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Phase of Operation	Description	Actors (Major)	Charts and Procedures used
1. Flight-crew Sign-in	<ul style="list-style-type: none"> <li>● 1 hour before flight</li> <li>● Crew member introductions</li> <li>● Planning tasks</li> </ul>	Captain F/O Cabin crew	Not applicable
2. Operations Planning	<ul style="list-style-type: none"> <li>● Dispatchers (planning, flight following)</li> <li>● Generates a flightplan (fuel critical)</li> </ul>	Dispatcher Captain, F/O	Departures, Enroute, STAR, Approach
3. Pre-flight	<ul style="list-style-type: none"> <li>● Airworthiness of aircraft (inspections)</li> <li>● Check manuals and paperwork</li> <li>● Minimum Equipment List (MEL)</li> <li>● Flight Management System Initialization</li> </ul>	Captain, F/O	None
4. Pre-departure	<ul style="list-style-type: none"> <li>● Finalize flightplan and takeoff procedures</li> <li>● Double check fuel and flightplan (make updates as needed)</li> <li>● Gate Hold or Expected Departure time</li> <li>● "Before Starting Engines Checklist"</li> <li>● Fasten Seat Belt Sign (t-10)</li> <li>● Close aircraft doors</li> <li>● Close cargo doors</li> <li>● External power removed</li> <li>● Tug is connected</li> <li>● Checklist "just prior to pushback"</li> <li>● Arm escape slide</li> </ul>	Captain, F/O Lead gate agent Ground crew ATC Ramp Controller	None
5. Gate Departure	<ul style="list-style-type: none"> <li>● Gate agent moves jetbridge</li> <li>● Ground crew removes wheel chocks</li> <li>● Parking brake release</li> <li>● F/O call Ramp Control for clearance</li> <li>● When clearance is received, and ground crew confirm "area clear," aircraft pushed back out of gate</li> <li>● Engines started</li> <li>● (Deicing completed before engine start)</li> </ul>	Captain, F/O Lead gate agent Ground crew ATC Ramp Controller	Airport Diagram/Taxiway Charts

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	<ul style="list-style-type: none"> <li>• Tug bar removed</li> <li>• Captain and Tug operator confirm hand-off</li> </ul>		
6. Taxi-out	<ul style="list-style-type: none"> <li>• F/O contract Ramp/Ground Control for taxiway instructions</li> <li>• “Load closeout”</li> <li>• Takeoff performance finalized</li> <li>• Takeoff briefing</li> <li>• Steer with Tiller and thrust</li> </ul>	Captain, F/O Ramp/Ground Control	Airport Diagram Taxi-way Diagrams
7. Takeoff	<ul style="list-style-type: none"> <li>• Local controller “position and hold” clearance</li> <li>• Takeoff clearance</li> <li>• Pilot Flying/Pilot not Flying</li> <li>• Contact TRACON controller</li> </ul>	Captain, F/O Local controller	
8. Terminal Area Departure	<ul style="list-style-type: none"> <li>• 250 knots below 10,000 ft MSL.</li> <li>• Contact Enroute Controller</li> </ul>	Captain, F/O TRACON controller	Departure Procedures
9. Climb	<ul style="list-style-type: none"> <li>• Economic climb airspeed/Mach above 10,000 to Crz FI</li> <li>• Contact next Enroute Controller</li> </ul>	Captain, F/O ARTCC Controller	Enroute charts
10. Cruise	<ul style="list-style-type: none"> <li>• Econ Cruise Mach</li> <li>• Time/fuel log</li> <li>• Contact next Enroute Controller</li> </ul>	Captain, F/O ARTCC Controller	Enroute Charts
11. Descent	<ul style="list-style-type: none"> <li>• Top-of-Descent</li> <li>• Descent checklist</li> <li>• ATC crossing restrictions</li> <li>• Idle thrust (3 nm for every 1000’ descent)</li> <li>• Approach briefing</li> <li>• Prepare cabin/galley for landing</li> <li>• Contact TRACON Controller</li> </ul>	Captain, F/O ARTCC Controller	Standard Terminal Arrival Route (STAR)
12. Terminal Area Arrival	<ul style="list-style-type: none"> <li>• 250 knots below 10,000ft</li> <li>• STAR + Radar vectors</li> <li>• Initial and Intermediate Approach fixes</li> <li>• Contact Local Controller</li> </ul>	Captain, F/O TRACON controller	Approach Chart
13. Final Approach	<ul style="list-style-type: none"> <li>• Precision vs Non-precision Approaches</li> <li>• Wake vortex separation</li> <li>• Go Around/Missed Approach</li> </ul>	Captain, F/O Local controller	Approach Chart
14. Landing and Rollout	<ul style="list-style-type: none"> <li>• Reverse thrust + Ground Spoilers + Wheel Braking</li> <li>• High speed turnoffs for min Runway Occupancy Time</li> <li>• Contact Ground Control</li> </ul>	Captain, F/O Local/Ground/Ramp Control	Airport Diagram
15. Taxi-in	<ul style="list-style-type: none"> <li>• Steer with Tiller and thrust</li> </ul>	Captain, F/O Ramp/Ground	Airport Diagram Taxiway diagram

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		Control	
16. Parking	<ul style="list-style-type: none"><li>• Gate In</li><li>• Connect Ground Power or APU</li><li>• Engine shutdown Checklist</li><li>• Disarm Doors checked</li><li>• Unload and process cargo</li><li>• Post-flight walk-around</li></ul>	Captain, F/O	None
17. Post-flight	<ul style="list-style-type: none"><li>• Debrief reports for emergencies and abnormal.</li><li>• Aircraft "turn-around"</li></ul>	Captain, F/O Ground crews	None

Typical exam questions:

1. Put the phases of operation (listed below) in order of a typical flight
2. Which phase is the Ground Power or APU connected?
3. Which phase of flight is considered the busiest? Explain.
4. Which phase of flight uses Approach Charts?
5. Which phases of flight uses Enroute Charts?
6. Which phases of flight use Departure Procedures?
7. Which phase of flight are the "Doors Disarmed"?
8. Which phase of flight are the "Doors armed" Why are doors "armed"?
9. Which Air Traffic Controller is responsible for the flight during the Final Approach phase of flight.