UPKAR'S

AIRPORTS AUTHORITY OF INDIA

MANAGER (ATC & Electronics)

Jr. EXECUTIVE (ATC)

Sr. ASSISTANT (Electronics)

EXAMINATION

Ashish Dixit

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(Synopsis, Multiple Choice Questions and their Explanatory Notes)

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Contents

General Information

● QUALIFICATION & EXPERIENCE

1. Manager (ATC)

Qualification : Engineering Degree in Electronics / Telecommunication / Radio Engineering / IT/ Electrical with Specialization in Electronics with 1st Class (60%) **OR** M.Sc Degree or its equivalent with Wireless Communication, Electronics, Radio Physics or Radio Engineering as a special Subject with 1st Class (60%) **OR** Post Graduate Degree in Physics / Mathematics/ Computer Science or equivalent with 1st Class (60%).

Experience : Two years work experience after obtaining degree in relevant discipline / field.

2. Manager (Electronics)

First Class Engineering Degree (BE/B.Tech) in Electronics / Telecommunication /Electronics and Communication from a recognized University / deemed University **OR** Passed in First class Section A & B of the Institution Examination (Electronics and Telecommunication of the Institution of Engineers (India) **OR** Passed in First class Graduate Membership Examination of the Institute of Electronics and Telecommunication Engineers (India).

Note : *First class means first class/Division with 60% or above marks).*

Experience :- Two years Work experience in relevant discipline / field (after obtaining degree).

3. Jr. Executive (ATC)

Engineering Degree in Electronics / Telecommunication / Radio Engg. /IT/ Electrical with Specialization in Electronics with 1st Class **(50% for SC/ST) OR** M.Sc Degree or its equivalent with Wireless Communication, Electronics, Radio Physics or Radio Engg. as a special Subject with 1st Class **(50% for SC/ST) OR** Post Graduate Degree in Physics / Mathematics/ Computer Science or equivalent with 1st Class **(50% for SC/ST).**

4. Sr. Assistant (Electronics)

Diploma in Electronics/Telecommunication/Radio Engineering. (3 years course) from a recognized institute.

● AGE LIMIT

1. Below 32 years. For Manager (ATC)/Manager (Electronics).
2. Below 27 years for Jr. Executive (ATC).
3. Below 30 years for Sr. Assistant (Electronics).

Note : *Age relaxation will be allowed as per Govt. rules.*

SELECTION PROCESS

The selection shall be made on the basis of a written test/interview for the post of Managers/Jr. Executive and for Sr. Asstt. (Electronics). Voice Test to be conducted for Manager (ATC) & Jr. Executive (ATC) at the time of interview.

GENERAL INSTRUCTIONS

1. Before applying for the post, the candidate should ensure that he/she fulfils the eligibility and other norms mentioned in the Advertisement. He/She may cross-check the information furnished in the application form before finally submitting the same as no correction would be possible later.
2. The selected candidates for the posts of Manager (ATC) / Manager (Electronics) will have to undergo training upto one year and for Jr. Executive (ATC) for 6 months during which they will be paid Basic Pay alongwith other admissible allowances attached to the scale of Manager and Jr. Executives. Candidates selected for the post of Sr. Asstt. (Electronics) shall be paid a consolidated stipend during the training period (upto 6 months).
3. The candidates selected for the post of Manager (ATC)/Manager (Electronics) shall have to execute a Security Bond for an amount of Rs. 6.00 Lacs to serve the Authority for a period of 3 years after completion of training.
4. The candidates selected for the post of Jr. Executive (ATC) shall have to execute a security bond for an amount of Rs. 3.00 Lacs to serve the Authority for a period of 3 years after completion of training.
5. The candidates selected for the post of Sr. Asstt. (Electronics) shall have to execute a security bond for an amount of Rs.1.00 Lac to serve the Authority for a period of 2 years after completion of training.
6. Besides basic pay DA, CCA, HRA other benefits such as Medical, LTC, Leave Encashment, Gratuity, PF, etc. admissible as per AAI rules also will be paid.
7. Selected candidates are liable to be posted anywhere in India.
8. Employees of Govt. / Public Sector Undertaking should produce NOC at the time of interview.
9. The written test will be held at Delhi / Mumbai / Kolkata / Chennai / Guwahati / Allahabad/ Ahmedabad / Hyderabad / Nagpur and Thiruvananthapuram. The number of centres can be reduced or increased depending upon number of candidates and in that case the candidates will be asked to appear other than centre specified by him/her.
10. Decision of AAI in all matters regarding eligibility of the candidate, the stages at which such scrutiny of eligibility is to be undertaken, the documents is to be produced for the purpose of the conduct of the examination, interview, selection and any other matter relating to recruitment will be final and finding on the candidate. Management reserves the right to fix the standard specifications for screening the applications so as to restrict the number of candidates to be called for written test and / or interview.

11. AAI reserves the right to modify/alter/restrict/enlarge/cancel the recruitment process to increase or decrease the number of posts to be filled, if need so arises, without issuing any further notice or assigning any further notice/any reasons thereafter. The decision of the Management will be final and no appeal will be entertained against this.

12. No TA/DA will be paid for appearing in the written test.

13. Securing at least 60% marks shall constitute First Class Degree wherever not prescribed.

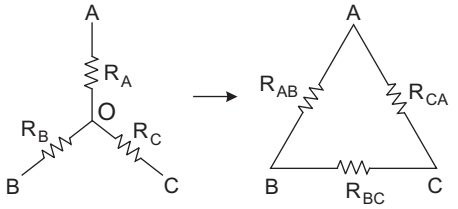
14. Any legal proceeding in respect of any dispute with regard to the recruitment against this advertisement can be instituted only in Delhi and Courts at Delhi only shall have the sole and exclusive jurisdiction to try any such case/ dispute.

15. Candidates need not send any document until asked to produce the same.

Network and Systems

NETWORK AND SYSTEMS

- **Kirchhoff Voltage Law (KVL)** is a consequence of the law of conservation of energy, voltage being the energy (or work) per unit charge.
- **Kirchhoff Current Law (KCL)** is the consequence of conservation of charge. Since the algebraic summation of the charge must be zero, the time derivative of this summation must also equal to zero.
- **Star to Delta Transformation**



$$R_{AB} = \frac{R_A R_B + R_B R_C + R_C R_A}{R_C}$$

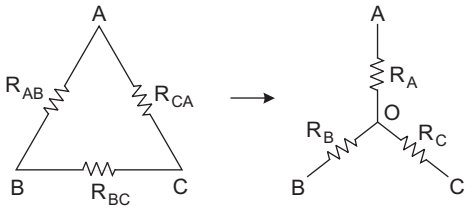
or $$R_{AB} = R_A + R_B + \frac{R_A R_B}{R_C}$$

Similarly,

$$R_{BC} = \frac{R_B R_C + R_C R_A + R_A R_B}{R_A}$$

and $$R_{CA} = \frac{R_C R_A + R_A R_B + R_B R_C}{R_B}$$

- **Delta to Star Transformation**



$$R_A = \frac{R_{AB} \times R_{AC}}{R_{AB} + R_{BC} + R_{CA}}$$

Similarly, $$R_B = \frac{R_{AB} \times R_{BC}}{R_{AB} + R_{BC} + R_{CA}}$$

and $$R_C = \frac{R_{AC} \times R_{BC}}{R_{AB} + R_{BC} + R_{CA}}$$

- Resistance of a wire depends on its material and its size. It is given by

$$\boxed{R = \frac{\rho l}{A}}$$

where, ρ = Resistivity of a material in Ω cm
l = Length of the wire, and
A = Area of cross-section of wire.

- **Self inductance (L)** is the property of conductor (or coil) by virtue of which it opposes any change in direction or magnitude of current flowing through itself. It is given by

$$L = \frac{N\phi}{I} \text{ henry}$$

where, N = No. of turns in the coil
ϕ = Flux set by current I.

- Also, $$\boxed{L = \frac{\mu_0 u_r N^2 A}{l} \text{ henry}}$$
- Current through inductor is given by

$$i(t) = \frac{1}{L}\int_{-\infty}^{t} V\,dt \text{ or } \frac{1}{L}\int_{-\infty}^{t} V\,dt + i(0) \text{ amp}$$

- Voltage across inductor is given by

$$V = L\frac{di}{dt} = N\frac{d\phi}{dt} \text{ volt}$$

- Power, $P = VI = LI\frac{di}{dt}$ watt
- When *n* inductors are connected in series the equivalent inductance is

$$L_{eq} = L_1 + L_2 + L_3 + ...+ L_n$$

- When *n* inductors are connected in parallel the equivalent inductance,

$$\frac{1}{L_{eq}} = \frac{1}{L_1} + \frac{1}{L_2} + \frac{1}{L_3} + ... + \frac{1}{L_n}$$

- Relation between the mutual inductance and two coils with inductance L_1 and L_2 is given by relation.

$$\boxed{M = k\sqrt{L_1 L_2}} \qquad \text{where } 0 \le k \le 1$$

where k = coefficient of coupling. It is a measure of amount of linking flux produced by one coil, w.r.t. other coil.

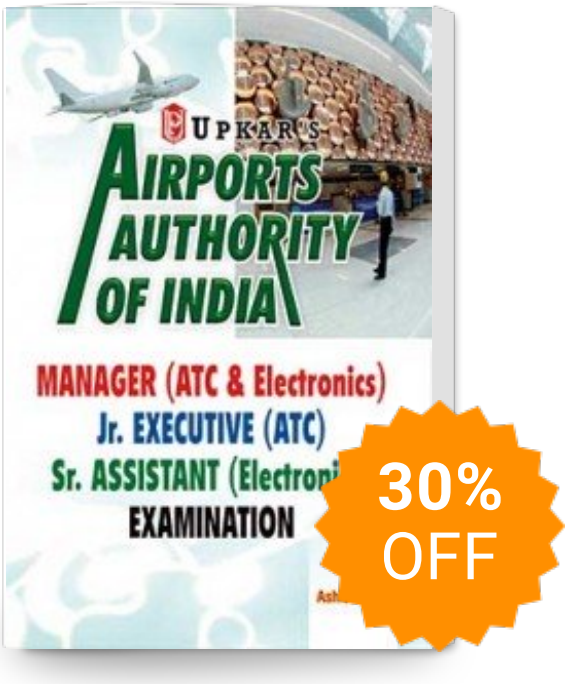
- **Capacitance** is the property of material by virtue of which it opposes the variation in potential between the two sides

$$\boxed{C = \frac{q}{V}}$$

where, q = charge, V = potential

- $$\boxed{C = \frac{\varepsilon_0 \varepsilon_r A}{d}}$$

Airports Authority of India



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