

# SSC JE Mains 2022



**Mechanical Engineering**

**Most Expected  
Questions**

**SET 12**



# MECHANICAL ENGINEERING KA MAHAPACK

By Adda247

BILINGUAL

## SUBSCRIPTION FEATURES

All Live Classes	Yes
All Test Series	Yes
All Mock Video Solutions	Yes
All Revision Batches	Yes
All Recorded Videos	Yes
All eBooks	Yes
Personality Development	Yes
Spoken English	Yes

## CIVIL MAHA PACK

Yes  
Yes  
Yes  
Yes  
Yes  
Yes  
Yes  
Yes

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**RRB ALP**  
Target Batch (CBT1+CBT2)  
Trade-Mechanical  
9 AM to 10 PM

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**BATCH CHANAKYA**  
For Mechanical  
Complete Live Batch  
Start Feb 6, 2023  
10 AM to 11 PM



**JKSSB JE**  
Mechanical  
Selection Batch  
9 AM to 7 PM

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**Mission SSC JE 2023**  
Mechanical Engineering 2.0  
Foundation of your Success  
Start Jan 16, 2023  
9 AM to 11 PM



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**RRB JE Mechanical**  
Foundation Batch (CBT1+CBT2)  
Complete Live Batch  
9 AM to 10 PM

**Q** An air-standard Diesel cycle has a compression ratio of 14. The air conditions before compression are 1 bar and 27°C. The maximum temperature of the cycle is 2500°C.

**Determine the**

**(i) temperature and pressure at salient points of the cycle.**

**(ii) network output per unit mass of air.**

**(iii) thermal efficiency**

**15 marks**

**Q** A U-tube manometer is used to measure the pressure of water in a pipeline, which is in excess of atmospheric pressure. The right limb of the manometer contains mercury and is open to the atmosphere. The contact of water and mercury is in the left limb.

Calculate the pressure of water in the main line, if the difference in the level of mercury in the limbs of the U-tube is 10 cm and the free surface of mercury is in level with the center of the pipe. **15 marks**

**Q Give the differences between impulse turbine and reaction turbine.**

**15 Marks**

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S.No.	Impulse Turbine	Reaction Turbine
1	It consists of nozzles and moving blades	It consists of fixed blades which act as nozzles and moving blades
2	Steam is expanded completely in the nozzle. All the pressure energy is converted into kinetic energy	Steam is partially expanded in the fixed blades. Some amount of pressure energy is converted into kinetic energy
3	Pressure of steam is constant over the moving blades.	Pressure drop takes place in the moving blades.
4.	Because of high pressure drop in the nozzles, blade speed and steam speed are high.	Because of small pressure drop, blade speed and steam speed are less.
5.	Low Efficiency	High Efficiency
6.	Occupies less space per unit power	Occupies more space per unit power.

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