Q.22 Explain the various layers of avionics systems used in a typical aircrft.
Q.23 What are the essential component of an Avionics system?
Q.24 Explain one of the most modern reliable communication system with a sketch.
Q.25 What do you mean by failure survival?
Q.26 What is electronic warfare?
Q.27 Explain the difference between gyroscopic and intertial platform.
Q.28 Explain the function of radar?
Q.29 Differentiate between volatile and non-volatile members?
Q.30 What are various displays used in aircrafts?
Q.31 How is fly by wire different from conventional system?
Q.32 Explain Electromagnetic Interference.
Q.33 What is the application of data buses? Give some examples.
Q.34 Describe one of the typical avionics subsystems.
Q.35 Describe the functioning of Multi-Function display.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain MIL, STD 1553 B data bus in detail bring out clearly the bus architecture, protocol, word ad message formats and coupling methods.
Q.37 Discuss the various navigation systems in detail.
Q.38 Explain
a) Multi function display
b) Multi function keyboard

No. of Printed Pages : 4 187763/147763
Roll No. .....

6th Sem / Branch : AME
Sub. : Aircraft Avionics

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 How is fly by wire system implemented in an aircraft?
a) By using control rods and linkages connecting stick to control surfaces
b) By using high power radio transmitters and receivers.
c) By using computers and actuators to control surfaces
d) Artificial intelligence

Q.2 The main reason for using a collimated display in HUD is _____.
a) More information can be displayed.
b) Wide view of display
c) Information displayed in focused at infinity
d) Fast screen refresh rates

Q.3 What is the failure probability figure of a commercial aircraft?
a) 1×10^{-4}/hr b) 1×10^{-6}/hr
c) 1×10^{-11}/hr d) 1×10^{-20}/hr

Q.4 What is called a quadruplex system?
a) System with 4 channels
b) System with 8 channels

c) System which does not fail
d) System with 4 times the speed

Q.5 How is failure detected in a quadruplex system?
a) Cross comparing signals and voting
b) Monitoring signals
c) Adding signals
d) Subtracting signals

Q.6 Which of the following does not come under air data computer?
a) Pressure ports
b) Pressure transducers
c) Computer
d) Output drivers for interfacing

Q.7 Which of the following is true with respect of Head up display?
a) View and assimilate the flight data with his head up in a transparent display
b) Assimilate the flight data without looking at any kind of display panel.
c) View and assimilate the flight data that is projected on the helmet
d) Using a head up display a pilot and view and assimilate the flight data in all 360^0

Q.8 What is the IFOV for a collimating lens of diameter 100mm, the distance between the collimating lens and combiner glass = 50mm , the distance between pilot eyes and combiner glass=400 mm?
a) 25.0^0 b) 12.6^0
c) 28.0^0 d) 14.2^0

Q.9 Which one of the following is not a true with respect to integrated modular avionics architecture?
a) Reduces weight
b) Easy maintenance
c) Hardware independent software
d) Increased life cycle

Q.10 Which one of the following is not true with respect with centralized architecture?
a) Complex design
b) Software can be written easily
c) Requires long data buses
d) Computers are in readily accessible bay

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 What is Avionics?
Q.12 What is the main component in Avoinics?
Q.13 What is LRU?
Q.14 What is the function of HUD?
Q.15 What is digital data bus?
Q.16 What is the use of amplifier?
Q.17 What do you mean by integrated Avionic module?
Q.18 What do you mean by command and response?
Q.19 What is the use of Cooper Harper scale?
Q.20 What is the use of DVI?

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 With a neat diagram. Explain the navigation process.