



PUNJAB PUBLIC SERVICE COMMISSION

BARADARI GARDEN, PATIALA- 147001

WEBSITE : <http://ppsc.gov.in>

PUBLIC NOTICE

RECRUITMENT TO 01 POST OF TECHNICAL ASSISTANT (GROUP-B) IN THE DEPARTMENT OF CIVIL AVIATION, GOVERNMENT OF PUNJAB

1. With reference to advertisement No. 202211 published on 28.05.2022 for the ibid post, the commission has decided to **revise pattern and the syllabus** for the ibid post.
2. The **revised pattern** for the written competitive examination as mentioned in clause 6.2 of "General Information for the candidates" shall be as follows:

Sr. No.	Topic	No. of Questions	Marks (Each Question carries 4Marks)	Type of Questions
1	Questions from the subject (Part A of Syllabus)	90	360	MCQs (Multiple Choice Questions)
2	Questions from General Knowledge & Current Affairs (Part B of Syllabus)	10	40	
3	Questions from General Mental Ability, Logical Reasoning & Quantitative Aptitude (Part C of Syllabus)	10	40	
4	Punjabi (Part D of Syllabus)	10	40	
	Total	120	480	

3. The revised syllabus for the ibid posts is annexed as **Annexure –A.**
4. The Procedure of Selection will remain same as mentioned in Clause 6.1 of the General Information.
5. All other conditions such as reservation of the post, age, eligibility, essential qualification, etc. of the advertisement shall remain same as mentioned in "General Information for the Candidates".

Dated : 31.03.2023

Sd/-
Secretary (Examinations)
Punjab Public Service Commission
Patiala

SYLLABUS
PART-A (SUBJECT)

1. Electrical Fundamentals

DC Circuits: Network graph, KCL, KVL, node and mesh analysis: Transient response of dc and ac networks: Sinusoidal steady-state analysis, resonance, basic filter concepts: Ideal current and voltage sources. Average, root mean square, peak, peak to peak current values and calculations of these values, in relation to voltage, current and power; Power dissipation in L, C and R circuits; Impedance, phase angle, power factor and current calculations.

Transformer: Transformer construction principles and operation; Transformer losses and methods for overcoming them; Transformer action under load and no-load conditions; Calculation of line and phase voltages and currents; Calculation of power in a three phase system.

DC Motor/Generator Theory :- Basic motor and generator theory; Operation of, and factors affecting output power, torque, speed and direction of rotation of DC motors; Series wound, shunt wound and compound motors.

AC Generators/ AC motors:- Three phase star and delta connections. Construction, principles of operation and characteristics of: AC synchronous and induction motors both single and polyphase.

2. Aerodynamics

Airflow around a body. Boundary layer, laminar and turbulent flow, free stream flow, relative airflow, upwash and downwash, vortices, stagnation;

The terms: camber, chord, mean aerodynamic chord, profile (parasite) drag, induced drag, centre of pressure, angle of attack, wash in and wash out, fineness ratio, wing shape and aspect ratio;

Thrust, Weight, Generation of Lift and Drag: Angle of Attack, Lift coefficient, Drag coefficient, polar curve, stalls;

Longitudinal, lateral and directional stability (active and passive).

3. Electronics Fundamental and Digital Techniques

Diodes and its types. Silicon controlled rectifier. Transistors and its characteristics. Description and operation of logic circuits and linear circuits/operational amplifiers. Principles of operation and use of the following synchro system components/features: resolvers, differential, control and torque synchro.

ECAM-Electronic Centralized Aircraft Monitoring

EFIS-Electronic Flight Instrument System

GPS-Global Positioning System

TCAS-Traffic Collision Avoidance system

Special handling of components sensitive to electrostatic discharges; Awareness of risks and possible damage, component and personnel anti-static protection devices.

4. Material and Hardware

Characteristics, properties and identification of common alloy steels used in aircraft; Heat treatment and application of alloy steels; Identification of common composite and nonmetallic materials, other than wood, used in aircraft; Sealant and bonding agents.

The detection of defects/deterioration in composite and non-metallic material. Types of fabrics used in aeroplanes and defects in fabric. General understanding of Bolts, studs and screws locking devices and aircraft rivets.

5. Gas turbine Engine/ Piston engine

Compressors: - Axial and centrifugal types;

Fan balancing; Compressor stall and surge; Methods of air flow control: bleed valves, variable inlet guide vanes, variable stator vanes, rotating stator blades; Compressor ratio. Operation and characteristics of different turbine blade types; Operation of engine start systems and components; Ignition systems and components.

Operating principles — 2 stroke, 4 stroke, Otto and Diesel piston engine

Engine Construction Crank case, crank shaft, cam shafts, sumps; Accessory gearbox;

Cylinder and piston assemblies;

Operation of Supercharging/Turbocharging

6. Propeller

High/low blade angle, reverse angle, angle of attack, rotational speed; Propeller slip;

Materials used in wooden, composite and metal propellers; Blade station, blade face, blade shank, blade back and hub assembly;

Fixed pitch, controllable pitch, constant speeding propeller;

Propeller Synchronizing. Propeller Ice Protection. Static and dynamic balancing; Blade tracking;

7. Instrument Systems (ATA 31)

Pitot static: altimeter, air speed indicator, vertical speed indicator;

Gyroscopic: artificial horizon, attitude director, direction indicator, horizontal situation indicator, turn and slip indicator, turn coordinator; Compasses: direct reading, remote reading;

Lights (ATA 33): External: navigation, anti-collision, landing, taxiing, ice; Internal: cabin, cockpit, cargo; Emergency.

8. Aircraft Maintenance, Requirements Section 2

a) Role of International Civil Aviation Organization; The Aircraft Act and Rules made there under Role of the DGCA; Relationship between CAR-21, CAR-M, CAR-145, CAR-66, CAR-147

The Aircraft Rules (Applicable to Aircraft Maintenance and Release)

Permit to fly requirements

b) Documents-

Certificate of Airworthiness;

Certificate of Registration;

Noise Certificate;

Weight Schedule;

Radio Station License and Approval.

9. Human Factors

a) Human Performance and Limitations

Vision; Hearing; Information processing; Attention and perception;

b) Social Psychology

Motivation and de-motivation; Peer pressure; 'Culture' issues; Team working; Management, Supervision and leadership

c) Factors Affecting Performance

Fitness/health; Stress: Domestic and work related; Time pressure and deadlines; workload: overload and under load; Sleep and fatigue, shift work; Alcohol, medication, drug abuse

d) Human Error

Error models and theories; Types of error in maintenance tasks; Implications of errors (i.e. accidents) Avoiding and managing errors

e) Hazards in the Workplace

Recognizing and avoiding hazards

PART-B

General Knowledge & Current Affairs

General Knowledge and Current affairs of National and International importance including:

(i) Economic issues

(ii) Polity issues

(iii) Environment issues

(iv) Science and Technology

(v) Any other current issues

(vi) (a) History of India with special reference to Indian freedom struggle movement

(b) History of Punjab- 14th century onwards

PART-C

General Mental Ability, Logical Reasoning & Quantitative Aptitude

(i) Logical reasoning, analytical and mental ability, etc.

(ii) Basic numerical skills, numbers, magnitudes, percentage, numerical relation appreciation, etc.

(iii) Data analysis, Graphic presentation charts, tables, spreadsheets, etc.

PART-D (PUNJABI)

1. ਬਹੁਅਰਥਕ ਸ਼ਬਦ, ਵਿਰੋਧਾਰਥਕ ਸ਼ਬਦ, ਸਮਾਨਾਰਥਕ ਸ਼ਬਦ ਅਤੇ ਬਹੁਤੇ ਸ਼ਬਦਾਂ ਦੀ ਥਾਂ ਇੱਕ ਸ਼ਬਦ।
2. ਪੰਜਾਬੀ ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ।
3. ਸ਼ੁੱਧ ਅਸ਼ੁੱਧ, ਸ਼ਬਦ ਜੋੜ।
4. ਸ਼ਬਦ ਦੇ ਭੇਦ।
5. ਅਗੇਤਰ/ਪਿਛੇਤਰ।
6. ਲਿੰਗ ਅਤੇ ਵਚਨ ਬਦਲੇ।
7. ਵਿਸ਼ਰਾਮ ਚਿੰਨ੍ਹ।
8. ਵਿਆਕਰਨ।
9. ਅੰਗਰੇਜ਼ੀ ਸ਼ਬਦਾਂ ਅਤੇ ਵਾਕਾਂ ਦਾ ਪੰਜਾਬੀ ਵਿੱਚ ਸ਼ੁੱਧ ਰੂਪ।
10. ਅੰਕਾਂ, ਮਹੀਨੇ, ਦਿਨਾਂ ਦਾ ਸ਼ੁੱਧ ਪੰਜਾਬੀ ਰੂਪ।
11. ਭਾਸ਼ਾ ਅਤੇ ਪੰਜਾਬੀ ਭਾਸ਼ਾ।
12. ਸ਼ਬਦ ਬੋਧ।
13. ਪੰਜਾਬ ਦੇ ਇਤਿਹਾਸ ਨਾਲ ਸਬੰਧਤ ਪ੍ਰਸ਼ਨ।
14. ਪੰਜਾਬ ਦੇ ਮੇਲੇ, ਤਿਉਹਾਰ ਅਤੇ ਸਭਿਆਚਾਰ ਨਾਲ ਸਬੰਧਤ ਪ੍ਰਸ਼ਨ।
15. ਅਣਡਿੱਠੇ ਪੈਰੇ ਵਿੱਚੋਂ ਪ੍ਰਸ਼ਨ।