

SYLLABUS & WEIGHTAGE FOR
ON-LINE EXAMINATION
ADVERTISEMENT NO: DR-01/02/2025/WR

वरिष्ठ सहायक (राजभाषा)

कुल 120 - अंक

अवधि: 2 घंटे

भाग- 'अ' (50% भारांक)

पद के लिए निर्धारित शैक्षणिक योग्यता से संबंधित विषयों पर 50% प्रश्न नीचे दिए गए विवरण के अनुसार :

क्रम संख्या 01 से 03 के प्रश्न वर्णनात्मक (Descriptive Questions)

- (1) अंग्रेजी से हिन्दी अनुवाद (300) शब्द
- (2) हिन्दी से अंग्रेजी अनुवाद (300) शब्द
- (3) किसी भी विषय पर हिन्दी में संक्षिप्त टिप्पणी लिखना (150) शब्द

क्रम संख्या 04 से 09 के प्रश्न वस्तुनिष्ठ (objective) हैं जिनके चार विकल्प दिए जा सकते हैं ताकि परीक्षार्थी उचित विकल्प चुन सकें ।

- (4) हिन्दी वाक्यों में रिक्त स्थानों की पूर्ति
- (5) हिन्दी मुहावरों व लोकोक्तियों के अर्थ
- (6) हिन्दी शब्दों के अंग्रेजी पर्याय
- (7) अंग्रेजी शब्दों के हिन्दी पर्याय
- (8) अंग्रेजी मुहावरों का सही अर्थ
- (9) अंग्रेजी शब्दों के अंग्रेजी पर्याय

भाग- 'ब' (50% भारांक)

सामान्य ज्ञान, सामान्य बुद्धि, सामान्य योग्यता, अंग्रेजी, आदि पर 50% प्रश्न

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Senior Assistant (Operations)

Total Marks: 120

Duration: Two hours

Part – A (50% Weightage)

50% Questions on Subjects relating to Educational Qualification prescribed for the Post which is detailed below :-

- Functions of Airports Authority of India.
- Basic knowledge on Airport Operations
- Basic knowledge of aerodrome infrastructures like Runway, Taxiway, Apron, Aircraft Parking Stand etc.
- Aviation related abbreviation like ICAO, BCAS, DGCA, IATA etc.
- Functions of ICAO, AAI, JV Airport Operators, Regulatory Organization in Aviation such as DGCA, BCAS, AERA etc.
- Indian Aircraft Act 1934.
- AAI Act 1994.
- Role & function of agencies working at Airport – Immigration, Customs, Airport Health Office etc.
- Basic knowledge on passenger journey – departure from /arrival at the airport.
- Functions of CISF at airports.
- Domestic and International airlines operating in India
- Airport Rescue & Fire Fighting at Airports.
- Knowledge on Government Policies on aviation sectors such as UDAN-RCS.
- Basic Aerodynamics.
- Different categories of aircrafts.
- Importance and functions of Meteorology in aviation.

PART-B (50% Weightage)

50% questions on General Knowledge, General Intelligence, General Aptitude & English.

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Senior Assistant (Electronics)

Total Marks: 120

Duration: Two hours

PART-A (70% Weightage)

70% Questions on Subjects relating to Educational Qualification prescribed for the Post which is detailed below :-

Analog Electronics

Diode Circuits, Transistor biasings, Transistor amplifiers, FET amplifiers, coupled amplifiers, Feedback amplifiers, Oscillators Power amplifiers, Tuned Voltage amplifiers, Operational amplifiers, and Regulated Power Supplies.

NETWORKS AND TRANSMISSION LINES

1. **INTRODUCTION TO NETWORKS:** - Current & Voltage source as ckt. elements, transformation of sources. One Port and two port networks, balanced and unbalanced networks, active and passive networks, symmetrical and asymmetrical networks, T, bridged T lattice, ladder and L section.
2. **NETWORKS THEOREMS:** - KVL & KCL, loop and nodal analysis, thevenins, Nortons, Superposition, Maximum power transfer, tellegens & reciprocity theorems.
3. **ATTENUATORS:** - Utility and classifications, symmetrical and asymmetrical T & types & their design, L type attenuators, minimum loss pads.
4. **FILTERS:** - use of filter network in different communication system, low pass, high pass, band pass and band stop filters, their attenuation, phase shift and impedance characteristic, m-derived filters and their characteristics. Composite filters and their applications. Crystal filters, comparison of active and passive filter.
5. **TRANSMISSION LINES:** - different types of transmission lines and their application, primary and secondary constants, equivalent ckts. Infinite line characteristic impedance, current and voltage along an infinite line & their graphical representation. Propagation constant, attenuation constant & phase shift constant of the line. Relationship of characteristic impedance, propagation constant, attenuation constant & phase constant in terms of distributed constants. Conditions for minimum distortion and minimum attenuation of a signal on the line, necessity and ways of loading the line. Expression for voltage, current & impedance at a point on the line with and without losses. Expression for the input impedance of the line.

Transmission line at high frequency, losses at high frequency, transmission line as reactive components. Concept of reflection & standing waves on a transmission line. Definition of reflection coefficient, voltage reflection coefficient in terms of characteristic & load impedance. Definition of standing wave ratio (SWR), relation between VSWR & voltage reflection coefficient. Maximum and minimum impedance on a line in terms of characteristic impedance and VSWR. Principles of impedance matching using single stub, comparison of open ckt. And short ckt. Stubs.

Expression for characteristic impedance of open wire, line & coaxial line.

DIGITAL ELECTRONICS

Introduction to Digital Electronics, Number System & Codes, Boolean Algebra, Logic Gates, Arithmetic & Logic Circuits.

COMMUNICATION ENGINEERING

1. **Introduction to Radio Communications**: - Principle and need of radio communications, characteristics of radio waves, radio frequency spectrum. Need of modulation in radio communication. Classification of radio communication systems. Definition and application of AM, FM and pulse modulation.
2. **AMPLITUDE MODULATION & MODULATION METHODS**:- Analysis of amplitude modulation, S.S.B. and DSB, DSBSC, methods of AM linear and non-linear modulation methods. Shunt and Series plate modulators, balanced modulator.
3. **FREQUENCY & PHASE MODULATION**:- Analysis of frequency modulation, frequency spectrum. Phase modulation, analysis and comparison with FM. Varactor Diode modulator, reactance tube and Armstrong method for producing F.M. Pre-emphasis and De-emphasis ckts.
4. **A.M. & F.M. DEMODULATORS**: Classification and analysis of AM demodulation, linear diode detector, F.M. demodulators slope and phase detectors, ratio detectors.
5. **PULSE MODULATION**: Classification of pulse modulation, sampling and quantization, basic idea of PAM, PTM, PPM and PCM, DM & ADM.
6. **Radio Broadcast Transmitter**: Classification of radio transmitters, block diagram of AM transmitter and explanation of each block, frequency, stabilization of AM transmitter, SSB transmitter and its explanation, block diagram of R.T. and Armstrong F.M. transmitter and its explanation frequency stabilization of F.M. transmitter.
7. **RADIO RECEIVERS**: Classification of radio receivers, principle of super heterodyning, block diagram of superhet. AM receivers and explanation of each block, choice of LO and IF, tracking and alignment block diagram of FM receiver and explanation of each block, study of AVC & AFC circuits.
8. **RADIO RECEIVER MEASUREMENT**: Characteristics of AM & FM radio receivers, measurement of radio receivers characteristics such as sensitivity, selectivity, fidelity etc.,
9. **ANTENNA**: Basic radiation principle, antenna Parameters-Gain impedance, radiation pattern, radiation from thin linear antenna and folded dipole. Grounded antenna, long wire antenna, antenna arrays.
10. **RADIO WAVE PROPAGATION**: Basic modes and classification of radio wave propagation, ground wave propagation, sky wave propagation, ionosphere and its characteristics, space wave signal, effect of atmosphere and range of space wave propagation.

TESTING AND MEASURING INSTRUMENTS

1. **MEASUREMENT FUNDAMENTALS**: Definition of measurement and instrument, explanation and importance of Accuracy, Precision, Sensitivity, Resolution, Range Span, Stability, Dynamic.

PART-B (30% Weightage)

30% questions on General Knowledge, General Intelligence, General Aptitude & English.

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Senior Assistant (Accounts)

Total Marks: 120

Duration: Two hours

Part – A (Weightage 70%)

70% Questions on Subjects relating to Educational Qualification prescribed for the Post which is detailed below :-

FINANCIAL MANAGEMENT

- Accounting Concepts, Convention and Principles
(Dual Aspect, Matching concept, Accrual Concept, Conservatism)
- **Financial Statement**
 - Income Statement
 - Position Statement
 - Deferred Revenue Expenditure – Treatment
 - Capital Expenditure – Definition & Treatment
 - Revenue Expenditure – Definition & Treatment
 - Impact of Adjustment in Financial Statement
 - Schedule VI-Part I and Part –II of Companies Act, 1956
- **Analysis of Financial Statement (Ratio Analysis and Cash Flow Statement)**

COST ACCOUNTING

- Economic Order Quantity (EOQ)
- ABC Analysis in Inventory Costing
- Variance Analysis
- Marginal Costing
- Overheads

INCOME TAX

- Salary – Valuation of Perquisites, Business Income, Housing Income.
- Deductions under Income Tax Act, Exemptions under Income Tax Act
- Tax Deducted at Source and related issues – Salary, Contractor, Advertisement, Deposit procedure.

BUSINESS LAW (BASIC KNOWLEDGE, BUSINESS LAW AND COMPANY ACT)

- Formation of Company
- Memorandum and Article of Associations
- Meetings – AGM, Extra ordinary meeting, etc.,

COMPUTERS

Knowledge of MS-EXCEL, MS-WORD, etc.,

Part – B (Weightage 30%)

30% questions on General Knowledge, General Intelligence, General Aptitude & English.

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Jr. Assistant (Fire Service)

Total Marks: 120

Duration: Two hours

PART-A (50% Weightage)

50% Questions on Subjects relating to Educational Qualification prescribed for the Post which is detailed below :-

The level for written examination for the post of Jr. Assistant (FS) will be as under: -

Basic Mathematics, Basic Science, Elementary English / Grammar	}	- 10th Standard level
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PART-B (50% Weightage)

50% questions on General Knowledge, General Intelligence, General Aptitude & English.

General Knowledge, General Intelligence General Aptitude, English etc.,	}	- 12th Standard level
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