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reviewer4@nptel.iitm.ac.in ▼

Courses » IC Engines and Gas Turbines

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Unit 15 - Week 12: Components of Brayton Cycle Based Power Plant

Register for
Certification exam

Course outline

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Assignment 12

The due date for submitting this assignment has passed.

As per our records you have not submitted this **Due on 2019-04-24, 23:59 IST.**
assignment.

1) For supersonic flow through the diffuser **1 point**

- a) Pressure increases but velocity remains constant
- b) Pressure increases and velocity decreases
- c) Pressure decreases and velocity increases
- d) Pressure remains constant but velocity increases

No, the answer is incorrect.

Score: 0

Accepted Answers:

b) Pressure increases and velocity decreases

2) In the case of C-D Nozzle, the section of the nozzle where the cross-sectional area is minimum, is called as of the nozzle. **1 point**

- a) inlet
- b) outlet
- c) throat
- d) None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

c) throat

3) In general, nozzle used in engines for subsonic aircraft. **1 point**

- a) Convergent
- b) Divergent

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Funded by

Analysis of Brayton Cycle

Week 9:
Introduction to Various Aircraft Engine and Performance Parameters

Week 10:
Components of Brayton Cycle Based Power Plant

Week 11:
Components of Brayton Cycle Based Power Plant

Week 12:
Components of Brayton Cycle Based Power Plant

- Lec 1: Radial Flow Turbine, Solved Example of Free vortex Condition
- Lec 2: Nozzles and Diffusers: Introduction, Intake efficiency, Nozzle efficiency
- Quiz : Assignment 12

a) *Convergent*

4) Which one is showing a correct statement about the divergent duct? **1 point**

- a) A divergent section always works as a diffuser
- b) It always acts as a nozzle
- c) It can work as a nozzle or diffuser but it depends on their inlet Mach number
- d) None of them

No, the answer is incorrect.

Score: 0

Accepted Answers:

c) It can work as a nozzle or diffuser but it depends on their inlet Mach number

5) What is the main purpose of the intake used in civilian aircraft engines? **1 point**

- a) To increase turbine work output
- b) To increase the velocity inlet
- c) To reduce the shock on the turbine blade
- d) To reduce compressor work

No, the answer is incorrect.

Score: 0

Accepted Answers:

d) To reduce compressor work

6) When the inlet flow is supersonic through the divergent duct, the flow velocity along the length should be **1 point**

- a) Increased
- b) Decreased
- c) Both increased or decreased
- d) Can't say

No, the answer is incorrect.

Score: 0

Accepted Answers:

a) Increased

7) Ram efficiency is defined as **1 point**

- a) Real local temperature rise / Ideal temperature rise
- b) Actual static pressure rise / Ideal static pressure rise
- c) Real total pressure rise / Ideal total pressure rise
- d) Actual total temperature rise / Ideal total temperature rise

No, the answer is incorrect.

Score: 0

Accepted Answers:

c) Real total pressure rise / Ideal total pressure rise

8) When the inlet flow is supersonic through the convergent channel, the velocity of the outlet, **1 point** in comparison with the inlet flow, should be

- a) Increased
- b) Decreased
- c) Both increased or decreased

d) Can't comment

No, the answer is incorrect.

Score: 0

Accepted Answers:

b) Decreased

9) If the nozzle exit pressure of the flow is lower than the ambient pressure then the flow through the nozzle is said to be

1 point

- a) Under-expanded
- b) Over-expanded
- c) Critically expansion
- d) None of these



No, the answer is incorrect.

Score: 0

Accepted Answers:

b) Over-expanded

10) For subsonic flow through the nozzle

1 point

- a) Pressure increases and velocity decreases
- b) Pressure remains constant but velocity increases
- c) Pressure increases but velocity remains constant
- d) Pressure decreases and velocity increases

No, the answer is incorrect.

Score: 0

Accepted Answers:

d) Pressure decreases and velocity increases

11) Which one statement is correct regarding the Ramjet engine?

1 point

- a) Air enters from the intake into the ramjet engine with supersonic speed and supersonic combustion takes place into the combustion chamber
- b) The pressure ratio of the ramjet engine does not depend on its flight velocity
- c) Air enters from the intake into the ramjet engine with supersonic speed and subsonic combustion takes place
- d) Both a and b

No, the answer is incorrect.

Score: 0

Accepted Answers:

c) Air enters from the intake into the ramjet engine with supersonic speed and subsonic combustion takes place

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