Printed Pages : 2

EAE-041

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : **148755**

Roll No. | | | | | | | | | | |

B. Tech.

(SEM. VII) (ODD SEM.) THEORY EXAMINATION, 2014-15

PROPULSION - II

Time : **3** Hours] [Total Marks : **100**

Note: Attempt all five questions. All questions carry equal marks.

1 Answer any **two** of the following : **2×10=20**

(a) Enumerate the Euler's turbine equation. What are its different forms ?

(b) What is the difference between centrifugal and axial flow compressors ?

(c) Write short notes on any two of the following :

(i) isothermal efficiency

(ii) overall efficiency

(iii) velocity triangles.

2 Answer any two of the following : **2×10=20**

(a) Describe the working of subsonic and supersonic combustion chambers.

(b) What are the various materials used for engine components ? Explain the significance of Magnesium alloys and Casling's in manufacturing.

(c) Write short notes on any two of the following :
  (i) Fuel Air Ratio
  (ii) Air intakes
  (iii) Polytropic efficiency.

3 Attempt any **two** of the following : **2×10=20**

(a) What is the effect of forward speed and altitude on performance of jet engines ?

(b) Discuss the theories of flame stabilisation, stability and ignitability limits.

(c) Write short notes on any two of the following :
  (i) Stall and surge
  (ii) Function of a diffuser
  (iii) Shaft and thrust horse powers.

4 Attempt any **two** of the following : **2×10=20**

(a) Describe the cycle analysis of jet engines.

(b) Describe the matching process of single spool compressor turbine system.

(c) Write short notes on the following :
  (i) Types of nozzls and their user
  (ii) Losses in turbine blades
  (iii) Surging.

5 Attempt any **two** of the following : **2×10=20**

(a) What are the basic principles of ram get testing ?

(b) What is the effect of forward speed on thrust horse powers ?

(c) Write short notes on any two of the following :
  (i) Cascade testing
  (ii) Gas turbine engine fuels
  (iii) Air intakes.