

Question Paper Code : 31004

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B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2010.

Seventh Semester

Aeronautical Engineering

AE 1009 — AERO ENGINE MAINTENANCE AND REPAIR

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the three principal types of connecting rod assemblies?
2. What are the factors limiting the compression ratio of an engine?
3. How is an oil filter inspected when it is removed from an engine during inspection?
4. What kind of check is carried out to ensure that crankshaft oil passages are free from sludge?
5. Differentiate between overhauled engine and rebuilt engine.
6. List the basic steps of the overhaul process of a piston engine.
7. State the different types of Jet propulsion engines.
8. Compare a gas-turbine igniter plug with a spark plug.
9. What is the purpose of bell mouth air inlet in gas-turbine engine?
10. Define "trouble shooting".

11. (a) Explain in detail about any two starters used for starting the piston engine with neat sketches. What are the advantages and disadvantages? (16)

Or

- (b) (i) What factors affect the performance of a piston engine? (6)
(ii) Describe the piston engine operating conditions at various attitudes. (10)

12. (a) Explain the various checks carried out on crankshaft during dimensional inspection in overhaul shop. (16)

Or

- (b) Describe in detail the compression testing of cylinders of piston engines. What is the need for such testing? (16)

13. (a) Discuss in depth the different methods and instruments for non destructive testing techniques.

Or

- (b) (i) Define 'aircraft maintenance'. (8)
(ii) Explain 'On - wing maintenance' in detail. (8)

14. (a) Write short notes on the following :

- (i) Borescope. (4)
(ii) Fiberscope. (4)
(iii) Electronic Imaging. (8)

Or

- (b) Explain the procedures followed during hot section inspection. (16)

15. (a) (i) List any eight components of a gas turbine. (8)
(ii) Describe the procedure of balancing of gas-turbine components. (8)

Or

- (b) Explain the steps involved in preservation and de-preservation procedures of gas-turbine engine. (16)