). Explain briefly the ↑different components of CNC system.

(42). Sketch and explain different types of robot configurations.

(43). Explain various applications of robots.

(44). What is robot anatomy? Briefly explain different types of mechanical joints used in robotics (or) robot configuration.

(14). List and explain domestic and industrial application of refrigerator.

(15). with a neat sketch explain the working principle of Vapour absorption system.

(16). Differentiate b/w Vapour absorption and Vapour Compn. system.

(17). Explain: 1) principle of refrigeration 2) Refrigeration effect 3) Ton of refrigeration 4) COP

(18). with a neat sketches briefly explain the principle operations of Casting and sheet metal forming.

(19). with a neat sketch explain oxy-acetylene welding.

(20). Define machine tool - Explain briefly metal removal process.

(21). List modern manufacturing techniques involved in smart manufacturing and explain briefly.

(22). with a neat sketch explain Arc welding process.

(23). with suitable sketches explain different type of milling operations.

(24). with suitable sketch explain Lathe operations.

(25). with a neat sketches, briefly explain the principle operation of Rolling and forging.

(26). with a neat sketch explain TIG and MIG welding process.

(27). with a neat sketch explain different types of drilling operations.

45. List and explain the main components of an electric car.

46. With a neat sketch explain any one of the taper turning operations.

47. Write a short note on Industrial IOT.

48. Define brazing - Explain the working principle of brazing.

49. State the advantages and disadvantages of electric car.

50. List the characteristics, properties and applications of Tool steel.

51. What are cermets? What are the properties of cermets.

52. Problems on IC engines have sent in Group Practice it.