C–8117	Sub. Code
	91323

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Second Semester

Aircraft Maintenance Science

APPLIED PHYSICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. What are the uses of Newton's rings?

2. Why are the rings circular?

3. Define polarizer and analyzer.

4. State the application of Brewster's law.

5. A sound wave has a frequency of 200Hz and a speed of 400 ms^{-1} in a medium. Find the wavelength of the sound wave.

6. Mention some applications of Ultrasonic waves.

7. Explain the basic principle of fiber optic communication.

8. What are the unique characteristics of laser?

9. Differentiate primitive and non – primitive cells with examples.

10. What is a single crystal?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Fringes of equal thickness are observed in a thin glass wedge of refractive index 1.52. The fringe spacing is 0.1mm, wavelength of light being 5893 Å. Calculate the wedge angle.

Or

(b) Briefly discuss about resolving power.

12. (a) Discuss the polarization by reflection and prove the Brewster's law.

Or

(b) Explain and derive the equation for time dilation.

13. (a) Explain Sabine's formula for reverberation time.

Or

(b) Describe any one method for the generation of ultrasonic waves.

14. (a) Discuss the population inversion in lasers.

Or

(b) Explain total internal reflection.

15. (a) Define space lattice and explain the crystal structure.

Or

(b) Explain superconductivity in detail.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain in detail about the diffraction grating.

Or

(b) Describe about Galiliean transformation.

17. (a) Briefly discuss about

(i) Cavitation

(ii) Non – Destructive testing.

Or

(b) Explain the principle and working of semiconductor laser.

18. (a) Describe about

(i) Miller indices

(ii) Meissner effect.

Or

(b) Discuss about length contraction and twin paradox as a consequence of theory of relativity.

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C–8118	Sub. Code
	91324

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Second Semester

Aircraft Maintenance Science

PRINCIPLE OF ELECTRONICS AND ELECTRONICS CIRCUITS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Give the color code for resistor values?

2. What is dielectric?

3. Write down the properties of semiconductors?

4. What is FET? Why is it so-called?

5. What are feedback amplifiers?

6. What is the usage of push pull amplifier?

7. Write the classification of oscillators?

8. What is piezoelectric effect?

9. What is a truth table?

10. What are half adder and full adder?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What is variable capacitor? Give its important uses. Explain the dissipation factor for a capacitor?

Or

(b) Explain inductance coil magnetic field strength plotted with respect to time?

12. (a) With the help of energy band diagrams, distinguish between insulators, conductors and semiconductors?

Or

(b) Explain the working of a transistor?

13. (a) Draw a circuit for Class C amplifier and discuss its working?

Or

(b) Draw the circuit for commonly used Class A amplifier. If the amplifier draws low of DC power, what is the maximum AC power available to the load?

14. (a) Explain with necessary diagram, the operation of R-C Phase Shift Oscillator.

Or

(b) Write the general circuit of L-C tuned oscillator and obtain an expression for loop gain.

15. (a) Explain briefly about phase modulation demodulation.

Or

(b) Conversion of binary number to their decimal equivalents (101; 111011).

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) In a crystal oscillator, the crystal has the following parameters. L=0.33H, C=0.065PF. C^{I}=1.0PF & R=5.5 Ω

find (i) serial resonant frequency (ii) parallel resonant frequency (iii) Q of the crystal

Or

(b) Explain how colpitt's oscillator circuits can be obtained from this general circuit?

17. (a) Explain the working of UJT relaxation oscillator (or) UJT sweep circuit.

Or

(b) Explain the different types of conduction in semiconductors.

18. (a) With the help of suitable diagram, Explain the working of enhancement MOSFET?

Or

(b) Explain with necessary diagram, the operation of wein bridge oscillator?

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C–8119	Sub. Code
	91342

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

Aircraft Maintenance Science

THERMODYNAMICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. What is meant by surroundings?

2. Define the term enthalpy?

3. What is meant by air standard cycles?

4. What are the factors to be considered in an air conditioning a room?

5. Define Dalton's law of partial pressure?

6. Write down the classification of fuels?

7. What is meant by multistage compressor?

8. What are the factors that affect the volumetric efficiency of a reciprocating compressor?

9. How will you classify propulsive engine?

10. Give a components of a turbojet?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) State first law of thermodynamics and its limitation?

Or

(b) 2 kg of gas at a pressure of 1.5 bar, Occupies a volume of 2.5 m^3. If this gas compresses isothermally to 1/3 times the initial volume. Find initial, Final temperature, work done, heat transfer?

12. (a) Drive the characteristics equation for gases?

Or

(b) Distinguish between simple vapour compressor and vapour absorption refrigeration's system?

13. (a) A certain gas has Pc 0.913 and $V\,c$ = 0.653 kJ/kgK. Find the molecular weight and the gas constant R of the gas.

Or

(b) Describe the method used for finding the calorific values of gaseous fuels

14. (a) A centrifugal air compressor delivers 15kg of air, per minute. The inlet and outlet conditions of air are $V_1 = 10m/s, p1 = 1\,\text{bar}$ $\text{Vs1} = 0.5m^3/kg$ and $V_2 = 80m/s, p_2 = 7$ bar, $V_{s2} = 0.15m^3/kg$ .The increase in enthalpy of air passing through the compressor is 160kJ/kg and heat loss to the surroundings is 720 kJ/min. Find the power required to drive the compressor. Assume that inlet and discharge lines are at the same level.

Or

(b) Compare rotary and reciprocating compressors?

15. (a) Explain the working of free piston engine with neat sketch. What are its advantages and disadvantages over gas turbine?

Or

(b) Explain the rocket propulsion system?

Part C $(3 \times 10 = 30)$

Answer **all** questions.

16. (a) In a steady flow system, the working fluid flowing at 5kg/see enters the system at 6 bar with a velocity of 300 m/sec. Its internal energy is 150 kj/kg and specific volume is 0.4 m^3/kg. the pressure, velocity, internal energy and specific volume values at exit are 1.5 bar, 150 m/sec, 100 kj/kg and 1.26 m^3/kg respectively. The substance loses 5 kj/kg heat as it passes through the system. Determine the power of the system, stating whether it is from or to the system.

Or

(b) 0.5 kg of air, initially at 25°C, is a heated at constant pressure until the volume is double and is then heated at constant volume until the pressure is doubled. For the total path, find the work transfer, heat transfer and change in entropy.

17. (a) Discuss in detail various types of Air Compressors with suitable diagrams?

Or

(b) In a gas turbine plant working on the brayton cycle the air at the inlet is at 27°c, 0.1 MPa. The pressure ratio is 6.25 and the maximum temperature is 800°c. The turbine and compressor efficiencies are each 80%. Find (i) The compressor work per kg of air, (ii) The turbine work per kg of air, (iii) The heat supplied per kg of air, (iv) The cycle efficiency, and (v) The turbine exhaust temperature.

18. (a) Derive are expression for thermal efficiency of Brayton cycle as a function of pressure ratio.

Or

(b) Two engines are to operate on Otto and Diesel cycles with the following data: Maximum temperature 1400 K, exhaust temperature 700 K, State of air at the beginning of compression 0.1 MPa, 300 K. Estimate the compression ratios, the maximum pressures efficiencies, and rate of work outputs (for 1 kg/min of air) of the respective cycles.

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C–8120	Sub. Code
	91343

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

Aircraft Maintenance Science

AIRCRAFT INSTRUMENTS AND COMPASS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is graduation marks?

2. What are the advantages of Straight Scale Display?

3. Define the term Lapse Rate.

4. What is Basic Air Data System?

5. What is gyroscope?

6. What are the factors responsible for rate of precession?

7. What is the purpose of servo motor in Pressure indicating system?

8. Write the common type of Pressure switch?

9. What is known as magnetic variation?

10. What is hard —iron magnetism?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write the application of sector type markings.

Or

(b) What do you understand by Seven Segment Display?

12. (a) Write notes on Position or Pressure error.

Or

(b) What is the principle of Square law compensation?

13. (a) What do you understand by Transport Wander?

Or

(b) What is gyro horizon principle?

14. (a) Write short notes on Sensor unit of pressure measurement.

Or

(b) Write short notes on whetstone bridge system.

15. (a) What do you understand by location of Magnetic Compass?

Or

(b) Write short notes on Deviation Coefficient "B" .

Part C (3 × 10 = 30)

Answer all questions.

16. (a) Detail the construction and principles of Turn and Slip Indicator.

Or

(b) Write short notes on (i) Digital Displays (ii) Director Displays.

17. (a) Briefly explain the Description of driving force of gyroscopes.

Or

(b) Briefly explain about the Engine Pressure ratio indicator.

18. (a) Describe the Direct Reading Compass.

Or

(b) Explain the fuel flow indicator.

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C–8121	Sub. Code
	91344

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

Aircraft Maintenance Science

AIRCRAFT STRUCTURE AND SYSTEMS

(2016 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write the significance of failsafe concept?

2. What are the advantages of sandwich construction?

3. What are the purposes of Multi Flaps?

4. Write the basic concept of Fly-by-Wire system?

5. What is the purpose of Trunnion in landing gear?

6. What is the significance of Anti-Skid system?

7. Write the types of accumulators used in aircraft hydraulic system?

8. List out the various types of hydraulic fluids?

9. Write the types of aviation fuels?

10. What is the purpose of De-fueling operation?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on Spar and Stringer purpose.

Or

(b) What do you understand by Stressed skin fuselage construction?

12. (a) Just layout the Aileron operation?

Or

(b) Write short notes on various sub-assemblies of conventional flight control system.

13. (a) What are the functions of landing gear and its types?

Or

(b) Write short notes on aircraft wheels.

14. (a) Write notes on fluid lines of aircraft.

Or

(b) Write short notes on (i) Pressure relief valve (ii) Priority Valve?

15. (a) What are the functions of booster pump used in multi engine aircraft?

Or

(b) Write short notes on various types of fuel tanks used in aircraft.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) List out the various inspections of flight control system.

Or

(b) Describe about the Fully powered flight control system.

17. (a) Explain about the brake system of Boeing 737 aircraft.

Or

(b) Write the importance of sequence valve in landing gear system with neat sketch.

18. (a) Write the application of various seals used in aircraft.

Or

(b) List out the precautions of aircraft refueling.

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C–8122	Sub. Code
	91351

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fifth Semester

Aircraft Maintenance Science

AVIATION LAW AND AIRCRAFT RULES AND REGULATIONS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. What is propeller log book?

2. Write the significance of Mandatory Modifications.

3. What is register of aircraft?

4. What are the basic documents required for issue of C of A?

5. List out the information for defect reporting of non-scheduled operator.

6. What is Ferry Flight permit?

7. Write the equipments for aircraft on flight over water.

8. Define First Aid Kit.

9. Write the purpose of fuel sampling check.

10. Define unusable fuel.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on Indian Aircraft Act-1934.

Or

(b) Write the contents of first section of logbook.

12. (a) Write short notes on application for issue of C of A.

Or

(b) List out the documents on-board the aircraft for delivery flight.

13. (a) Under what purposes the special flight permit issued.

Or

(b) List out the information required for weight schedule.

14. (a) Write short notes on Periodic examination of First-aid-kit.

Or

(b) List out the equipments for aircraft operated on VFR.

15. (a) What is fuel spillage and its significance?

Or

(b) Write short notes on Purging.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain the conditions for C of A remain valid.

Or

(b) Describe the submission of application for registration of aircraft in India.

17. (a) List out the conditions and limitations for ferry flight.

Or

(b) List out the instruments required for aircraft operating at night.

18. (a) List out the Defueling procedure.

Or

(b) List out the contents of type certificate.

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C–8123	Sub. Code 91352

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fifth Semester

Aircraft Maintenance Science

PISTON ENGINE AND PROPELLER

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define stroke.

2. Define BDC,TDC

3. What are the advantages in supercharging?

4. What liquid is used as a coolant in a liquid cooled engine?

5. Define sliding friction.

6. What is idle cut-off?

7. Why ignition shielding required?

8. What do you mean by heat range of the spark plug?

9. Define variable pitch propeller.

10. Define propeller.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about the four strokes happen in the engine.

Or

(b) Write a short note on volumetric efficiency.

12. (a) Explain in detail about opposed engine crank case.

Or

(b) Write a short note about crank pin.

13. (a) Write a short note about float mechanism in the float type carburetor.

Or

(b) Write short note about oil separator and oil pressure gage.

14. (a) Write a short note about how the wiring circuit for ignition designed.

Or

(b) Write a procedure for complete inspection of a magneto.

15. (a) Write about the blade element theory.

Or

(b) What are the forces acting on the propeller during flight? Explain it.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain about the engine valve timing diagram.

Or

(b) Explain in detail about the propeller reduction gear.

17. (a) What are the causes of the ice formation in the carburetor?

Or

(b) Write a procedure to be followed for servicing of the aircraft spark plug.

18. (a) Write a short note on controllable pitch propeller.

Or

(b) What are the characteristics of the aircraft lubricating oil?

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C–8124	Sub. Code 91353

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fifth Semester

Aircraft Maintenance Science

TURBINE ENGINE

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define the term propulsive efficiency.

2. What are the two types of turbofan engines?

3. List the three types of combustion chamber commonly used in gas turbine engines.

4. What is the function of a diffuser?

5. What qualities should turbine fuels posses?

6. What are the difference between jet A and jet B fuels.

7. Why was it necessary to develop synthetic lubricants for gas turbine engines?

8. What is the function of a scavenge pump?

9. List the main components of a gas turbine engine ignition system.

10. At what engine speed does the starter system disengage?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Describe the principle and operations of a turbojet engine.

Or

(b) How does humidity effect turbine engine performance?

12. (a) Describe the main components of an axial flow compressor.

Or

(b) Describe the function of the exhaust nozzle.

13. (a) Describe the basic design and operation of a fuel control unit.

Or

(b) What benefits are derived from use of a full authority EEC system?

14. (a) Describe the principle and operations of a full flow oil system.

Or

(b) Describe the function of a magnetic chip detector.

15. (a) Explain the working of modern gas turbine ignition system with neat sketch.

Or

(b) Explain the service and inspection procedures of igniters and glow plugs.

Part C $(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain the effect of water injection affects the gas turbine performance.

Or

(b) Describe about the air inlet icing.

17. (a) Describe the function and types of thrust reversals commonly being used on aircraft.

Or

(b) With neat sketch, explain the operation of large aircraft turbofan engine fuel systems.

18. (a) Describe the two principle methods of oil analysis.

Or

(b) Describe the operation of an air turbine starters.

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C–8125	Sub. Code
	91354

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fifth Semester

Aircraft Maintenance Science

AIRCRAFT ELECTRICAL SYSTEM

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define Ohm's law.

2. What is relay?

3. What are the active materials in nickel-cadmium storage cell?

4. What is the most common method for determining the state of charge of a lead acid battery?

5. What is the advantage of a static inverter?

6. How may armature reaction be reduced?

7. What is the purpose of bus bar?

8. What is the maximum allowable temperature for aluminum wire?

9. What is an open circuit?

10. What are the different types of inspection schedules for light aircraft?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Describe the function of static dischargers.

Or

(b) Explain Kirchhoff's law of parallel current flows.

12. (a) Describe the construction of lead-acid batteries.

Or

(b) Describe the procedure for reconditioning a nickel cadmium battery.

13. (a) Give the procedure for balancing generator load in an airplane.

Or

(b) Explain the function of starter generator.

14. (a) Explain in briefly about split bus system with neat sketch.

Or

(b) Explain the purpose of bonding in an aircraft.

15. (a) Explain typical trouble shooting sequence.

Or

(b) Describe the voltage troubleshooting.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain clearly about the maintenance and procedure of starter generator.

Or

(b) Describe the characteristics of DC generators.

17. (a) Describe the procedure for soldering wires to connectors.

Or

(b) Briefly explain the requirements for circuit protection devices.

18. (a) Explain the working operation of a nickel-cadmium cell.

Or

(b) Explain how electric wires are identified in a system.

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C–8126	Sub. Code 91355

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fifth Semester

Aircraft Maintenance Science

LOGISTICS AND AIR CARGO MANAGEMENT

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is Logistics Channel?

2. Write down the benefits of MRP.

3. Define Deregulation.

4. What are the roles of Warehouse?

5. What is Global Supply Chain?

6. What is TQM?

7. What is Air Cargo?

8. What is Disbursement?

9. What is Cargo Zone?

10. What is Cargo Carriers?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a short notes on Inventory Management.

Or

(b) Explain the factors that challenge the Logistics Environment.

12. (a) Write a short notes on Warehouse Management.

Or

(b) Explain the Material handling in detail.

13. (a) Explain the international documents that are used in GSC.

Or

(b) Explain briefly about Strategy Formulation and Implementation.

14. (a) Explain in detail about the Special Cargo.

Or

(b) Explain the functions and purpose of Airway Bill.

15. (a) Explain the emerging trends in Cargo and Cargo Carriers.

Or

(b) Write short notes on Airport cargo activity.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain the Inbound Logistics with a suitable examples.

Or

(b) Discuss the basic functions of Product Packaging.

17. (a) Explain the various components of Logistics.

Or

(b) Explain the various ways of improving Logistics performance.

18. (a) Explain handling of Perishable and Valuable Cargo.

Or

(b) Explain the various facilities used at Cargo terminal?

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C–8127	Sub. Code 91361

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Sixth Semester

Aircraft Maintenance Science

AIRCRAFT MAINTENANCE, GROUND HANDLING AND SUPPORT EQUIPMENTS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define special inspection.

2. Define operational life of components

3. Explain Uneven Wear check in wheels.

4. What is the purpose of the bleeding of the brakes?

5. Write down the classification of the structural damage.

6. When selecting the rivet what should be considered specifically with material property?

7. Equipment and tools needed for the tie down operation.

8. Define levelling.

9. What is the use of hydraulic power unit?

10. What are the types of ground power units?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Describe the requirements for the continuous airworthiness.

Or

(b) Write in detail about the post flight inspection to be done on aircraft.

12. (a) Write down the procedure for bleeding of brakes.

Or

(b) Write about the Hard or Overweight Landing Inspection.

13. (a) Discuss in detail about the classification of the structural damage.

Or

(b) Explain about the following:

(i) Hole duplicators

(ii) Rivet cutters

14. (a) Enumerate the procedure for heavy aircraft tie down process.

Or

(b) Explain the steps and precautions to be followed in over wing fuelling process.

15. (a) Explain about air-conditioning and heating unit.

Or

(b) Explain about electrical power unit.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain about following:

(i) Air start unit

(ii) Pre oiling equipment

Or

(b) Explain about the equipment needed for the aircraft tie down operation.

17. (a) How to determine the no. of rivets needed for the repair work?

Or

(b) What are the types of the inspection of the aircraft? Briefly discuss about them.

18. (a) What are the types of fire and extinguishing agents?

Or

(b) Explain in detail about steps to be followed in bulkhead repair work.

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C–8128	Sub. Code
	91362

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Sixth Semester

Aircraft Maintenance Science

AERO ENGINE MAINTENANCE

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Write the materials used for construction of crank case assembly?

2. What is known as Dimensional Check?

3. What is the importance of Fine pitch?

4. Write the basic principles of Propeller?

5. Write the significance of Piston Engine Ground Run?

6. List out the categories of inspections of aircraft parts during major overhaul?

7. What is compressor stall?

8. What is the indication of Axial Flow compressor stage?

9. What is engine pressure ratio and its importance?

10. Define throttle?

Part B $(5 \times 5 = 25)$

Answer **all** questions.

11. (a) Write short notes on Propeller Reduction Gear?

Or

(b) Discuss about the Rocker Arm?

12. (a) List out the damages of propeller blade?

Or

(b) What are advantages of Piston Engine Run out checks?

13. (a) Describe the cleaning procedure of Reciprocating Engine?

Or

(b) Write the importance of Decarbonizing Process?

14. (a) What are the functions of Stator Vanes of Axial Flow compressor?

Or

(b) What is the purpose of boroscope and its applications?

15. (a) What are the functions of Ground Run up Enclosure?

Or

(b) What is thermocouple principle?

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Briefly discuss about the general overhaul Procedure?

Or

(b) How to check Propeller Blade Tracking?

17. (a) Explain about the RE ignition system maintenance and inspection?

Or

(b) List out the inspection procedures of FOD?

18. (a) List out the factors influencing the gas turbine blade failure?

Or

(b) Write short notes on (i) Exhaust Gas Temperature (ii) Engine pressure ratio?

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C–8129	Sub. Code 91363

B.Sc. DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Aircraft Maintenance Science

AIRCRAFT COMMUNICATION AND NAVIGATION SYSTEM

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What fields are found in a radio wave?

2. What is signal detection?

3. What is air ground data link?

4. What is the advantages of SATCOM?

5. What is the function of transponder?

6. What is duplexer?

7. What are different types of INS?

8. What is marker beacon?

9. What is the nature of a radar signal?

10. Why a waveguide system is required in a radar R-T unit?

Part B $(5 \times 5 = 25)$

Answer **all** questions

11. (a) Explain the classification of amplifier with neat diagram?

Or

(b) Explain with the block diagram of radio receiver?

12. (a) Explain the operation of Very Low Frequency communication system?

Or

(b) Difference between HF and VHF communication system?

13. (a) Describe the various dead reckoning navigation systems used in a aircraft?

Or

(b) Explain the theory of operation of ADF?

14. (a) Describe the operation of a radio telephones?

Or

(b) Explain briefly radio navigation system?

15. (a) Describe the principle of a analog radar system?

Or

(b) Explain the weather radar?

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain with block diagram of super heterodyne receiver.

Or

(b) Explain in details about dead reckoning navigation system.

17. (a) Explain the testing of communication radio.

Or

(b) Describe installation of radio equipment.

18. (a) Describe the clear function of the weather mapping system display with example.

Or

(b) Explain the various communication used in an aircraft.

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C–8130	Sub. Code
	91364

B.Sc. DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Aircraft Maintenance Science

PRINCIPLES OF AIRLINE AND AIRPORT MANAGEMENT

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. What is hot air balloon?

2. What are the three major threads in air transport in India?

3. What is the difference between IATA and ICAO?

4. What is IATA and its significance in air transport?

5. What is airport master plan?

6. What is known as simple unit terminal?

7. Define “Dwell time”.

8. What is airline check-in-counter?

9. What is meant by PPP in airport?

10. What are the major environmental factors affect the airline industry?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write the classification and trends in the Indian aviation industry.

Or

(b) List out the major challenges in the growth of Indian aviation.

12. (a) What are the functions of ICAO?

Or

(b) Write the objectives of IATA.

13. (a) Write short notes on Linear Terminal Concepts.

Or

(b) Write short notes on Airports Authority of India.

14. (a) Explain the apron area.

Or

(b) Write short notes on Flight Information Display system.

15. (a) Write short notes on Passenger service fees.

Or

(b) Write the procedures to minimize aircraft engine emission.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Write short essay about air transport system in India.

Or

(b) Explain the roles and contributions of IATA in Air Transport.

17. (a) List out the contents of information in airport layout.

Or

(b) Write short notes on (i) Boarding Pass (ii) Immigration formalities.

18. (a) Describe about the environmental management system.

Or

(b) Explain the aviation meteorological services.

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C–8131	Sub. Code 91365

B.Sc. DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Aircraft Maintenance Science

AIRPORT ENGINEERING

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are the roles of AAI?

2. Define aerodrome reference point.

3. What is taxiway system?

4. What is the significance of runway orientation?

5. Define the term “gate”.

6. What is holding apron?

7. What is Carry on-baggage Screening Facilities?

8. What is obstacle lighting?

9. Write the characteristics of Emergency Lights.

10. Define VFR and its significance.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) List out the factors that influence runway capacity.

Or

(b) Write the functions of airport.

12. (a) List out and any one of the ATC factors affecting the runway capacity.

Or

(b) Write the Planning Principles of Taxiway.

13. (a) List out the four factors for design of airport apron.

Or

(b) Write the three main functions of Passenger terminal.

14. (a) Write short notes on Airport light intensity and control.

Or

(b) What do you understand of Aerodrome beacon?

15. (a) What are the functions of flight plan?

Or

(b) List out the role of meteorology in aviation.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe the different approaches for determination of runway capacity.

Or

(b) List out the functions of DGCA.

17. (a) Explain about the Apron facilities and requirements.

Or

(b) Briefly explain about the Approach Lighting System.

18. (a) Write short notes on (i) Runway threshold identification lights (ii) Taxi way edge lights.

Or

(b) Write short notes on (i) DME (ii) ILS.

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