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<tr><td>Name:

Enrolment No:</td><td>UPES
UNIVERSITY OF TOMORROW</td></tr>
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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Term Examination, May 2024

Course: IT Applications in Aviation
Program: MBA AVM
Course Code: DSIT7007

Semester: II
Time : 03 hrs.
Max. Marks: 100

Instructions:

SET 2
SECTION A
10Qx2M=20Marks

S. No.		Marks	CO
Q 1	Attempt all questions.		
I.	Which IT application is crucial for managing and analyzing data related to air traffic flow and capacity management? a) Air Traffic Management (ATM) System b) Enterprise Asset Management (EAM) c) Enterprise Resource Planning (ERP) d) Customer Relationship Management (CRM)	2	CO1
II.	How does the Internet of Things (IoT) contribute to aviation IT? a) Optimizing airport gate allocation and parking stands b) Enhancing communication between aircraft and ground control systems c) Personalizing in-flight entertainment options for passengers d) Managing and analyzing data related to aircraft performance and maintenance	2	CO1
III.	Which IT application is used for managing and analyzing data related to aircraft performance and maintenance using advanced analytics? a) Predictive Maintenance System b) Enterprise Resource Planning (ERP) c) Customer Relationship Management (CRM) d) Maintenance Repair and Overhaul (MRO) Software	2	CO1
IV.	What is the primary advantage of implementing a Blockchain system in aviation maintenance records? a) Increased data security and integrity b) Accelerated aircraft turnaround times c) Streamlined passenger check-in processes d) Enhanced in-flight communication systems	2	CO1
V.	In what way does IoT technology enhance aircraft maintenance practices? a) By remotely controlling aircraft systems during flight b) Through real-time monitoring of engine performance and component health c) By automatically rerouting aircraft to avoid turbulent weather conditions d) Utilizing virtual reality simulations for pilot training programs	2	CO1
VI.	How does Cloud computing facilitate the implementation of predictive maintenance strategies in aviation? a) By providing secure storage for historical flight data b) Through real-time analysis of aircraft engine telemetry	2	CO1

	c) By enabling access to advanced simulation software for maintenance planning		
	d) Utilizing machine learning algorithms to forecast component failure probabilities		
VII.	What role does ERP play in optimizing airline crew scheduling and resource allocation? a) By integrating passenger booking systems with crew assignment databases b) Through automated analysis of historical flight data to predict crew requirements c) By facilitating communication between ground staff and flight crews in real-time d) Utilizing augmented reality technology for in-flight crew training programs	2	CO1
VIII.	Which IT application is utilized for managing aircraft maintenance schedules and records? a) Human Resource Management System (HRMS) b) Enterprise Asset Management (EAM) c) Customer Relationship Management (CRM) d) Document Management System (DMS)	2	CO1
IX.	What is the primary benefit of implementing data analytics in aviation IT? a) Enhancing passenger entertainment options b) Optimizing fuel consumption and route planning c) Managing employee payroll more efficiently d) Improving aircraft aesthetics	2	CO1
X.	What role does "Blockchain Technology" play in aviation IT? a) Managing aircraft navigation systems b) Securing and verifying transactions in ticketing and cargo operations c) Monitoring passenger movements within airports d) Analyzing weather patterns for flight planning	2	CO1

SECTION B
4Qx5M= 20 Marks

	Attempt **all** questions. Be very brief in answer		
Q2	Why IT applications are important in aviation?	5	CO2
Q3	What are the different categories or types of cloud computing ?	5	CO2
Q4	Does blockchain have any significance in Aviation	5	CO2
Q5	How AI impacts Aviation	5	CO2

SECTION-C
3Qx10M=30 Marks

	Attempt all the questions		
Q6	AeroTrack Aviation, an aircraft maintenance provider, wants to enhance its maintenance processes and reduce aircraft downtime. How can AeroTrack leverage IoT and cloud computing to achieve these objectives?	10	CO3
Q7	AeroLogistics, a cargo logistics company, wants to enhance the security and traceability of its cargo operations. How can AeroLogistics leverage blockchain technology and IoT to achieve these objectives?	10	CO3
Q8	AirTravel Inc., a major airline company, is looking to enhance its customer service and improve passenger satisfaction. Suggest an IT application and justify your answer	10	CO3

	SECTION-D **30 Marks**		
	Answer the following case based questions Wingspan Airlines, a rapidly growing regional carrier, has identified the need to differentiate itself in the highly competitive aviation market by offering exceptional passenger experiences. To achieve this goal, Wingspan Airlines has embarked on a journey to leverage innovative IT solutions to enhance every touchpoint of the passenger journey. IToperates a fleet of modern aircraft, connecting various cities within its regional network. However, the airline is facing challenges in delivering a seamless and personalized passenger experience due to outdated systems and fragmented processes. Additionally, Wingspan aims to improve operational efficiency and reduce costs while maintaining high safety standards. Wingspan Airlines decides to implement cutting-edge IT solutions across multiple aspects of its operations: **Mobile App Integration:** Wingspan develops a feature-rich mobile app that allows passengers to easily book flights, check-in online, access boarding passes, and receive real-time flight updates. The app also offers personalized recommendations for ancillary services and local attractions at the destination. **Biometric Identification:** To streamline the check-in process and enhance security, Wingspan introduces biometric identification technology at airports. Passengers can use facial recognition or fingerprint scanning for seamless and touchless authentication at various checkpoints, reducing waiting times and improving overall efficiency. **In-Flight Entertainment (IFE) System Upgrade:** Wingspan invests in upgrading its in-flight entertainment systems with state-of-the-art technology. Passengers can enjoy a wide selection of movies, TV shows, music, and games on high-definition screens, along with personalized content recommendations based on their preferences and previous viewing history. **Virtual Reality (VR) Cabin Experience:** Wingspan introduces VR headsets onboard select flights to offer passengers immersive virtual experiences during their journey. Passengers can explore destination highlights, take virtual tours of tourist attractions, or participate in interactive educational programs, enhancing their overall travel experience. Case Study Questions: **Each question carry 5 marks** 1. How can the mobile app developed by Wingspan Airlines enhance the passenger booking and travel experience? 2. Discuss the benefits of implementing biometric identification technology for passenger check-in at airports. 3. How does the upgrade of in-flight entertainment systems contribute to passenger satisfaction and loyalty for Wingspan Airlines? 4. Evaluate the potential impact of introducing VR cabin experiences on passenger engagement and brand perception for Wingspan Airlines. 5. What challenges might Wingspan Airlines face during the implementation of these innovative IT solutions, and how can they overcome them? 6. How can Wingspan Airlines ensure data security and privacy compliance while implementing biometric identification technology and mobile app features	**30 marks**	**CO3**