

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.

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|---|---|------|
| 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) |
