

Bachelor of Engineering
Seventh Semester Main Examination, Dec-2020
Work Study & Ergonomics [ME-701(C)]
Branch: ME

Time: 3:00 Hrs

Max Marks 70

Note : 1. Attempt any five questions out of nine.
2. All question carry equal marks.

- Q.1 (a) What is the purpose of work study and write down its objectives
(b) Explain the principles of motion economy and their application in work design.
- Q.2 (a) Explain micro motion study and memo motion study and their use in methods study.
(b) Write definition ,objectives and basic procedure of work measurement.
- Q.3 (a) What are the application of work measurement in industries.
(b) Explain design of work sampling study.
- Q.4 (a) Write short note on establishment of standard-time.
(b) Explain the application of work measurement in industries.
- Q.5 (a) Write Short note on Taylor, Merrick and Gantt incentive plans
(b) Explain elemental and non-elemental predetermined motion systems.
- Q.6 (a) Explain Methods Time Measurement.
(b) What are the types and characteristics of man-machine-system.
- Q.7 (a) What factors are responsible for effecting information reception and processing.
(b) Write the general principles of auditory with an example.
- Q.8 (a) What are various types of visual display.
(b) Write a short note on relative capabilities of human being and machine.

Bachelor of Engineering
Seventh Semester Main Examination, Dec-2020
Renewable Energy System [ME-702]
Branch: ME

Time: 3:00 Hrs

Max Marks 70

Note : 1. Attempt any five questions out of eight.
2. All question carry equal marks.

- Q.1 (a) State types of solar radiations. How radiation can be measured?
(b) Explain the working principle of any one instrument used for solar radiation measurement.
- Q.2 (a) Discuss power, torque and speed characteristics of wind energy conversion system.

- (b) Define biomass gasification and explain anyone type of biomass gasifier.
- Q.3 (a) State principle of “ocean wave energy” and “tidal energy” conversion.
(b) State classification and characteristics of fuel cells.
- Q.4 (a) Explain operation and maintenance of bio gas plant.
(b) Describe solar cooling and refrigeration in detail.
- Q.5 (a) Briefly compare types of hydro turbines.
(b) Write short note on hydrogen production and storage.
- Q.6 (a) Discuss types of hydro power plants and discuss its principles.
(b) Discuss various characteristics of wind how they can be measured.
- Q.7 (a) Describe working of wind energy conversion system with components.
(b) Discuss the Weibull, Rayleigh and normal distribution of wind.
- Q.8 (a) What is the use of pyrhelimeter and pyranometer?
(b) Describe the principle of Pyrhelimeter.

Enrollment No.....

Bachelor of Engineering
Seventh Semester Main Examination, Dec-2020
Mechanical Vibration & Noise Engineering [ME-703]
Branch: ME

Time: 3:00 Hrs

Max Marks 70

Note : 1. Attempt any five questions out of eight.
2. All question carry equal marks.

- Q.1 (a) What are beats? How do you connect several springs to increase the overall stiffness?
(b) What is the difference between deterministic and random vibration? Give two practical example of each. What are the common types of damping?
- Q.2 (a) Write short technical notes on "Industrial Noise Control" and "Auditory Effect of Noise"?
(b) What is expansion theorem? What is its importance? Explain the modal analysis procedure.
- Q.3 (a) What are the three elementary part of vibrating system? Define the number of degree of freedom of vibrating system.
(b) What are the practical applications of critical damping?
- Q.4 (a) Discuss in brief, various types of damping.
(b) What is magnification factor and how does it vary with frequency ratio?
- Q.5 (a) What are the different isolating material and what are their applications?

- (b) Define "Principal mode of vibration"
- Q.6 (a) What do you understand by "Semi definite system"?
(b) What is main disadvantage of dynamic vibration absorbers? What is a tuned vibration absorber?
- Q.7 What do you understand by under damped system, overdamped system and critically-damped system? Explain.
- Q.8 Write short note on following-
i. Natural frequency of vibrations
ii. Fundamental mode of vibrations
iii. Degree of freedom of vibration system

Enrollment No.....

Bachelor of Engineering
Seventh Semester Main Examination, Dec-2020
Operational Research & Supply Chain [ME-704]
Branch: ME

Time: 3:00 Hrs

Max Marks 70

Note : 1. Attempt any five questions out of eight.
2. All question carry equal marks.

- Q.1 (a) What is MRP? Explain MRP and its functions giving suitable flow diagram. How this MRP is different from MRP-II?
(b) Give short note on Hurwicz criterion for decision making under uncertainty.
- Q.2 (a) What are the essential characteristics of a linear programming model?
(b) Define slack and surplus variable as involved in the L.P.P.
- Q.3 (a) Define multiple server model in queuing system? Explain.
(b) Write short note on "Single Server Model" and "Multi Server Model".
- Q.4 (a) Define saddle point in a game? Explain.
(b) Explain VED analysis used in inventory control. Write advantages and limitations.
- Q.5 (a) Explain pure and mixed strategy in a game briefly.
(b) Explain degeneracy in transportation problem.
- Q.6 (a) Define just in time (JIT) Explain.
(b) Discuss evaluation of MRP to ERP to SCM.
- Q.7 (a) Explain bullwhip effect in SCM system.
(b) Define lead time variance and safety stock in inventory management. Explain.
- Q.8 (a) What are various types of inventory analysis control techniques? And list all of them and precisely explain.
(b) Give short note on application of heuristic and meta-heuristic.

Bachelor of Engineering
Seventh Semester Main Examination, Dec-2020
Automobile Engineering [ME-705]
Branch: ME

Time: 3:00 Hrs

Max Marks 70

Note : 1. Attempt any five questions out of eight.

2. All question carry equal marks.

- Q.1 Explain the working of Petrol engine with neat sketch?
- Q.2 Explain the working of carburetor?
- Q.3 What is battery rating and list commonly used battery rating?
- Q.4 What the function is of required and requirement of starting switches?
- Q.5 With neat sketch explain various parts of headlight assembly of a car?
- Q.6 Enlist various advantages of microprocessor based control system for automobile explain any one system?
- Q.7 With the help of line diagram explain construction and work of a viper and horn in an automobile?
- Q.8 Enlist the admission that is considered significant for measurement and performance study?