Chettinad College of Engineering & Technology
Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai.

Department of Mechanical Engineering

ME 8493 – Thermal Engineering-1

Unit I - MCQ Bank

1. The air standard efficiency of an I.C. engine depends on
A. Fuel used
B. Speed of engine
C. Compression ratio
D. None of the mentioned

Answer: (C)

2. If the compression ratio in I.C. engine increases, then its thermal efficiency will
A. Increase
B. Decrease
C. Remain same
D. None of the mentioned

Answer: (A)

3. The thermal efficiency of petrol and gas engines is about

A. 15%

B. 30%

C. 50%

D. 70%

Answer: (B)

4. The thermal efficiency of diesel engines is about
A. 15%
B. 30%
C. 50%
D. 70%

Answer: (D)

5. In a Carnot cycle, the working medium receives heat at a temperature.
A. Lower
B. Higher
C. Constant
D. None of the mentioned

Answer: (B)

6. The adiabatic process of a Carnot cycle needs very motion to complete the adiabatic process.
A. Slow
B. Fast
C. Medium
D. None of the mentioned

Answer: (B)

7. The efficiency of an Otto cycle is increased by increasing
A. Pressure ratio
B. Compression ratio
C. Temperature ratio
D.None of the mentioned
Answer: (B)

8. The Otto cycle consists of
A. Two constant pressure processes and two constant volume processes
B. Two constant pressure and two constant entropy processes
C. Two constant volume processes and two constant entropy processes
D. None of the mentioned

Answer: (B)

9. The thermal efficiency of theoretical Otto cycle
A. Decreases with increase in compression ratio
B. Increases with decrease in compression ratio
C. Does not depends upon the pressure ratio
D. None of the mentioned

Answer: (C)

10. In Otto cycle, heat addition takes place at
A. Constant temperature
B. Constant pressure
C. Constant volume
D. None of the mentioned
Answer: (C)

11. The constant volume cycle is also called
A. Carnot cycle
B. Joule cycle
C. Diesel cycle
D. Otto cycle
Answer: (D)

12. A diesel engine has compression ratio from
A. 6 to 10
B. 10 to 15
C. 16 to 20
D. 25 to 40

Answer: (C)

13. In Diesel cycle, heat addition takes place at
A. Constant temperature
B. Constant pressure
C. Constant volume
D. None of the mentioned

Answer: (B)

14. The thermal efficiency of a diesel cycle having fixed compression ratio, with increase in cut-off ratio will
A. Increase
B. Decrease
C. Be independent
D. None of the mentioned

Answer: (B)

15. The pressure at the end of compression, in diesel engines, is approximately
A. 10 bar
B. 20 bar
C. 25 bar
D. 35 bar

Answer: (B)

16. If the temperature of intake air in I.C. engine is lowered, then its efficiency will
A. Increase
B. Decrease
C. Remain same
D. Increase up to a certain limit and then decrease

Answer: (A)

17. Dual Cycle is a combination of
A. Otto cycle and Diesel cycle
B. Otto cycle and Stirling cycle
C. Brayton cycle and steam cycle
D. None of the mentioned

Answer: (A)

18. Dual cycle is also known as
A. Diesel cycle
B. Joule cycle
C. Mixed cycle
D. None of the mentioned

Answer: (C)

19. In Dual cycle, heat rejection takes place
A. At constant volume
B. First at constant volume then at constant pressure
C. Constant pressure
D. None of the mentioned

Answer: (A)

20. In a standard dual air cycle, for a fixed amount of heat supplied and a fixed value of compression ratio, the mean effective pressure

A. Shall increase with increase in r_p and decreases in r_c

B. Shall increase with decrease in r_p and increases in r_c

C. Shall remain independent of r_p

D. Shall remain independent of r_c

Answer: (A)

21. For same compression ratio and for same heat added

A. Otto cycle is more efficient than Diesel Cycle

B. Diesel cycle is more efficient than Otto Cycle

C. Efficiency depends on other factors

D. None of the mentioned

Answer: (A)

22. The efficiency of Carnot cycle is maximum for

A. Gas engine

B. Petrol engine

C. Steam engine

D. Reversible Engine

Answer: (D)

23. For the same compression ratio, the efficiency of dual combustion cycle is?

A. Greater than otto cycle

B. Less than diesel cycle

C. Less than otto cycle and greater than diesel cycle

D. Greater than both otto and diesel cycle

Answer: (C)

24. Choose the correct statement from the following.

A. Diesel cycle is more efficient than Otto cycle for a given compression ratio

B. Otto cycle is more efficient than Diesel cycle for a given compression ratio

C. For a given compression ratio, both Otto and Diesel cycles have same efficiency

D. None of the mentioned

Answer: (B)

25. For constant maximum pressure and heat input, the air standard efficiency of the gas power cycle is in the order.

A. Diesel cycle, Dual cycle, Otto cycle

B. Otto cycle, Diesel cycle, Dual cycle

C. Dual cycle, Otto cycle, Diesel cycle

D. Diesel cycle, Otto cycle, Dual cycle

Answer: (A)