Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FIRST/SECOND SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018

Course Code: ME100

Course Name: BASICS OF MECHANICAL ENGINEERING

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any two questions, each carries 15 marks. Marks

1 a) Derive an expression to find the efficiency of an Otto cycle. (10)

b) Write notes on hybrid engines. (5)

2 a) Explain the working of a medium pressure medium capacity boiler. (10)

b) Differentiate between impulse and reaction turbines. (5)

3 a) Explain the working of centrifugal pump. (10)

b) State I law of thermodynamics for a closed system undergoing a cyclic process. (5)

PART B

Answer any two questions, each carries 15 marks.

4 a) Explain the working of domestic refrigerator. (10)

b) What are the industrial applications of air conditioning. (5)

5 Write short notes on: (15)
i) Psychrometric chart ii) Gear trains iii) Impact of refrigerants on environment

6 a) Explain the working of window air conditioner. (7)

b) With a neat sketch explain the working of single plate clutch. (8)

PART C

Answer any two questions, each carries 20 marks.

7 a) Name any five engineering materials and state their properties which make them suitable for their respective applications. (10)

b) Explain the process of forging stating different practical applications. (10)

8 a) List the operations that can be performed on a lathe. (10)

b) Write notes on: - (10)
i) Extrusion ii) CNC Machines

9 a) Explain the different die casting processes. (10)

b) Write notes on any five machining processes possible with milling machine. (10)

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