



CBCS SCHEME

21AE/AS383

Question Paper Version : A

Third Semester B.E. Degree Examination, June/July 2023 Digitization in Aeronautics

Time: 1 hr.]

[Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. For each question, after selecting your answer, **darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

1. What are the essential components of smart factory?
 - a) Smart machines
 - b) Trained personnel
 - c) People at work
 - d) All of these
2. The automation of communication between devices with no human intervention is _____
 - a) Sensor
 - b) Big data
 - c) Wearables
 - d) Intelligence in airbus
3. What are the applications of Artificial Intelligence in airbus
 - a) Improve productivity of manufacturing process
 - b) Increase amount of raw materials required
 - c) Decrease the cost per unit product
 - d) Minimize the production time
4. How does Rolls Royce improve reliability in aircraft engines?
 - a) Predictive maintenance
 - b) Prescriptive analysis
 - c) Deployment of valuable devices
 - d) All of these
5. Which company utilizes the robotics for the first time in its production line?
 - a) Ford
 - b) Volkswagon
 - c) General Motors
 - d) Toyota
6. When did Industry 4.0 start?
 - a) 2007
 - b) 2010
 - c) 2013
 - d) 2016
7. Which of the following is not the benefit of 3D printing?
 - a) Faster
 - b) Expensive
 - c) Cost-effective
 - d) Takes lot of time

8. Find the alternative name of Rapid prototyping.
 a) Additive manufacturing b) Layer manufacturing
 c) Direct CAD manufacturing d) All of these
9. IIOT refers to
 a) Industrial Internship Of Things b) Industrial Internet Of Things
 c) Internet and Industry Of Things d) None of these
10. IIOT can be used in manufacturing industries to understand when machine needs servicing which _____ downtime.
 a) Reduces b) Increases c) Remains same d) Can not be determined
11. Preflight Inspection is conducted by
 a) Pilot b) Co-pilot c) Ground Staff d) Purser
12. In India, which organization provides approval for commercial aircraft?
 a) EASA b) FAM c) DGCA d) CASA
13. How much time is required for C-check?
 a) 2 days b) 2 hours c) 2 weeks d) 2 months
14. Line maintenance is also known as
 a) General Maintenance b) Routine maintenance
 c) Heavy maintenance d) Electrical maintenance
15. Time required for line maintenance.
 a) 45 minutes b) 450 minutes c) 45 hours d) 450 hours
16. Which of the following issues Airworthiness Directives in Australia?
 a) CASA b) DGCA c) ICAO d) FAA
17. ICAO refers to
 a) International Commercial Aviation Organization
 b) Indian Civil Aviation Organization
 c) International Civil Aviation Organization
 d) Indian Commercial Aviation Organization
18. How many man-hours does a D-check require?
 a) 40 b) 400 c) 4000 d) 40,000
19. Where do the (C-check and D-check) take place?
 a) MRP sites b) Airport Bay c) Manufacturing site d) Hanger
20. Which is the most extensive maintenance check performed on aircraft?
 a) A-check b) B-check c) C-check d) D-check
21. OEM refers to :
 a) Originally Equipped Machine b) Original Extra Manufacturer
 c) Original Equipment Manufacturer d) None of these
22. What causes most of aircraft accidents?
 a) Communication b) Technical faults
 c) Misunderstanding between ATC and Pilot d) None of these

23. What is meant by the term rofting?
 a) Conceptual drawing
 c) Specification and Requirements
 b) Mathematical modeling of skin
 d) None of these
24. The whole design philosophy of an aircraft is termed as _____
 a) Anatomy
 b) Design Evaluation
 c) Design wheel
 d) Sizing
25. TRL is digital maintenance refers to :
 a) Technology Readiness Level
 c) Teaching Readiness Level
 b) Technical Readiness Level
 d) None of these
26. What are the processes happens in prescriptive maintenance?
 a) Part of planned maintenance
 c) Investigation in aircraft system
 b) Event oriented with additional downtimes
 d) All of these.
27. CPS refers to
 a) Centre Physical System
 c) Centre Portable System
 b) Cyber Physical System
 d) None of these
28. DOC is subdivides as
 a) Operation, Service and Depreciation
 c) Operation, Repair and Service
 b) Operation, Inspection and Service
 d) None of these
29. What is FMS?
 a) Flying Management System
 c) Flight Maintenance System
 b) Flight Management System
 d) None of these
30. Initial Phase of an aircraft design is
 a) Conceptual design
 c) Detail design
 b) Preliminary design
 d) Sizing
31. In an aircraft, serial data transfer is achieved by
 a) Code division multiplexing
 c) Frequency division multiplexing
 b) Time division multiplexing
 d) Pulse modulation
32. What type of data bus standards are used in aircraft systems commonly?
 a) ARINC 429
 b) MIL-STD-1553
 c) Both a and b
 d) None of these
33. What is the fastest mode of data communication between components in aircraft?
 a) Co-axial cable
 c) Twisted pair cable
 b) Fibre optic cable
 d) Radio communication
34. MIL-STD 105E was first issued in
 a) 1949
 b) 1950
 c) 1945
 d) 1937
35. Which of the following is not an advantage of using a digital data bus?
 a) Self Test
 c) Less weight
 b) Multiplexing
 d) Not affected by electromagnetic interference
36. Where was the first fly by right system used?
 a) Bomber aircraft
 c) Spacecraft
 b) Airships
 d) Fighter aircraft

37. Which of the following affects FBW system?
 a) EMI
 b) Lighting strikes
 c) Flying in powerful radar region
 d) Bad weather
38. Which of the following is not a result of digital implementation?
 a) Hardware economy
 b) Flexibility in updating
 c) More power
 d) Test capabilities
39. What is FBW?
 a) Fly by wire system
 b) Fly back wire system
 c) Flight board wire
 d) None of these
40. How does the digital implementation in FBW system reduce weight?
 a) Fewer components
 b) System integration
 c) Light weight materials
 d) Automated controls
41. IRS refers to
 a) Increased Radial Systems
 b) Improved Radial Systems
 c) Improved Reduced Systems
 d) None of these
42. What is MEMS?
 a) Micro Electro – Mechanical Systems
 b) Macro Electro – Mechanical Systems
 c) Multiple Electro – Mechanical Systems
 d) None of these
43. Full form of PMOR:
 a) Periodical Method Order Reduction
 b) Periodical Model Order Reduction
 c) Parametric Model Order reduction
 d) Parametric Method Order Reduction
44. CFD refers to :
 a) Computer Fluid Dynamics
 b) Computational Fluid Dynamics
 c) Complex Fluid Dynamics
 d) None of these
45. What is the limitation of IRS method?
 a) Too slow
 b) Accuracy of Result
 c) Too fast
 d) None of these
46. What is the use of IRS method?
 a) Inertia term
 b) Stiffness term
 c) Both Inertia and Stiffness
 d) None of these
47. FEM methods are used in
 a) Aerodynamic analysis
 b) Heat - Transfer analysis
 c) Structural Analysis
 d) None of these
48. MOR techniques are used to
 a) Decrease computational efficiency
 b) Increase computational efficiency
 c) Increase design parameters
 d) Decrease design parameters
49. MOR refers to :
 a) Method of reduction
 b) Model order reduction
 c) Method order reduction
 d) None of these
50. What is FEM?
 a) Finite Element Module
 b) First Element Module
 c) Finite Element Method
 d) None of these
