C–8364	Sub. Code
	97214

B.Sc. DEGREE EXAMINATION, APRIL 2023

First Semester

Aviation

AIRPORT OPERATIONS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Aviation.

2. What is meant by FDI?

3. Define Airport.

4. Differentiate Heliport and Water Airport.

5. How important is a customer in aviation?

6. Differentiate Latitude and Longitude.

7. What are Time zones?

8. What is the purpose of IATA?

9. Define Runway.

10. What is called aircraft load planning?

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

Answer **all** questions

11. (a) Explain in detail about the principles of aviation.

Or

(b) List out the impacts of aviation in world wars.

12. (a) Explain in detail about airport structures.

Or

(b) Explain the differences between international airport and domestic airport.

13. (a) List out the types of customers in an airport.

Or

(b) Explain airport revenues in detail.

14. (a) What are the travel documents required for domestic and international transportation?

Or

(b) Explain the different time zones in detail.

15. (a) Explain in detail about markings and lightings in runway.

Or

(b) What are ramp services? Explain them.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) With proper diagram, explain different layouts of airside of an airport.

Or

(b) Explain the following:

(i) Floating airport

(ii) Water airport

(iii) Heliport

17. (a) Explain in detail about IATA traffic conference areas.

Or

(b) Explain in detail about economic and physical geography heat zones.

18. (a) What is called fueling? Explain in detail.

Or

(b) Explain in detail about ATC and related services.

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C–8365	Sub. Code 97223

B.Sc. DEGREE EXAMINATION, APRIL 2023

Second Semester

Aviation

AIR REGULATIONS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is Situational Awareness?

2. What is the freedom of air?

3. Define Controlled Airspace.

4. Define Flight Information Service.

5. What is a Convention?

6. Expand ICAO.

7. What is a Serious Injury?

8. Define Workload.

9. What is Human Error?

10. What is the purpose of VOR?

Part B (5 × 5 = 25)

Answer **all** questions

11. (a) What are the functions of the DGCA?

Or

(b) Explain about the Chicago Convention.

12. (a) Explain about the object of ATS.

Or

(b) Explain about control areas.

13. (a) Explain about the Indian Aircraft Act of 1934.

Or

(b) Explain about powers of the Aircraft Accident investigators.

14. (a) Explain about decision making.

Or

(b) Explain about stress management.

15. (a) What are the communication and navigational requirement?

Or

(b) What are the safety equipment requirements?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the Tokyo Convention.

Or

(b) Explain in detail the factors affecting Human Performance.

17. (a) Explain in detail about

(i) FIR

(ii) ADIZ

Or

(b) Explain in detail about the Indian Aircraft Rules 2003.

18. (a) Explain in detail about Separation Minima with diagrams.

Or

(b) Explain in detail about Fatigue and Stress Management.

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C–8366	Sub. Code
	97224

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Second Semester

Aviation

AIRCRAFT AND ENGINE (GENERAL)

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Differentiate between Bi-plane and mono plane.

2. Write a any two application of ornithopter?

3. What are the five main components of an aircraft?

4. What are the pitot static instruments available in aircraft?

5. Name atmosphere layers?

6. Define lift.

7. What are the types of rockets available?

8. Give the classification of the engines.

9. Define factor of safety.

10. State Hook's Law.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write the evolution of the power plant of an aircraft.

Or

(b) Write short notes on evolution of flight vehicles.

12. (a) Explain about the powered control.

Or

(b) Explain in detail any one gyroscopic instrument.

13. (a) Discuss the temperature, pressure variation with altitude of standard atmosphere and classify the atmospheric layers.

Or

(b) Define :

(i) Center of pressure

(ii) Coefficient of pressure

(iii) Airfoil

14. (a) What are the components available in turbofan engine. Draw and indicate it's components.

Or

(b) What are the different types of propellants for different kind of rockets?

15. (a) Describe the fuselage construction.

Or

(b) Write short note on composite materials and their applications to aircraft construction.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain about Bi-plane and monoplane with its merits and demerits.

Or

(b) Briefly explain the construction and operation of Turbo jet with neat diagram.

17. (a) Explain in detail about the primary control surfaces.

Or

(b) Sketch a typical aerofoil and explain how the lifts are generated by free stream air flow.

18. (a) Explain about the liquid propelled rocket engine with neat diagram.

Or

(b) Explain in detail about the monocoque structure.

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C–8367	Sub. Code 97232

B.Sc. DEGREE EXAMINATION, APRIL 2023

Third Semester

Aviation

COMPUTER APPLICATIONS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. How will you classify Computers?

2. List down the advantages of LINUX.

3. What is an ISP (Internet Service Provider)?

4. Name the four different ways to view your presentation in Power Point.

5. What are the palettes available in Photo shop?

6. Write down the ways to create static PDF's.

7. Compare PROM, EPROM and EEPROM.

8. What is a memory card reader?

9. Define transmission medium.

10. What are bridges in networking?

Part B (5 × 5 = 25)

Answer **all** questions

11. (a) Explain the characteristics of computer.

Or

(b) What is bus arbitration? Explain its types.

12. (a) Explain the four status bar modes in MS-Excel.

Or

(b) Explain the operation of WWW.

13. (a) Explain the concepts of red eye removal and hot spot removal in Photo shop.

Or

(b) What are the different shape creating tools in Coral Draw? Explain each tool.

14. (a) Explain the components of a CPU in detail.

Or

(b) How to set up and install a printer and perform a test print out?

15. (a) Explain the different types of computer Networks?

Or

(b) How to create a straight cable using standard color-coding (RJ-45)?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Classify and explain computers based on size, purpose and mechanism?

Or

(b) Explain in detail the common cyber-attacks of e-mail.

17. (a) Write the different types of tools used in Photo shop in detail.

Or

(b) What is a Motherboard? Explain the different types of motherboards in detail.

18. (a) Write in detail the different types of Network topologies.

Or

(b) Write in detail about the different types of cables used to connect computer parts.

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C–8368	Sub. Code
	97233

B.Sc. DEGREE EXAMINATION, APRIL 2023

Third Semester

Aviation

AVIATION WEATHER AND METEOROLOGY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is Geography?

2. What is latitude?

3. Define Isothermal layers.

4. Define Turbulence.

5. What is Gust?

6. What is Altimetry?

7. What is Cloud Base?

8. What is Divergence?

9. Define METAR.

10. What are Surface Charts?

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

Answer **all** questions

11. (a) Explain in brief about the Mesosphere.

Or

(b) Explain about different layers in the atmosphere.

12. (a) Explain in brief the formation of Cloud ice.

Or

(b) What is visibility? Explain about the different factors affecting visibility.

13. (a) Explain the variation of Pressure with Altitude.

Or

(b) Explain in brief about Inversions.

14. (a) Explain about Mid-level Clouds.

Or

(b) Explain about Turbulent Mixing.

15. (a) What is Satellite Meteorology?

Or

(b) What are Surface Weather Observations?

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain about the Coriolis Effect.

Or

(b) Explain in detail about

(i) Troposphere

(ii) Stratosphere

17. (a) Explain about the Lifecycle of Thunderstorms.

Or

(b) Explain about

(i) Land Breeze

(ii) Sea Breeze

18. (a) Explain in detail about METAR.

Or

(b) Explain in detail about

(i) Anabatic Wind

(ii) Katabatic Wind

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C–8369	Sub. Code
	97234

B.Sc. DEGREE EXAMINATION, APRIL 2023

Third Semester

Aviation

FLIGHT SAFETY AND SUPPORT SYSTEMS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define the term Safety.

2. What is meant by Marshalling?

3. Explain the use of a control tower.

4. What is an Apron?

5. Explain the use of trestles.

6. What are the different types of fire extinguishers?

7. What is rigging?

8. What is a tensiometer?

9. What is dragging?

10. What is meant by pedal travel in brakes'?

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

Answer **all** questions

11. (a) Explain about aircraft cleaning and maintenance.

Or

(b) How are aircrafts towed during adverse conditions?

12. (a) Explain about the different parts of a runway.

Or

(b) Explain about airfield lighting systems.

13. (a) What are the different types of ground equipment used in aircraft maintenance?

Or

(b) Explain about air conditioning and heating unit.

14. (a) Explain about rigging of control surfaces.

Or

(b) Explain about duplicate inspection in aircraft maintenance.

15. (a) What is meant by shock strut charging?

Or

(b) Explain about bleeding in aircrafts.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain about hoisting of aircrafts in detail.

Or

(b) Explain about approach and clear zone layout with neat diagrams.

17. (a) Explain about the different electrical power supply equipment in detail.

Or

(b) Explain in detail about the following:

(i) Gantry

(ii) Ladders.

(iii) Platforms

(iv) trestles

(v) Chocks.

18. (a) What is the response time of firefighting unit in airports? Explain about ARFF in detail.

Or

(b) Explain the maintenance of landing gears in detail.

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C–8370	Sub. Code
	97235

B.Sc. DEGREE EXAMINATION, APRIL 2023

Third Semester

Aviation

YOGA FOR HUMAN EXCELLENCE

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Yoga Sutra.

2. List down the Eight Limbs of Yoga.

3. Write any two scopes of Yoga.

4. Define Dharana.

5. Define Sports.

6. Define Yogic Practices.

7. What is meant by Mudra?

8. What is meant by Kriyas?

9. Write the meaning of Meditation

10. List down the schools of Meditation.

Part B (5 × 5 = 25)

Answer **all** questions

11. (a) Narrate the meaning and definition of Yoga.

Or

(b) Narrate the 31 euerste.

12. (a) Write down any Five limbs of Yoga in detail.

Or

(b) Briefly explain about the Karma Yoga.

13. (a) Narrate the importance of Yoga in Physical Education and Sports.

Or

(b) Write in detail about the Principles of Yogic Practices.

14. (a) Narrate the basic principles of Preparatory movement of doing Asanas.

Or

(b) Write in detail about the precautions and methods of doing Pranayama.

15. (a) Narrate the concept of Meditation.

Or

(b) Narrate the benefits of Meditation.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Write in detail about the aim and objectives of Yoga.

Or

(b) Briefly explain about the Patanja;is eight limbs of Yoga with examples.

17. (a) Narrate the difference between the Yogasanas and Physical exercises.

Or

(b) Narrate the classification of Asanas and Pranayama.

18. (a) Briefly explain about the different School of Meditation.

Or

(b) Explain in detail about the Methods and Technique of Teaching Yogic Practices.

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C–8371

Sub. Code
97242

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fourth Semester

Aviation

AIR NAVIGATION (GENERAL)

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is Radio Navigation?

2. Define Airspace.

3. What is the difference in degrees between homing and bearing?

4. What is Drift Angle and Wind Correction Angle?

5. Write about Flight Management System (FMS).

6. Expand the following :
   (a) GPS
   (b) VOR
   (c) INS
   (d) TCAS

7. What are Tropical Maps?

8. What is great circle track?

9. What is the difference between Local Mean Time and Coordinated Mean Time?

10. List the requirements of a good Pitot-Static System.

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

Answer **all** questions.

11. (a) What is 1 in 60 rule? Explain about their application in Navigation.

Or

(b) What are the types of navigation system used in aircraft? Explain any one type of a major navigation system.

12. (a) Write short notes on Airspeed.

Or

(b) Write short notes on different types Airspeed and their relationships.

13. (a) Write short notes on Transponder system used in aircraft.

Or

(b) Explain the operation of Inertial Navigation System.

14. (a) With suitable example, explain about Conversion angle and scale of General charts used for navigation.

Or

(b) Write short notes on Map reading and their importance in Navigation.

15. (a) Define :

(i) Local Mean Time

(ii) Co-ordinated universal time

(iii) Standard Time.

Or

(b) Describe in detail about Solar system.

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

Answer **all** questions.

16. (a) (i) What are different types of air speed?

(ii) Explain in detail about each one of them and their relationship.

Or

(b) Explain briefly about GPS and its applications.

17. (a) Explain briefly about Bearing and Homing are understand in terms of Navigation.

Or

(b) (i) Explain briefly about Flight Management System (FMS).

(ii) Write short notes on Automatic Direction Finder (ADF).

18. (a) What is Radio Navigation? Explain about any two radio navigation system?

Or

(b) Explain about General Chart properties with suitable examples in aircraft navigation.

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C–8372	Sub. Code 97243

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fourth Semester

Aviation

AVIATION COMMUNICATION

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. How transmission of numbers carried out in aviation communication?

2. What is aviation phraseology?

3. Write the technologies in aeronautical telecommunication.

4. What is phonetic alphabet?

5. Define meteorology.

6. Brief about communication during emergency.

7. What is decompression?

8. What is aircraft call sign?

9. What is meant by aviation communication?

10. What is the difference between emergencies and distress?

Part B (5 × 5 = 25)

Answer **all** questions

11. (a) Describe the purpose and operation of Direction Finding.

Or

(b) Explain about Radio test procedure.

12. (a) Write short notes on search and rescue operation.

Or

(b) Explain about the coordination between ATS (Air Traffic-Control Service).

13. (a) Explain the operation of HF transceiver with suitable diagram.

Or

(b) Explain the Frequency spectrum of radio communication and the frequency band.

14. (a) Explain about Classification Airspace and en-routes.

Or

(b) Explain in detail about Holding Procedure.

15. (a) What are all the action to be taken in case of communication failure during emergency?

Or

(b) Briefly explain the distress procedure when an aircraft is lost its control due to bird hit.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about ground to air communication.

Or

(b) Explain briefly the applications of Morse code communication in aviation.

17. (a) Explain the communication procedure during meteorological conditions.

Or

(b) Explain the communication system used in aircraft.

18. (a) Explain the communication procedures due to fire hazard.

Or

(b) Explain briefly on classification of Airspace and Air Routes.

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C–8373	Sub. Code
	97244

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fourth Semester

Aviation

LOGISTICS AND AIR CARGO MANAGEMENT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is DRP?

2. What is inventory management?

3. What is inbound logistics?

4. What are the benefits of warehouses?

5. What are the importance of supply chain management system?

6. Write short notes on the phases of TQM.

7. What is Airway Bill?

8. What is ULD Rate?

9. What is fragile cargo?

10. What are the advantages of air cargo logistics?

Part B (5 × 5 = 25)

Answer **all** questions

11. (a) What are the components of logistics?

Or

(b) Write briefly about the model of inventory management?

12. (a) Enumerate the role of warehouses.

Or

(b) Explain about various methods of pricing.

13. (a) What are the elements in international documentation and explain?

Or

(b) Explain about quality concepts in logistics.

14. (a) Explain briefly about industry regulations in air cargo.

Or

(b) Explain about hazardous goods in air cargo.

15. (a) Enumerate the operations of aircraft handling with cargo.

Or

(b) Explain briefly about airport cargo zone.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain in detail about MRP. DRP and JIT.

Or

(b) Explain in detail about alternative logistics.

17. (a) Explain in detail about supply chain management.

Or

(b) Enumerate air cargo tariff, rates and charges.

18. (a) Explain in detail about emerging trends in cargo and cargo carriers?

Or

(b) Explain in detail about environmental and marketing issues in logistics?

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C–8374	Sub. Code 97251

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fifth Semester

Aviation

PUBLIC RELATIONSHIP IN AVIATION INDUSTRY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is service?

2. List out the importance of service.

3. What are the different types of transport service?

4. Define Positioning.

5. What is Achievement in Public relation?

6. What is Customer service?

7. What is Crisis?

8. How do you attract your consumers?

9. What is prioritization?

10. Define Media handling.

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

Answer **all** questions

11. (a) Write about the importance of Service marketing.

Or

(b) Enumerate the scope of Relationship Marketing.

12. (a) Write in brief about the perspective of tourism.

Or

(b) Write about the role and importance of Transport in business.

13. (a) Elaborate the challenges that are faced in public relation.

Or

(b) What is Media Handling? List out its types?

14. (a) Brief out the ideas to overcome crisis in management.

Or

(b) List out dos and don'ts of media handling.

15. (a) What are the strategies of PR personnel?

Or

(b) Explain SWOT Analysis.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) What is the market plan? Explain its scope, types and features in detail.

Or

(b) Elaborate in detail about the 7Ps of marketing mix with examples.

17. (a) What are the 7c' s in travel service marketing and how it has an impact in business.

Or

(b) Define Market Positioning. Write in brief about the strategies and tactics to position your business.

18. (a) What are the steps in Public relation process and smart ways to approach crisis situations.

Or

(b) Write short notes on

(i) Credibility

(ii) Clout

(iii) Hospitality

(iv) Electronic media

(v) Persuasion.

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C–8375	Sub. Code 97252

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fifth Semester

Aviation

AIRCRAFT SYSTEM AND INSTRUMENTS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write the classification of shock absorbers?
2. List out the indications of hydraulic reservoir?
3. Write the significance of active control technology?
4. What is throttle control?
5. Write the purpose of heater in fuel system?
6. What is iso-propyl-nitrate starter?
7. Write the significance of evaporation air cycle system?
8. Define anoxia and its drawbacks?
9. What is role of accelerometer?
10. Write the types of pressure gauges used in aircraft?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write the role of actuators and its types used in aircraft hydraulic system?

Or

(b) Write the basic components of brake system and its functions?

12. (a) List out the various navigational inputs to auto pilot system.

Or

(b) Write the principles of wet type lubrication system of jet engine?

13. (a) Draw the fully powered flight control system and explain the components.

Or

(b) With simple sketch, write short notes on gravity feed fuel system?

14. (a) Write the principles of diluter demand oxygen system?

Or

(b) Write short notes on any types of fire protection system?

15. (a) What is Mach meter and its importance?

Or

(b) Write short notes on Turn-bank indicator?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Sketch and explain the typical hydraulic landing gear system.

Or

(b) Briefly explain about the digital fly by wire system with neat diagram.

17. (a) With neat sketch explain the boot-strap air cycle machine.

Or

(b) List out the types of aviation fuels? And list out the precautions to be observed while fuelling the aircraft?

18. (a) Write short notes on

(i) Pressure controller

(ii) Discharge valve

(iii) safety inward valve

Or

(b) Write the operating principles of altimeter and its types?

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C–8376	Sub. Code 97253

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fifth Semester

Aviation

AVIATION SECURITY AND SAFETY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Hijacking.
2. What are the responsibilities of CISF?
3. What is baggage screening at airport?
4. Define airport security?
5. What are the conditions for transport of weapon?
6. What will set off an airport metal detector?
7. Write the objectives of the Airport emergency plan?
8. List out some of the aerodrome emergencies?
9. List out the outcomes for Abnormal situation in flight?
10. What is the protocol for a plane hijacking?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on Airport Security Programs.

Or

(b) Write the Structure and organisation of CISF.

12. (a) Write short notes on use of CT scans for hand luggage screening

Or

(b) What do you understand the Checked baggage screening?

13. (a) Write short notes on latest screening technology.

Or

(b) Write short notes on General Escort Program Rules.

14. (a) Write the basic principles of metal detectors used in airport security.

Or

(b) List out the contents of airport emergency plan.

15. (a) List out the detecting persons responsible for bomb warnings.

Or

(b) List out the Emergency or abnormal situations in aerodrome.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) List out the functions of Airport systems in terms of Security by AAI.

Or

(b) List out the duties and responsibilities of director of air safety.

17. (a) Write the baggage tips for passengers traveling in Air-India.

Or

(b) List out the step-by-step instructions for Escort screening Courtesies.

18. (a) Write the actions considered by the aircraft operator in case of bomb threat.

Or

(b) List out the legislation for downing hijacked aircraft.

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C–8377	Sub. Code 97254

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fifth Semester

Aviation

RADIO AIDS AND INSTRUMENTS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. What fields are found in a radio wave?

2. What is the difference between radio frequency and audio frequency?

3. Define sky waves?

4. What is density?

5. Find the wavelength of a 100MHz wave?

6. What frequency range is utilized for VHF communication system?

7. When must a VOR accuracy test be performed?

8. What is the purpose of marker beacon system?

9. What is meant by the word radar?

10. What device serves as the indicator for a radar system?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Describe a radio wave.

Or

(b) Described about keying and side bands.

12. (a) Explain the different band of radio waves.

Or

(b) Explain briefly the dead space.

13. (a) Explain the factors affecting range of communication.

Or

(b) Explain the LF & HF of radio communication.

14. (a) Explain about the classification of bearing.

Or

(b) Compare the glide slope function of an ILS with the function of a localizer

15. (a) Describe the principle of operation for a secondary radar.

Or

(b) Describe the operation of a precision approach radar.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Briefly explain the operation of RMI.

Or

(b) Describe antennas for UHF systems.

17. (a) Explain the operation of radio altimeter.

Or

(b) Describe working principles of radio transmitter.

18. (a) Describe the NDB.

Or

(b) Discuss about the PM and CW.

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C–8378	Sub. Code
	97255

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fifth Semester

Aviation

TOTAL QUALITY MANAGEMENT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. What are elements of TQM?

2. What do you mean by service quality?

3. List four common barriers to team progress.

4. What is performance appraisal and what is the use of performance?

5. What is meant by Failure Mode and Effect Analysis?

6. What are the benefits of bench marking?

7. Difference between Taguchi's approach and traditional approach?

8. Define TPM.

9. What are objectives of ISO 9000 Quality Standards?

10. What is Third Party Audit?

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

Answer **all** questions.

11. (a) Explain dimensions of service quality.

Or

(b) What are Juran's 10 steps for quality improvement?

12. (a) Write short note on seven steps of strategic planning cycle.

Or

(b) What are the needs as per Maslow's need hierarchy theory?

13. (a) What are the types of FMEA?

Or

(b) Write about the types Based on the organizations against whom one is benchmarking.

14. (a) What are the five goals of TPM?

Or

(b) Explain the types and the analysis techniques of Cost of Quality.

15. (a) Discuss the benefits of ISO 9000 certification.

Or

(b) What are the types of audits?

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

Answer **all** questions.

16. (a) What is 5S? Explain all the elements of 5S principle in detail.

Or

(b) Write the fourteen steps of Deming's philosophy for improving quality, productivity and competitiveness.

17. (a) Describe the characteristics of a successful team.

Or

(b) Explain about the traditional tools of quality.

18. (a) Explain in detail about bench marking process.

Or

(b) Discuss the techniques for presenting performance measures.

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C–8379

Sub. Code
97261

B.Sc. DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Aviation

FLIGHT OPERATION

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is DGCA?
2. Who is flight dispatcher?
3. Define Dead Heading.
4. Define Overfly permission.
5. Define ATR.
6. Mention any two unique specifications of Airbus A320.
7. Define Navigation.
8. What is NOTAM?
9. Define weather chart.
10. What is called ETOPS?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain in detail about crew salary structure.

Or

(b) What is Landing slot arrangement? Briefly explain.

12. (a) Explain in detail about Aircraft Operational Procedure.

Or

(b) Explain the role of Flight dispatcher in flight operations.

13. (a) List out the types of aircrafts based on its weight.

Or

(b) What are the limitations in Flight Operations?

14. (a) Explain the importance of weight and balance in Flight Operations.

Or

(b) Explain Navigation Log. How to maintain it for operations?

15. (a) Explain in detail about filing flight plan to ATC.

Or

(b) What are the methods of flight planning? Explain all of them.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain Competency check and Regency check in flight operations.

Or

(b) Explain the role of flight dispatcher and the training programs related to the role.

17. (a) Explain in detail about Hotel and Ground Transportation.

Or

(b) Explain Navigation Plan and Navigation log in detail.

18. (a) What is called load manifest form? Brief it clearly.

Or

(b) Explain in detail about advanced flight operation knowledge.

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C–8380	Sub. Code
	97262

B.Sc. DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Aviation

PRINCIPLES OF ROTORCRAFT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Helicopter as an Aircraft.

2. Differentiate Feathering & Flapping in helicopter.

3. Define Airfoil.

4. What is called parasite drag?

5. Define SAS.

6. What is called rate of climb?

7. Define stability of helicopter.

8. Differentiate stick fixed and stick free stability.

9. What is called flapping motion in helicopter?

10. What are called vibration absorbers?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Draw the layout of a helicopter and name the parts clearly.

Or

(b) Explain Power Losses and Rotor Efficiency in detail.

12. (a) How State Vortex Ring is a negative effect in helicopters? Clarify.

Or

(b) Explain High Speed Limitation in helicopter.

13. (a) Explain the working of Turbo-Shaft Engine in detail.

Or

(b) How to calculate the Horse Power required for a helicopter?

14. (a) Differentiate stability of Airplane and helicopter.

Or

(b) How to measure vibration of blades in helicopter?

15. (a) Explain the properties of Vibrating Systems.

Or

(b) What are the characteristics of Lateral stability of helicopter?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Briefly explain Generation of lift in helicopter with suitable diagrams.

Or

(b) Explain AFCS of helicopter in detail.

17. (a) Explain the following in detail :

(i) Induced Power

(ii) Ground Effect

(iii) Power Leading.

Or

(b) What are the types of Gas Turbine Engine? Explain them in detail.

18. (a) Explain in detail about the Stability Augmentation System in helicopter.

Or

(b) Explain stick fixed and stick free stability of helicopter.

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C–8381	Sub. Code
	97263

B.Sc. DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Aviation

PERSONALITY DEVELOPMENT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is observation?

2. Define listening.

3. What is personal goal?

4. What is empathy?

5. Define management.

6. What is motivation?

7. What is effective preparation?

8. What is time management?

9. Define seminar.

10. Define soft skill.

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

Answer **all** questions.

11. (a) Explain the positive outlook.

Or

(b) Explain the barriers of communication.

12. (a) Explain seven steps to success at an Interview.

Or

(b) Explain methods of measuring emotional competency.

13. (a) What is time management and importance of time management?

Or

(b) Explain how to improve your management skills.

14. (a) Explain the three steps for effective follow-up.

Or

(b) What is thankyou letter and importance of thankyou letter?

15. (a) What is grooming and importance of grooming?

Or

(b) Explain in detail about Group Discussion.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain the ten blocks affect the creativity.

Or

(b) Explain briefly types of communication.

17. (a) Explain the mock interviews and its benefits.

Or

(b) Explain seven steps to success at an Interview.

18. (a) Explain to leadership qualities.

Or

(b) What is group discussion? And how to prepare in group discussions?

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C–8382	Sub. Code
	97231

B.Sc. DEGREE EXAMINATION, APRIL 2023

Third Year

Aviation

COMPUTER APPLICATION

(2017 onwards)

Duration: 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Mention the applications of computers.

2. Write the names of any four Operating Systems.

3. Write down the commands to copy and paste in MS-WORD.

4. What is called web browser?

5. What is called pixel?

6. How will you paint a picture in coreldraw?

7. What is EEPROM?

8. What is the job of a scanner?

9. Write down the names of various networking topologies.

10. What is the difference between bridge and router?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Briefly describe the components of a computer system.

Or

(b) Explain the functions of OS.

12. (a) How will you insert bullets and numbers in MS-WORD? Explain the steps.

Or

(b) Explain the steps for slide transition in PowerPoint presentation.

13. (a) Discuss the features of Adobe software.

Or

(b) Explain the various effects that can be produced in coreldraw.

14. (a) Write about different types of motherboards.

Or

(b) Explain the BIOS setup in detail.

15. (a) Write about straight through and cross over cabling.

Or

(b) Explain the working of routers.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) List and explain the features of different types of OS.

Or

(b) Describe the Edit menu in MS-WORD.

17. (a) Explain the features of spreadsheet package.

Or

(b) Compare the features of Intel Pentium IV, Dual Core, Core 2 Duo and Quad processor.

18. (a) Explain the various transmission media and methods of communication.

Or

(b) Discuss on:

(i) IP addressing

(ii) MAC address and Subnet.

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C–8383

Sub. Code
97232

B.Sc. DEGREE EXAMINATION, APRIL 2023

Third Year

Aviation

FLIGHT OPERATION

(2017 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Explain about Flight Operations.
2. What is Recency Check?
3. What is Flight Duty Time?
4. What is Landing Slot Arrangement?
5. What is Cabin Data?
6. What is Performance Data?
7. Define NOTAM.
8. What is Trip Fuel?
9. What is Load Manifest Form?
10. Expand PBN and RNAV.

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

Answer **all** questions.

11. (a) What is the process of Flight Dispatching? Explain roles and functions of a Flight Dispatcher.

Or

(b) Explain about training programs for Flight Dispatcher.

12. (a) Explain about Crew Scheduling.

Or

(b) What is Over Fly Permission?

13. (a) Give specifications of B737-800 (Boeing).

Or

(b) Write about the specifications of Airbus A320.

14. (a) Explain about Weather Charts.

Or

(b) Explain about Jet routes and Navigation Log.

15. (a) Explain about computerized Flight Plans.

Or

(b) Explain about Flight Plans exercises conducted using Performance Data.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain in detail about Aircraft Operational Procedures in India.

Or

(b) Explain about Crew Salary Structure in detail for Pilots and Cabin Crew.

17. (a) Explain about Methods and objects of Flight Planning in detail.

Or

(b) Give Specifications of Cessna Aircrafts and mention to explain its types in detail.

18. (a) Explain about Advanced Flight Operation Knowledge in detail.

Or

(b) Explain in detail about :

(i) Layover.

(ii) Dead Heading.

(iii) Split Duty.

(iv) Breaks.

(v) Consecutive Night Flying.

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C–8384	Sub. Code
	97233

B.Sc. DEGREE EXAMINATION, APRIL 2023

Third Year

Aviation

AVIATION SECURITY AND SAFETY

(2017 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Expand FAA

2. Explain about CISF functions

3. What are the different types of baggage?

4. What are In-flight Threats?

5. How is hijacking dealt with?

6. How is a hostage situation negotiated?

7. What is an Improvised Explosive Device?

8. What are the rules necessary to be followed to carry weapons on board an aircraft?

9. What is screening process followed for baggage?

10. How are threats managed in an airport?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What is the role of CISF in Indian Aviation?

Or

(b) What are the security measures taken before boarding a Plane?

12. (a) Explain the nature of Bomb Threats at Airports.

Or

(b) What is the procedure to Handle Special Passengers?

13. (a) Explain about Fencing. Why is it needed at Airports.

Or

(b) What are handheld Metal Detectors and Door Frame Metal Detectors?

14. (a) Explain about Weapon Handling. What are the documents required before boarding a Flight.

Or

(b) What are the technologies used for Cargo Screening at Airports?

15. (a) Explain about Airport Enforcement Authority.

Or

(b) Write short notes on

(i) Catering Security Measures.

(ii) Baggage Screening

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) What is Aviation Security? Give notes on its functions and its structure.

Or

(b) What is the difference of security measures followed by FAA and Ministry of Civil Aviation?

17. (a) What is Cargo Screening? Explain about equipment used for Security Checks.

Or

(b) What are Explosives Threats at Airports? Explain about lED and IBD in detail.

18. (a) What are airport Metal Detectors? Explain about its types, functions and advancements?

Or

(b) Write detailed notes on

(i) Ministry of civil aviation

(ii) BCAS

(iii) BDDS

(iv) CAA

C–8385	Sub. Code
	97234

B.Sc. DEGREE EXAMINATION, APRIL 2023

Third Year

Aviation

AIRCRAFT SYSTEMS AND INSTRUMENTS

(2017 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. What are the types of Hydraulic Fluids?
2. Write a note on Brake De-Booster Valve.
3. What is a need for Artificial feel System?
4. Differentiate between Fly By Wire and Conventional System.
5. What is the difference between Supercharger and Turbo Charger?
6. What are the different types of Starters used in Aircraft Reciprocating Engine?
7. What is the effect of Lower Air Pressure for humans at High Altitudes?
8. What the requirements are for Overheat and Fire Protection System?
9. What is the principle of VSI?
10. What is Precession in the case of Gyro?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain Types of Sequence Valve Operations.

Or

(b) Explain Types of Power Pumps.

12. (a) Define Autopilot System and explain its principles of operation and its purpose.

Or

(b) Why pressurized Reservoirs are used in aircraft? Explain with neat sketch in brief.

13. (a) Explain Starting sequence of a Gas Turbine Engine.

Or

(b) What are the types of Lubrication System used in an Aircraft? Explain.

14. (a) Explain about basic Air Cycle Systems.

Or

(b) Explain about Fire Protection Systems used in an Aircraft.

15. (a) Explain briefly about Gyroscopic Flight Instruments: Attitude Indicator.

Or

(b) Write in detail about the working of Oil Pressure Indicator.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) With a neat sketch, explain Hydraulic System used in a modern Jet Aircraft.

Or

(b) Explain with neat sketches the working of the Air-Oleo and Spring-OleO Shock Struts of the Aircraft Landing Gear.

17. (a) With a neat sketch, explain about Power Assisted and Fully Powered Flight Controls.

Or

(b) Explain the working of Battery Ignition and Magneto Ignition Systems with neat diagram.

18. (a) Explain in detail about Boot Strap Air Cycle Systems.

Or

(b) Explain in detail about Tachometers, Pressure and Temperature Gauges.

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C–8386	Sub. Code
	97235

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Third Year

Aviation

RADIO AIDS AND INSTRUMENTS

(2017 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Frequency.

2. What is the meant by amplitude?

3. Define ground waves.

4. What is multihop refraction?

5. Define localizer.

6. What are the advantages of MLS?

7. What are the characteristics of ADF?

8. What are the applications of radar?

9. What is a radome?

10. What are the uses of PAR?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Derive a relationship between wavelength and frequency.

Or

(b) Describe the types of modulation.

12. (a) Name different band of radio waves. Brief it.

Or

(b) Explain the Critical angle.

13. (a) Explain the principle and working operation of DME.

Or

(b) Explain the principle and working operation of ADF.

14. (a) Explain the function of primary radar.

Or

(b) Discuss the working operation of MLS.

15. (a) Explain in detail about Airport Surveillance Radar.

Or

(b) Describe working principles of Airborne weather radar.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss about fading with suitable examples.

Or

(b) Explain briefly with suitable sketch of Instrument Landing System.

17. (a) Describe the Radio Spectrum.

Or

(b) Explain with necessary diagram, the operation of Secondary Surveillance Radar.

18. (a) Explain the performance characteristics of VOR.

Or

(b) State the importance of RADAR.

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C–8387	Sub. Code
	97236

B.Sc. DEGREE EXAMINATION, APRIL 2023

Third Year

Aviation

AVIATION COMMUNICATION

(2017 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define ATS.

2. What is Message Elements Status?

3. What is GSM?

4. What is Wireless Cabin?

5. List out the prefix used for communicating emergency situation to ATC.

6. List out three circumstances where loss of communication incidents occur.

7. What is a Call Sign Number?

8. What are the two types of aeronautical fixed station used by AFTN?

9. What is an Aeronautical Station?

10. What is AMHS?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a short note on air to ground communication.

Or

(b) List out the suffix that is used to indicate the type of flight service provided.

12. (a) Write a short notes on communication procedures during meteorological conditions.

Or

(b) Write a short notes on communication during Aircraft Landings.

13. (a) Write a short notes on controller response to emergency situation.

Or

(b) Write a short notes on communication procedures when an aircraft is lost.

14. (a) Explain about UNICOM.

Or

(b) Write a short notes on ACARS.

15. (a) Explain the types of an Aircraft Call Sign.

Or

(b) Explain about Aircraft Movement Message.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail

(i) Aviation phraseology

(ii) Morse code

Or

(b) Write a short note on

(i) The phonetic alphabets used in aviation

(ii) Communications in an aviation company

17. (a) Explain in detail about communication during aircraft starting procedures and push – back procedures.

Or

(b) Explain briefly about the communications during flight emergencies due to animal - caused hazards and fires.

18. (a) Explain briefly about the communications during decompressions and other emergencies.

Or

(b) Explain briefly about the communications procedure when someone is having medical emergency on board.

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C–8388	Sub. Code
	97237

B.Sc. DEGREE EXAMINATION, APRIL 2023

Third Year

Aviation

PRINCIPLES OF ROTORCRAFT

(2017 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. List out the various types of Rotor Configuration.

2. What are the Flight Conditions of Helicopter?

3. Define Mean Camber Line of an Airfoil.

4. Define Coriolis Effect.

5. What is the function of Anti torque control?

6. What is Balancing of Helicopter?

7. List out the types of Gas Turbine Engines.

8. Compare Fixed Wing versus Helicopter Power.

9. What is the purpose of VHM system?

10. What are the possible forms of Dynamic Instability?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about Flight Condition of Helicopter.

Or

(b) Explain about Forces Acting on Helicopter with neat diagram.

12. (a) Explain in detail about Torque reaction and Directional Control with neat diagram.

Or

(b) Explain about Blade Stall of a Helicopter.

13. (a) Write short notes on Rigging of Helicopter.

Or

(b) Explain about Balancing of Helicopter.

14. (a) Write short notes on Stability Augmentation System (SAS).

Or

(b) Explain about Helicopter AFCS and Flight Detector System.

15. (a) What is Helicopter Vibration? What are the issues caused by Helicopter Vibration?

Or

(b) Explain in detail about Longitudinal Dynamic Stability.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain with neat diagram of Layout of Helicopter.

Or

(b) With neat diagram. explain about Generation of Lift.

17. (a) Explain about Airfoil section and explain in brief about each section.

Or

(b) Explain with neat diagram, about Swash Plate.

18. (a) Explain in detail about Control Surface Actuation system of a Helicopter.

Or

(b) Explain in detail about functions of main Gear Box and Drive System of a Helicopter with neat sketch.

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C–8389	Sub. Code
	97238

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Third Year

Aviation

YOGA FOR HUMAN EXCELLENCE

(2017 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define Yoga.

2. Write any two objectives of yoga.

3. Write any two Asana name.

4. Define Dhyana

5. Write any two sitting Asanas name.

6. Write the benefit of vajrasana

7. What is Kriya?

8. What is Bandha?

9. Define meditation.

10. What is Vallalar meditation?

Part B

$(5 \times 5 = 25)$

Answer **all** the questions.

11. (a) Explain the objectives of yoga

Or

(b) Describe yoga with Buddhism.

12. (a) Explain Karma yoga.

Or

(b) Explain in details about importance of Dharana.

13. (a) Write the benefits of physical exercises.

Or

(b) Explain the importance of yoga in physical education.

14. (a) Explain the types of Asanas.

Or

(b) What is Trataka? Mention its benefits.

15. (a) Describe tamil siddha meditation in brief.

Or

(b) Explain the types of pranayama.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Describe the patanjalis yoga sutra in brief.

Or

(b) Explain patanjalis eight limb of yoga.

17. (a) Explain the difference between yogasanas and physical exercises.

Or

(b) Explain the methods of teaching yogic techniques.

18. (a) What is Bandha? Explain the types and benefits.

Or

(b) Describe different schools of meditation.

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