

## 23ASB201 AEROSPACE PROPULSION

### Question Bank

#### UNIT III - FUNDAMENTALS OF GAS TURBINE ENGINES

##### Part A – 2 Mark Questions (*Remembering, Understanding, and Applying Levels*)

1. What is the working principle of a gas turbine engine? (*Understanding*)
2. Define the gas turbine cycle. (*Remembering*)
3. List the major components of a gas turbine engine. (*Remembering*)
4. Differentiate between turbojet and turbofan engines. (*Analyzing*)
5. What are the advantages of a turboprop engine? (*Understanding*)
6. Define thrust and specific fuel consumption (SFC) in aircraft engines. (*Understanding*)
7. What are the methods of thrust augmentation? (*Applying*)
8. Explain the effect of bypass ratio on turbofan engine performance. (*Analyzing*)
9. What factors affect the efficiency of a gas turbine engine? (*Understanding*)
10. How does altitude affect the performance of an aircraft engine? (*Applying*)

##### Part B – 16 Mark Questions (*Applying, Analyzing, Evaluating, and Creating Levels*)

1. Explain the working principle of a gas turbine engine with a neat schematic diagram. (*Applying*)
2. Describe the thermodynamic cycle of a gas turbine engine and derive the efficiency equations. (*Analyzing*)
3. Compare turbojet, turbofan, and turboprop engines in terms of design, thrust, and efficiency. (*Evaluating*)
4. Explain the thrust equation and discuss the factors affecting thrust generation. (*Applying*)
5. Discuss the different methods of thrust augmentation and their applications. (*Analyzing*)
6. Illustrate the performance characteristics of gas turbine engines with thrust and efficiency curves. (*Applying*)
7. Analyze the effect of altitude and Mach number on engine performance. (*Evaluating*)

8. Discuss the significance of bypass ratio in turbofan engines and its impact on efficiency.  
*(Analyzing)*
9. Describe the working principle of afterburners and explain their role in thrust augmentation. *(Applying)*
10. Critically evaluate the future trends and advancements in gas turbine engine technology. *(Evaluating and Creating)*