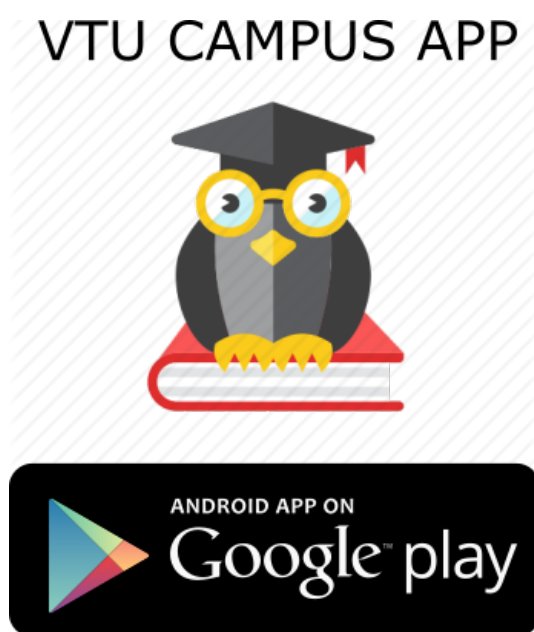


Aircraft Material Science VTU CBCS Question Paper Set 2018



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CBCS Scheme

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15AE45

Fourth Semester B.E. Degree Examination, June/July 2017 Aircraft Material Science

Time: 3 hrs.

Max. Marks: 80

Note: Answer FIVE full questions, choosing one full question from each module.

Module-1

- 1 a. Define the following : i) Normalizing ii) Quenching iii) Carburizing (04 Marks)
iv) Case hardening. (06 Marks)
b. Describe how yield point of a material can be determined. (06 Marks)
c. Explain the methods that are commonly used to detect minute surface. (06 Marks)

OR

- 2 a. Describe IADS with example. (08 Marks)
b. Illustrate a 3 – D phase diagram for classification of Ti – alloys. (08 Marks)

Module-2

- 3 a. Describe the following : i) Fibre reinforced composites ii) Laminar composites (06 Marks)
iii) Particulate composites. (04 Marks)
b. Why we use PM processing techniques to produce super alloy components? (06 Marks)
c. Explain CMM. (06 Marks)

OR

- 4 a. Why Metal – Matrix composites? (07 Marks)
b. Describe 3 types of matrixes produce 3 common types of composites. (09 Marks)

Module-3

- 5 a. Briefly explain the characteristics and typical application of plastic materials. (12 Marks)
b. Define Adhesive and Sealant. (04 Marks)

OR

- 6 a. Explain different types of non – scatterable glass. (08 Marks)
b. Discuss the following : i) Pyralin ii) Plastecele iii) Vinylite iv) Plexiglas and Lucite. (08 Marks)

Module-4

- 7 a. Explain the working of Ablator with neat diagram. (10 Marks)
b. Why do we need high fidelity models? (06 Marks)

OR

- 8 a. List various types of Aircraft wood and describe their properties and applications. (08 Marks)
b. Explain the purpose of Doping and commonly used Dopes. (08 Marks)

Module-5

- 9 a. Explain the operation of alodizing process. (08 Marks)
b. Describe the following : i) Chrome – Pickle treatment ii) Sealed chrome – Pickle treatment. (08 Marks)

OR

- 10 a. List the materials used for rockets and missiles. Explain the desirable properties. (10 Marks)
b. Describe the following : i) Strip – biaxial ii) Tubular test. (06 Marks)

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