

Code No: 07A42103

R07

SET-1

B.Tech II Year II Semester Examinations, April/May-2012
AEROSPACE MATERIALS AND COMPOSITES
(AERONAUTICAL ENGINEERING)

Time: 3 hours

Max. Marks: 80

Answer any five questions
All questions carry equal marks

- - -

- 1.a) What are the various tests to be performed to accept the parts for aircraft application? Explain about hardness testing.
- b) How are the test specimens prepared to conduct impact tests? [8+8]
2. Explain processing of fiber reinforced composites by any one method. [16]
- 3.a) What is a Composite? Give an account of major classes of Composite Materials.
- b) Discuss advantages, draw backs and applications of composite materials. [8+8]
- 4.a) What are the various factors to be considered in making components in open-mould process of composites?
- b) What are the different fibers used in the composites as reinforcement? [8+8]
- 5.a) What are the functions of a matrix in composite materials? What are the important properties of the matrix materials?
- b) The process of manufacturing a composite material depends on the matrices and reinforcements. Justify. [8+8]
- 6.a) Describe the angle ply laminates and anti-symmetric laminates.
- b) How is the finite element technique used in the analysis of stresses in the composites? [8+8]
- 7.a) What are the materials that can withstand high temperature? Mention the compositions and other properties?
- b) Draw the Iron-Carbon diagram and explain various salient points. [8+8]
8. Describe in detail the deposition techniques of Metal Matrix composites fabrication. [16]

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SET-2

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Time: 3 hours

Max. Marks: 80

Answer any five questions
All questions carry equal marks

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- 1.a) What is a Composite? Give an account of major classes of Composite Materials.
- b) Discuss advantages, draw backs and applications of composite materials. [8+8]
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- b) The process of manufacturing a composite material depends on the matrices and reinforcements. Justify. [8+8]
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SET-3

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AEROSPACE MATERIALS AND COMPOSITES
(AERONAUTICAL ENGINEERING)

Time: 3 hours

Max. Marks: 80

Answer any five questions
All questions carry equal marks

- - -

- 1.a) What are the functions of a matrix in composite materials? What are the important properties of the matrix materials?
- b) The process of manufacturing a composite material depends on the matrices and reinforcements. Justify. [8+8]
- 2.a) Describe the angle ply laminates and anti-symmetric laminates.
- b) How is the finite element technique used in the analysis of stresses in the composites? [8+8]
- 3.a) What are the materials that can withstand high temperature? Mention the compositions and other properties?
- b) Draw the Iron-Carbon diagram and explain various salient points. [8+8]
4. Describe in detail the deposition techniques of Metal Matrix composites fabrication. [16]
- 5.a) What are the various tests to be performed to accept the parts for aircraft application? Explain about hardness testing.
- b) How are the test specimens prepared to conduct impact tests? [8+8]
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- 7.a) What is a Composite? Give an account of major classes of Composite Materials.
- b) Discuss advantages, draw backs and applications of composite materials. [8+8]
- 8.a) What are the various factors to be considered in making components in open-mould process of composites?
- b) What are the different fibers used in the composites as reinforcement? [8+8]

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SET-4

B.Tech II Year II Semester Examinations, April/May-2012
AEROSPACE MATERIALS AND COMPOSITES
(AERONAUTICAL ENGINEERING)

Time: 3 hours

Max. Marks: 80

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- - -

- 1.a) What are the materials that can withstand high temperature? Mention the compositions and other properties?
b) Draw the Iron-Carbon diagram and explain various salient points. [8+8]
2. Describe in detail the deposition techniques of Metal Matrix composites fabrication. [16]
- 3.a) What are the various tests to be performed to accept the parts for aircraft application? Explain about hardness testing.
b) How are the test specimens prepared to conduct impact tests? [8+8]
4. Explain processing of fiber reinforced composites by any one method. [16]
- 5.a) What is a Composite? Give an account of major classes of Composite Materials.
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- 6.a) What are the various factors to be considered in making components in open-mould process of composites?
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b) The process of manufacturing a composite material depends on the matrices and reinforcements. Justify. [8+8]
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b) How is the finite element technique used in the analysis of stresses in the composites? [8+8]

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