



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad-500043

AERONAUTICAL ENGINEERING

TUTORIAL QUESTION BANK

Course Title	AVIONICS AND INSTRUMENTATION				
Course Code	AAE525				
Programme	B. Tech				
Semester	VIII	AE			
Course Type	Elective				
Regulation	IARE - R16				
Course Structure	Theory			Practical	
	Lectures	Tutorials	Credits	Laboratory	Credits
	3	-	3	-	-
Chief Coordinator	Mrs. M. Mary Thraza, Assistant Professor				
Course Faculty	Mrs. M. Mary Thraza, Assistant Professor				

COURSE OBJECTIVES:

The course should enable the students to:	
I	Impart the knowledge in various types of Avionics systems, its components & its applications in aerospace industries.
II	Offer a rigorous avionics technology, Review of the basic system integration and the different type of avionics architectures.
III	Provide necessary knowledge to study the aircraft instrumentation sensors, displays and different type of sensors.
IV	Give knowledge about military aircraft adaptation, avionics and mission system interface and gives the difference between civilian aircraft avionics and military aircraft avionics.

COURSE OUTCOMES (COs):

CO 1	Describing aviation technology, bus systems and few basics of aircraft systems
CO 2	Differentiating aircraft instrumentation - sensors and displays systems
CO 3	Understanding communication systems and navigation aids
CO 4	Estimation of military aircraft adaptation mission system interface, navigation and flight management
CO 5	Acquiring knowledge on airborne radar, astronics-avionics for spacecraft

COURSE LEARNING OUTCOMES (CLOs):

AAE525.01	Understanding the evolution of electronics and microelectronics in avionics technology
AAE525.02	Interpret the need of bus systems in avionics.
AAE525.03	Constructing the integrating modular avionics architectures, shelf systems and avionics packaging systems
AAE525.04	Understanding the concept of sensing system in aircraft instrumentation system.

AAE525.05	Development of different types of indication systems.
AAE525.06	Constructing different display systems in instrumentation system.
AAE525.07	Developing the concept of different communication system.
AAE525.08	Understanding different navigation systems, global and local area augmentation
AAE525.09	Understanding flight management system control and display unit
AAE525.10	Measuring of avionic and mission system interface, navigation and flight management
AAE525.11	Arranging airborne early warning, ground surveillance
AAE525.12	Labeling electro-optics and the infra-red optics
AAE525.13	Differentiate Types of radar- pulse Doppler
AAE525.14	Determination Attitude and control of spacecraft, magnetometers
AAE525.15	Construction of command and telemetry in aviation technology

TUTORIAL QUESTION BANK

UNIT - I				
AVIONICS TECHNOLOGY				
Part - A (Short Answer Questions)				
S.NO	QUESTIONS	Blooms Taxonomy Level	Course Outcomes	Course Learning Outcomes
1	State a short note on Integrated Navigation system?	Remember	CO1	AAE525.01
2	Define Accelerometer? list out the types of accelerometers?	Remember	CO1	AAE525.06
3	Demonstrate briefly about the concept of gyroscope? Why it is used in aviation industry?	Understand	CO1	AAE525.01
4	State a short note on Evolution of Electronics in Aviation Industry?	Knowledge	CO1	AAE525.06
5	List out the required navigation performance (RNP). for various phases of flight condition	Remember	CO1	AAE525.04
6	Discuss the working principle of operation of a Ring laser gyroscope?	Understand	CO1	AAE525.01
7	Write short note on integrated modular avionics system with a suitable example	Remember	CO1	AAE525.02
8	Interpret Precision for Area navigation (RNAV) is a method of instrument flight rules (IFR) navigation	Understand	CO1	AAE525.02
9	Illustrate Protected Instrument Landing System is a system that works by sending radio waves downrange from the runway end	Understand	CO1	AAE525.05
10	Determine the Requirements of avionics equipment and display systems in cockpit systems?	Knowledge	CO1	AAE525.10
Part - B (Long Answer Questions)				
1	Elucidate briefly on Evolution of Electronics in Aviation Industry and its actual history began with the invention of vacuum?	Understand	CO1	AAE525.01
2	Validate the importance of Electronics in Aviation Industry in current synerios with few suitable examples?	Understand	CO1	AAE525.04
3	Demonstrate Briefly the need of Data Bus? Give an note on working of ARINC 629?	Understand	CO1	AAE525.04
4	Discuss the nature of microelectronic devices and explain the microprocessor?	Understand	CO1	AAE525.09
5	Draw the Topology of MIL-STD-1553B and ARINC629 Data buses?	Understand	CO1	AAE525.05
6	Infer the development in memory devices (Storage) used?	Understand	CO1	AAE525.04
7	Express the need of LRU's in Avionics Packaging?	Understand	CO1	AAE525.05
8	Demonstrate Line Replacing Units in avionics packaging?	Understand	CO1	AAE525.03
9	Summarize A short note on Architecture of Integrated Modular Avionics?	Understand	CO1	AAE525.10
10	Write A short note on Fiber Optics which is thin strands of very pure glass about the diameter of a human hair.	Understand	CO1	AAE525.10
11	Describe in brief about. a) Doppler Radar. b) Weather Radar.	Remember	CO1	AAE525.06
12	Elucidate the integration of a typical Attitude Detection Indicator to the Flight display devices?	Understand	CO1	AAE525.01
13	Elaborate about Electrical and optical data bus is a communication system that transfers data between components systems.	Understand	CO1	AAE525.05
14	List out different data buses presently using in aircrafts with their applications.	Understand	CO1	AAE525.05
15	Describe the architecture of A-529 data bus with neat sketch indicating word format and its applications	Understand	CO1	AAE525.01
16	What is DataBus? Justify its need for an avionics system in aviation industry	Understand	CO1	AAE525.05
17	Describe the typical driver for avionics design avionics design capability ranges from direct hands-on development and/or testing of hardware	Understand	CO1	AAE525.01
18	Elaborate the integration of a typical Attitude Detection Indicator to the Flight display.	Understand	CO1	AAE525.05
19	Demonstrate the primary flight display about A320 with neat sketches	Understand	CO1	AAE525.01

20	Interpret in detail about Airworthiness regulations Airworthiness standards are special technical standards and minimum safety standards established to ensure the implementation of civil aircraft airworthiness	Understand	CO1	AAE525.05
Part - C (Analytical Questions)				
1	Justify the development of Electronics in Aviation Industry?	Understand	CO1	AAE525.04
2	Discuss the nature of microelectronic device with suitable sketch? And use of this microelectronics in aviation field?	Understand	CO1	AAE525.05
3	Illustrate the memory devices used in aviation?	Understand	CO1	AAE525.06
4	Demonstrate the topology of A429 bus system?	Remember	CO1	AAE525.05
5	Develop the encoding data and word format?	Understand	CO1	AAE525.04
6	Extend the typical data transaction of MIL-STD 1553B?	Understand	CO1	AAE525.04
7	Distinguish between the A429 and A629 data bus?	Remember	CO1	AAE525.04
8	Demonstrate Line Replacing Units in avionics packaging?	Understand	CO1	AAE525.05
9	Construct the Integrated Modular Avionics are real-time computer network airborne systems?	Understand	CO1	AAE525.04
10	Discuss why the fiber optics buses are not used in aviation if the statement is false why it is used I aviation	Remember	CO1	AAE525.05
UNIT-II				
AIRCRAFT INSTRUMENTATION - SENSORS AND DISPLAYS				
Part – A (Short Answer Questions)				
1	State Flight Control Systems	Understand	CO2	AAE525.05
2	Infer the drawbacks of Microwave landing system	Knowledge	CO2	AAE525.05
3	Summarize Head Up Display in cockpit?	Remember	CO2	AAE525.04
4	Interpret short note on military cockpit.	Remember	CO2	AAE525.04
5	Discuss the principle of operation of a Ring laser gyroscope	Knowledge	CO2	AAE525.05
6	List out the advantages of Microwave landing system	Understand	CO2	AAE525.04
7	Interpret Equation for measurement of airspeed in compressible supersonic flow?	Remember	CO2	AAE525.04
8	Enumerate Airborne Warning and Control System	Knowledge	CO2	AAE525.15
9	Define Satellite Navigation	Understand	CO2	AAE525.15
10	Extend a short note on Data recorders.	Remember	CO2	AAE525.06
Part - B (Long Answer Questions)				
1	What are Sensors? Summarize in brief the six basic T instruments used in the Airplane?	Understand	CO2	AAE525.02
2	Describe the air data sensing techniques used in aircraft with the suitable sketch?	Knowledge	CO2	AAE525.01
3	Demonstrate the working of Magnetic Sensors microelectromechanical systems (MEMS) device for detecting and measuring magnetic fields (Magnetometer) With a neat sketch?	Understand	CO2	AAE525.15
4	Categorize the various instrument used via inertial sensing? Briefly discuss Direction Gyro?	Knowledge	CO2	AAE525.15
5	Draw the neat sketches of Air Data Probes and Explain the working of it?	Understand	CO2	AAE525.15
6	Describe the inertial sensing using Position Gyroscopes with neat sketch?	Knowledge	CO2	AAE525.15
7	Express Air sensing system in altimeter with the help of neat sketches	Understand	CO2	AAE525.06
8	Discuss the principle and operation of altimeter?	Understand	CO2	AAE525.15
9	Design the neat sketches of Air sensing system in altimeter?	Understand	CO2	AAE525.15
10	Describe the working principle of AMLCD (active-matrix liquid-crystal display) is a type of flat-panel display?	Understand	CO2	AAE525.15
11	Elaborate the basic principle of VHF signal propagation.	Knowledge	CO2	AAE525.15
12	Infer the modulation? Discuss any two types of modulation in a communication system.	Understand	CO2	AAE525.15
13	Discuss the basic principle of VHF communication and draw the block diagram of VHF Transmitter.	Knowledge	CO2	AAE525.15
14	Demonstrate about Audio integrating system-AIS (INTERCOM) of a civil aircraft.	Understand	CO2	AAE525.15
15	Describe the principle of high frequency communication with suitable diagrams	Knowledge	CO2	AAE525.15

16	Explain the working principles of powered flight control systems.	Knowledge	CO2	AAE525.15
17	What is a data Link? How it supplements communication system in HF & VHF.	Understand	CO2	AAE525.15
18	Illustrate the facility of SELCAL which is SELCAL is a selective-calling radio system that can alert an aircraft's crew?	Knowledge	CO2	AAE525.15
19	Discuss the categorization of radio frequency indicating frequency band, name, and frequency.	Understand	CO2	AAE525.15
20	Elaborate the Transponder Landing System (TLS) with the required sketches	Knowledge	CO2	AAE525.15
Part - C (Analytical Questions)				
1	Describe the requirement of sensors in avionics and discuss air data sensor in detail with required examples?	Understand	CO2	AAE525.01
2	Discuss the pilot static tube which is the measure of pressure of fluid?	Remember	CO2	AAE525.11
3	Extend the demonstration the instruments which are working of Magnetic Sensors with one of its application	Knowledge	CO2	AAE525.09
4	What is inertial sensing and explain the uses of inertial sensing which is reliable systems Inertial Sensing develops, manufactures and supplies gyroscopic	Remember	CO2	AAE525.01
5	Construct the neat sketches of Air Data Probes and Explain the working of it?	Understand	CO2	AAE525.15
6	Demonstrate the Position Gyroscopes can detect a change in its geographic position with neat sketch?	Understand	CO2	AAE525.04
7	Explain the Magnetic Heading Reference System? With applications of present aviation industry?	Knowledge	CO2	AAE525.15
8	Discuss the air stream direction and detector (ADD) Instrument for correlating air speed, angle of attack?	Understand	CO2	AAE525.06
9	Draw the neat sketches of Air sensing system? And discuss present trending scenarios?	Remember	CO2	AAE525.15
10	Describe the working principle of AMLCD active-matrix liquid-crystal display (AMLCD) is a type of flat-panel display, the only viable technology?	Knowledge	CO2	AAE525.06
UNIT -III				
COMMUNICATION AND NAVIGATION AIDS				
Part – A (Short Answer Questions)				
1	Define are ring laser gyros?	Knowledge	CO3	AAE525.09
2	Write a short note on Global Navigational satellite systems?	Knowledge	CO3	AAE525.14
3	Infer the optical gyroscopes?	Understand	CO3	AAE525.01
4	What are angular momentum gyros?	Knowledge	CO3	AAE525.14
5	State Global Positioning Systems.	Knowledge	CO3	AAE525.01
6	Categorize the different types of GPS receivers.	Understand	CO3	AAE525.09
7	List out Long Range Navigation systems?	Knowledge	CO3	AAE525.11
8	Identify the limitations of Autopilot system?	Knowledge	CO3	AAE525.11
9	Enlist the advantages of Autopilot system.	Understand	CO3	AAE525.15
10	Write a short note on Autopilot speed control?	Knowledge	CO3	AAE525.06
Part – B (Long Answer Questions)				
1	Summarize briefly about distance measuring equipment DME and Very High Frequency (VHF) Omni-Directional Range (VOR)?	Understand	CO3	AAE525.01
2	Discuss the advantages of distance measuring equipment over the Very High Frequency (VHF) Omni-Directional Range?	Remember	CO3	AAE525.05
3	Demonstrate the various radio frequency spectrum used in aviation industry?	Understand	CO3	AAE525.01
4	Highlight the various radio frequency spectrum used in aviation and show the letter designation for various frequencies?	Knowledge	CO3	AAE525.15
5	Interpret the satellite navigation system (also known as a satnav system) is a system of satellites, usually managed by one company or country that provides geo-spatial positioning?	Understand	CO3	AAE525.15
6	Classify the different types of navigation techniques used in avionics and explain inertial navigation system?	Understand	CO3	AAE525.15
7	Justify the traffic collision avoidance system? What is the difference between TCAS 1 and TCAS 2	Knowledge	CO3	AAE525.15
8	Discuss the uses of traffic collision avoidance system in avionics system? And what ids RA in avionics?	Understand	CO3	AAE525.15

9	Explain the Microwave Landing system microwave landing system (MLS) is an all-weather, precision radio guidance system?	Understand	CO3	AAE525.14
10	Illustrate the working of Oceanic crossings in inertial sensors and global positioning systems	Knowledge	CO3	AAE525.15
11	Demonstrate the satellite navigation in the global positioning system is a space-based radio-positioning and time-transfer system?	Knowledge	CO3	AAE525.15
12	Write in detail about the basic navigation parameters in inertial sensors and global positioning systems.	Understand	CO3	AAE525.15
13	What do you understand by stable platform Systems and explain in detail.	Understand	CO3	AAE525.08
14	Discus the strap down systems in inertial sensors and global positioning systems	Understand	CO3	AAE525.14
15	Classify the differential GPS (global positioning systems) in site of signals and measurements	Knowledge	CO3	AAE525.15
16	Differentiate the short notes on the Class A and Class B of GPS (global positioning systems) receivers.	Understand	CO3	AAE525.14
17	Describe short notes on Flight Data Recorders and explain in detail.	Knowledge	CO3	AAE525.15
18	List out the different Autopilot modes in inertial sensors and global positioning systems.	Understand	CO3	AAE525.08
19	Interpret the Radio Navigation in inertial sensors and global positioning systems.	Understand	CO3	AAE525.14
Part - C (Analytical Questions)				
1	Describe the principal of distance measuring equipments is a radio navigation technology that measures the slant range (distance) between an aircraft and a ground station by timing the propagation?	Understand	CO3	AAE525.06
2	Discuss the advantages of Distance measuring equipment (DME) is a radio navigation technology that measures the slant range over the VOR very High Frequency (VHF) Omni-Directional Range	Understand	CO3	AAE525.09
3	Explain the letter designation for Higher Frequency system is the ITU designation for the range of radio frequency electromagnetic waves	Knowledge	CO3	AAE525.14
4	Illustrate the amplitude modulation system is a modulation technique used in electronic communication, most commonly for transmitting information via a radio carrier wave of frequencies?	Understand	CO3	AAE525.09
5	Discuss the principal and operation of the SATCOM series was a family of communications satellites originally developed and operated?	Understand	CO3	AAE525.07
6	Enlist the different types of navigation techniques used in avionics and explain inertial navigation system in detail?	Knowledge	CO3	AAE525.01
7	Describe the air traffic control - a transponder is an electronic device that produces a response?	Understand	CO3	AAE525.01
8	Discuss the traffic collision avoidance system or traffic alert and collision avoidance system architecture in avionics system?	Understand	CO3	AAE525.01
9	Summarize the automatic direction finder is a marine or aircraft radio-navigation instrument that automatically and continuously displays	Understand	CO3	AAE525.07
10	Demonstrate bin the Instrument Landing system Instrument Landing System (ILS) is a highly accurate radio signal navigation aid consisting of two antennas	Understand	CO3	AAE525.01
MODULE –IV				
MILITARY AIRCRAFT ADAPTATION				
Part – A (Short Answer Questions)				
1	What do you understand by Differential GPS?	Understand	CO4	AAE525.12
2	State Protected instrument Landing System	Knowledge	CO4	AAE525.12
3	List out automatic direction finders?	Knowledge	CO4	AAE525.12
4	Infer Inertial Navigation System?	Understand	CO4	AAE525.12
5	What are marker systems?	Knowledge	CO4	AAE525.15
6	Infer Radio Detection And Ranging?	Knowledge	CO4	AAE525.13
7	State Satellite Communication system?	Knowledge	CO4	AAE525.14
8	Differentiate the localizer and glide slope?	Knowledge	CO4	AAE525.01

9	Infer Local Area Augmentation System?	Knowledge	CO4	AAE525.03
10	Simplify short notes on Distance Measuring Equipment?	Knowledge	CO4	AAE525.13
Part – B (Long Answer Questions)				
1	Describe the instrument Landing System (ILS) approach in detail with the help of neat sketch?	Understand	CO4	AAE525.14
2	Discuss how the instrument Landing System (ILS) approach is use full in bad weather condition?	Knowledge	CO4	AAE525.14
3	Explore difference between the radio navigation system and Inertial navigation system which is the mostly used system in aviation?	Remember	CO4	AAE525.15
5	Infer the GPS over relay programme and discuss the various categories?	Knowledge	CO4	AAE525.03
6	Summarize the Flight management System fundamental component of a modern airliner's avionics	Understand	CO4	AAE525.10
7	Enlist the Typical Flight management System (FMS) in avionics and importance of it with the required neat sketch?	Understand	CO4	AAE525.10
8	Illustrate the Flight control requirements flight control subsystem design requirements	Understand	CO4	AAE525.10
9	Develop four dimensional navigation and explain performance base navigation system in detail?	Understand	CO4	AAE525.13
10	Explain in detail about the 'Flight Control Reference Planes'.	Understand	CO4	AAE525.06
11	Illustrate the Ground Proximity Warning system (GPW) in avionic system.	Understand	CO4	AAE525.12
12	Discuss in detail about Reversible Flight Control System in aircraft systems?	Knowledge	CO4	AAE525.15
13	Explain the Airbus model of FBW (FLY BY WIRE) system in detail.	Knowledge	CO4	AAE525.12
14	Interpret in detail about the Irreversible Flight Control system in navigation, ranging and landing systems?	Understand	CO4	AAE525.12
15	Discuss how the flight control and monitoring are fulfilled?	Knowledge	CO4	AAE525.15
16	Illustrate in detail about Terrain Awareness and Warning System (TAWS)	Understand	CO4	AAE525.12
17	Differentiate the objectives of Air Traffic Management in navigation, ranging and landing systems?	Knowledge	CO4	AAE525.15
18	Demonstrate about the elements of improvement in Navigation systems.		CO4	
19	Justify in detail about RNAV s a method of instrument flight rules (IFR) navigation standards in navigation system.	Knowledge	CO4	AAE525.12
20	Explain in detail about the 'Flight Control Reference Planes'.	Understand	CO4	AAE525.15
Part - C (Analytical Questions)				
1	Describe the beacon structure system is an intentionally conspicuous device designed to attract attention to a specific Visual beacons range from small, single-pile structures to large lighthouses	Understand	CO4	AAE525.05
2	Illustrate how the instrument landing system approach is use full in bad weather condition?	Remember	CO4	AAE525.15
3	Validate n the inertial navigation system in aviation field with the example of air traffic control?	Understand	CO4	AAE525.14
4	Enumerate the Air Data Inertial Reference Unit (ADIRU) is a key component of the integrated Air Data Inertial Reference System ?	Understand	CO4	AAE525.14
5	Explain the air data and inertial reference system of Boeing B777?	Understand	CO4	AAE525.14
6	Summarize the differential Global Positioning System used in navigation in aviation technology?	Understand	CO4	AAE525.09
7	Illustrate the Flight Management system is a fundamental component of a modern airliner's avionics?	Understand	CO4	AAE525.10
8	Express the Typical Flight management System (FMS) which consist of a control display unit (CDU), flight management or navigation computer, global position sensor, and a data loader with neat sketch?	Understand	CO4	AAE525.10
9	Enlist the Flight control requirements evolution of aircraft, control and display systems, and mission requirements are imposing new problems in control.	Understand	CO4	AAE525.15
10	Construct a mode of our dimensional navigation and performance base navigation?	Understand	CO4	AAE525.15

MODULE - V

AIRBORNE RADAR, ASTRONICS - AVIONICS FOR SPACECRAFT

Part - A (Short Answer Questions)

1	Elaborate SLAR (Sideways looking Aperture Radar)	Remember	CO5	AAE525.01
2	State weather radar systems.	Knowledge	CO5	AAE525.15
3	What do you understand by Digital Signal Processing?	Knowledge	CO5	AAE525.01
4	How Satellite landing guidance system is useful in aviation field?	Knowledge	CO5	AAE525.01
5	Write a short note on Multi-function control and a display unit.	Understand	CO5	AAE525.15
6	State Mode S transponders.	Knowledge	CO5	AAE525.15
7	Infer predictive wind shear warning systems.	Knowledge	CO5	AAE525.01
8	Enlist ECM (Electronic Counter Measures)	Understand	CO5	AAE525.01
9	Define Magnetic Anomaly Detector.	Knowledge	CO5	AAE525.01
10	Infer Flight Management systems	Knowledge	CO5	AAE525.01

Part - B (Long Answer Questions)

1	Demonstrate the flight Control References of Frames?	Understand	CO5	AAE525.01
2	Illustrate the aircraft axis movement in relation with aircraft attitude?	Understand	CO5	AAE525.15
3	Summarize how the flight control and monitoring are fulfilled?	Understand	CO5	AAE525.06
4	Discuss the Primary Flight Computer system used in Boeing?	Understand	CO5	AAE525.05
5	State Fly-By-Wire system? Explain Boeing implementation?	Understand	CO5	AAE525.05
6	Compare the Integrated auto-pilot systems with the neat sketch in aviation field?	Understand	CO5	AAE525.01
7	Demonstrate the Airbus model of fly-by-Wire (FBW) is the generally accepted term for those flight control systems?	Understand	CO5	AAE525.01
8	Extend the Airbus 380 model of fly-by-Wire (FBW) is the generally accepted term for those flight control systems?	Knowledge	CO5	AAE525.06
9	Discuss the Airbus model of fly-by-Wire system?	Understand	CO5	AAE525.14
10	Explain the black box is a device, system or object which can be viewed in terms of its inputs and outputs?	Understand	CO5	AAE525.14
11	Illustrate Primary power distribution in aircraft systems With the help of neat sketches?	Understand	CO5	AAE525.01
12	Discuss the needs of air-to-air refueling for military aircraft in surveillance systems and auto-flight systems.	Knowledge	CO5	AAE525.06
13	Summarize Electronic Warfare support measures in surveillance systems and auto-flight systems.	Understand	CO5	AAE525.01
14	Categorize the navigation requirement between civil and military aviation.	Knowledge	CO5	AAE525.06
15	Describe about instrument Landing System coupled autopilot control system in aircraft landing system.	Understand	CO5	AAE525.14
16	Illustrate the Integrated Modular Avionics in surveillance systems and auto-flight systems.	Understand	CO5	AAE525.05
17	Explain the functioning of Pulse-Doppler RADAR in surveillance systems and auto-flight systems.	Understand	CO5	AAE525.05
18	Demonstrate the principle and operation of Star Trackers in surveillance systems.	Knowledge	CO5	AAE525.06
19	Differentiate the different types of sensors used in spacecraft and aircraft.	Understand	CO5	AAE525.05
20	Explain the functioning of Forward-Looking RADAR and differentiate with Pulse-Doppler RADAR.	Knowledge	CO5	AAE525.06

Part - C (Analytical Questions)

1	Explore the flight Control system which is a conventional fixed-wing aircraft flight control system consists of flight control surfaces, the respective cockpit controls, connecting linkages	Knowledge	CO5	AAE525.15
2	Infer the aircraft axis in relation with aircraft attitude where the attitude indicator (AI), formerly known as the gyro horizon or artificial horizon, is a flight instrument that informs the pilot of the aircraft orientation ?	Understand	CO5	AAE525.15
3	Justify how the flight control and monitoring are implemented? and explain how the roles of flight management and supervisory control (monitoring, decision making, interacting with intermediary computers) are becoming dominant	Understand	CO5	AAE525.15

4	Demonstrate the avionics supplement Precision Flight Controls and set the avionics console on a flat surface or on top of your flight console	Understand	CO5	AAE525.05
5	Interpret the multifunctional control display unit which optimizes aircraft and crew performance with a multifunction display-keyboard interface	Understand	CO5	AAE525.14
6	Discuss the Integrated auto-pilot system is a device used to guide an aircraft without direct assistance from the pilot . with the neat sketch?	Understand	CO5	AAE525.06
7	Highlight the Fly-By-Wire (FBW) system and also compare fly by wire with fly without wire in your words?	Understand	CO5	AAE525.06
8	Elucidate the Fly By Wire system s a system that replaces the conventional manual flight controls of an aircraft with an electronic interface of Boeing 777 aircraft?	Understand	CO5	AAE525.10
9	Summarize the Airbus model Fly By Wire system which is Launched into production during 1984, the Airbus Industries Airbus A320 became the first airliner to fly with an all-digital fly-by-wire control system	Understand	CO5	AAE525.10
10	Illustrate the Flight Data Recorder? And also explain its features and application in avionics industry?	Knowledge	CO5	AAE525.05

Prepared by:

Ms.M.Mary Thraza, Assistant Professor

HOD, AE