

April 2019

*Time - Three hours
(Maximum Marks: 75)*

- [N.B: (1) Q.No. 8 in PART - A and Q.No. 16 in PART - B are compulsory. Answer any FOUR questions from the remaining in each PART - A and PART - B
(2) Answer division (a) or division (b) of each question in PART - C.
(3) Each question carries 2 marks in PART - A, 3 marks in Part - B and 10 marks in PART - C.]*

PART - A

1. What is a helicopter?
2. What are the different helicopter configurations?
3. What are the types of main structural components of a helicopter?
4. Mention few materials used in helicopter's main structure.
5. What is the purpose of clutch in a helicopter?
6. Mention few mechanical components in helicopter systems.
7. What is the purpose of helicopter engines?
8. Define towing.

PART - B

9. What is auto gyro?
10. Define air speed indicator.
11. What is a rotor? Give its use in a helicopter.
12. Write notes on anti-torque pedals.
13. Write notes on tail drive shaft.
14. What is the purpose of inspecting a helicopter?
15. What are the precautions to be followed while touring?
16. What are the purpose of skids in a helicopter?

[Turn over.....

PART - C

17. (a) Discuss on the various configurations of helicopter.
(Or)
(b) Give 10 glossary terms with definition used in helicopter technology.
18. (a) Discuss in detail on helicopter fuselage and its parts.
(Or)
(b) (i) Draw a rough sketch and mark the main structural components of helicopter and define any four.
(ii) What are material used in helicopters?
19. (a) Explain in detail on the purpose, construction on the main control systems of helicopters flight.
(Or)
(b) Write short notes on (i)Transmission system (ii)Swash plates (iii)Collective pitch control.
20. (a) (i) What are the types of engines used in helicopters?
(ii) Discuss in detail the construction and working of turbine engine.
(Or)
(b) What is a lubrication system? Discuss in detail its purpose and operation.
21. (a) (i) What are types of helicopter inspection?
(ii) Write notes on rigging and control setting.
(Or)
(b) (i) Write notes on refueling and defueling.
(ii) What are precautions to be followed during jacking, touring and bracking?
