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**School of Business**  
**Bachelor of Business Administration**  
**Mid Term Examination - Mar 2024**

**Duration : 90 Minutes**  
**Max Marks : 50**

**Sem VI - D1UB602T - Aviation Maintenance Management**

General Instructions

*Answer to the specific question asked*

*Draw neat, labelled diagrams wherever necessary*

*Approved data hand books are allowed subject to verification by the Invigilator*

- 1) Analyze the role of an aircraft engineer in managing design limitations such as technology, resources, and economics to create the best working system. K4 (4)
- 2) Explain the need for a well-designed maintenance program to ensure continued airworthiness of an aircraft. K5 (5)
- 3) Evaluate the role of forecasting in workload planning and monitoring of aircraft maintenance requirements. K5 (5)
- 4) Identify the differences in the implementation of A, B, C, and D checks in performing line and base maintenance of an aircraft K3 (6)
- 5) IndiGo and GoAir conducted visual inspections of 50 Pratt & Whitney engines powering their A320 neo aircraft following an airworthiness directive issued by the US regulator FAA. The directive aimed to check for possible engine fan hub damage, prompted by previous reports of such damage. Based on above answer the following: K4 (8)
  - 1 Why is it essential for airlines like IndiGo and GoAir to comply with airworthiness directives issued by regulatory authorities like the FAA? ( 4 marks)
  2. Explain the significance of visual inspections in ensuring aircraft safety and reliability. (4 marks)
- 6) Advancing Aircraft Maintenance and Repair in India MRO preparing for new challenges: The Aero MRO India A&D 2032 event emphasized the need for India to ramp up its MRO capabilities. Currently, only 15% of MRO activity for Indian airlines is conducted within the country, with the majority outsourced to foreign facilities. Despite India's status as the world's third-largest aircraft purchaser, the country lags behind in establishing robust MRO infrastructure. By investing in domestic MRO facilities, India can enhance its self-reliance in aircraft maintenance and repair, reduce operational costs for airlines, and create opportunities for local employment and economic growth. Questions for Student Response: K5 (10)
  1. Examine the implications of India's heavy reliance on outsourcing engine maintenance and repair services to other countries for the sustainability of the aviation sector. (5 marks)
  2. Evaluate the role of government intervention in incentivizing engine and aircraft manufacturers to establish MRO facilities in India. (5 marks)

## 7) Transforming Aviation Maintenance with Paperless Technology

Traditionally, AMM involves lot of paper-based documentation processes, leading to inefficiencies and challenges in record-keeping and accessibility. However, recent advancements in digital technology have paved the way for a transition towards paperless maintenance systems.

**Current Technological Advancements:** In recent years, the aviation industry has witnessed rapid advancements in paperless technology with digital tools such as electronic aircraft maintenance records (EAMR), e-signatures, and Radio Frequency Identification (RFID) emerging as key enablers of paperless maintenance. These technologies offer streamlined processes, cost reduction, and improved resource utilization, making them increasingly attractive to aviation stakeholders.

**Application to Maintenance:** The implementation of paperless technology in maintenance operations holds immense potential for enhancing efficiency and reducing downtime.

**Current Challenges:** Regulatory standards, stakeholder acceptance, and technological updates pose obstacles to widespread use. Additionally, the lack of clarity on regulatory bodies' positions regarding digital care records hinders progress in this area..

**Future Scope:** Looking ahead, the aviation industry holds immense potential for substantial enhancements through the adoption of paperless maintenance systems. By overcoming current challenges and establishing common regulatory standards, stakeholders can maximize the benefits of digitalization.

Based on the above passage answer the following:

1. Discuss how recent technological advancements in paperless maintenance systems contribute to efficiency and cost reduction in aviation maintenance operations?
2. Discuss the primary challenges affecting the widespread use of paperless maintenance systems in the aviation industry?
3. How do preventive maintenance strategies done by digital tools ultimately improve overall product quality?
4. What role do regulatory standards and stakeholders play in the paperless maintenance systems, and what strategies can be employed to overcome these challenges?