

**R09**

Code: 9A21804

B.Tech IV Year II Semester (R09) Advanced Supplementary Examinations, July 2013

**HELICOPTER ENGINEERING**

(Aeronautical Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

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- 1 Describe the different controls of helicopter.
- 2 Describe the various VTOL aircrafts.
- 3 Describe the propulsion system of hovercraft on land and water.
- 4 Consider the possible types of aerodynamic interactions that might be found on a compound helicopter that has auxiliary wings. Explain under what flight conditions, if any adverse interactional effects between the main rotor and the wings might be expected. If adverse effects are encountered, do you think it would be possible to minimize or design out these adverse effects?
- 5 Differentiate between profile and induced powers of helicopter.
- 6 Describe the preliminary ideas on helicopter stability.
- 7 Describe jet rotors and compound helicopter.
- 8 Describe various performance curves of forward flight with effects of attitude.

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