

**April 2019**

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

- IN.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. Define volumetric efficiency.
2. What is compression ratio?
3. What are the uses of spark plugs?
4. State the difference between air cooled and liquid cooled engines.
5. What are cowlings?
6. What are feeders?
7. Define criteria's for engine inspection.
8. Why ground run-up is necessary?

PART – B

9. Write in brief on mechanical efficiency with formula.
10. Explain in short on pre-ignition.
11. What are the types of fuel injection systems? Describe any one.
12. Define the main function of magneto.
13. Explain high tension systems in short.
14. What are the uses of lifting points and drains?
15. Explain the principles of liquid cooling in engines.
16. Why engine monitoring is needed?

[Turn over.....

PART - C

17. (a) Explain in detail about the operating principle of diesel engine with diagram.

(Or)

- (b) (i) What are the factors affecting engine power? Discuss in detail.  
(ii) Write short notes on mixtures.

18. (a) Explain any two fuel injection systems their construction and operation.

(Or)

- (b) (i) Explain spark plugs.  
(ii) Write short notes on low tension systems.  
(iii) What are the types of magneto?

19. (a) Give detailed notes on construction and operation of alternate air systems.

(Or)

- (b) (i) Explain in detail air cooling systems in engines.  
(ii) What are the need for cooling systems?

20. (a) (i) How to configure firewalls?  
(ii) What are acoustic panels?  
(iii) Uses of hoses and pipes.

(Or)

- (b) How to install the following and give their uses?  
(i) Feeders, (ii) Engine mounts (iii) Vibration mounts (iv) Drains.

21. (a) (i) What the procedures for starting and ground run-up of an engine?  
(ii) How to interpret engine power output?

(Or)

- (b) How to inspect an engine? Give few points on criteria and tolerance.