RAJASTHAN STATE ROAD TRANSPORT CORPORATION, JAIPUR

General Syllabus for JEN "A"/ JEN "B" / LWI / JLO/ SSI / Jr. Accountant / TI / ATI

PART- A **Marks: 50**

1. **Current Affairs: -** Major Current issues, happenings and Sports at State, National and International Levels.
2. **Geography and natural resources:-**
   (A) Broad physical features of the world, important place, mountains, and oceans.
   (B) Ecology and wild-life of India.
   (C) Rajasthan physiographic: - climate, vegetation and soil, regions, Broad physical divisions of Rajasthan. Problems of Population unemployment, poverty. Drought, famines and desertification in
   (D) Rajasthan, Natural resources of Rajasthan: Mines and Minerals, Forests, Land and Water, Animal resources. Wildlife and Conservation.
3. **Agriculture and Economic Development with special reference to India and Rajasthan:** Food and Commercial Crops of Rajasthan, Agriculture based Industries, Major Irrigation and River valley Projects, Projects for the development of the desert and waste-lands. Major Industries. Tribes and their economy.
4. **History and Culture:** Major monument and literary works, History and Culture of India and Rajasthan with special reference to :-
   a) Tribes and their economy.
   b) Dialects and Literature.
   c) Music, Dance and Theatre.
   d) Religious beliefs, cults, saint, poets, Warrior- saints, 'Lok Devtas' and ' Lok Deviyan'.
   e) Handicrafts.
   f) Fairs and Festivals, Customs, Dresses and Ornaments, with special reference to Folk and Tribal aspects thereof.

5. **General Mental Ability.**
6. **Logical reasoning and analytical ability.**
7. **English , Hindi & Mathematics (10^{th} Standard)**
8. **Administrative sets at state, district, tehsial & panchyat. (Rajasthan)**
9. **Basic knowledge of Computers.**

RAJASTHAN STATE ROAD TRANSPORT CORPORATION, JAIPUR

Syllabus for Accounts Category:

Junior Accountant

PART- B **Marks: 50**

The standard and syllabus of the examination shall be Graduation Degree level.

(A) "Accounting, Auditing and Taxation:-

(I) Accounting Meaning, nature, functions, usefulness, types of accounting, accounting equations, generally accepted accounting concepts, principles and conventions, journal ledger, trial balance and preparation of final accounts, Bank reconciliation statement, rectification of errors, depreciation accounting, basic principles relating to hire purchase and installment payments system, insurance claims, double entry system, Computer Application in accounting.

(II) Auditing- Meaning, objectives ,planning and procedures audit programme, working papers, test checking, routine checking, vouching: concepts and procedures, rights, duties and liabilities auditors, cost audit: me aching, objectives, scope, programme, cost audit of materials, labour and overhead.

(III) Cost Accounting – Material costing, labour costing, overhead costing, output costing, job costing, marginal costing, standard costing, budgets and budgetary control.

(IV) Taxation: Elementary knowledge of Direct and Indirect Taxes

(B) **Indian Economics and Business method:-**

Basic features of Indian Economy Industrial policy of India. Industrial growth and prospects in India. Role and problems of Public sector in India.

Business- Concept, Nature, Scope, Objectives and social responsibilities of business. Forms of business organizations- public sector and Cooperatives- Functions, Importance and limitations.

(C) Basic knowledge Public Private Parterriership Scheme/Project.

We are also suggesting the general papers for all discipline may consist of:-

(i) RTI Act, 2005

(ii) Road Transport Corporation Act, 1950

RAJASTHAN STATE ROAD TRANSPORT CORPORATION, JAIPUR

Syllabus for Traffic Category:

Traffic Inspector/Assistant Traffic Inspector

PART- B **Marks: 50**

1. Comprehension.
2. Intemperance skills including communication skill,
3. Logical resoning and analytical skills.
4. Decision making & problem solving.
5. General mental ability.
6. Basic numeracy (numbers and their relations orders of magnitude etc) data interpretation(charts/graphs/tables/data sufficiency etc.) of class X^{th} level.
7. English language comprehensive skills of class X^{th} level.
8. Question related to English language comprehension skills of class X level (last item in the syllabus of Paper II will be tested through passages from English language only without providing Hindi translation there of in the question paper)

RAJASTHAN STATE ROAD TRANSPORT CORPORATION, JAIPUR

Syllabus for Legal Category:

Junior Law Officer

PART- B **Marks: 50**

1. Constitution of India with special emphasis on Fundamental Rights, Directive Principles and enforcement of rights through writs.
2. Functioning of High Courts, Supreme Court and Attorney General.
3. Civil Procedure Code, Criminal Procedure Code, (Provisions required to be referred generally in Government offices will be given importance.)
4. Evidence Act, Limitation Act, Interpretation of Statues, drafting and convincing.
5. Industrial Disputes Act 1947, Employees State Insurance Act 1948, Motor Vehicle Act 1988 and Workmen's Compensation Act 1923

Syllabus for Labour Welfare Inspector

PART- B **Marks: 50**

1. Industrial Disputes Act, 1947.
2. Factories Act, 1948
3. Contract Labour(Regulation & Abolition) Act, 1970
4. Rajasthan Shops and Commercial Establishments Act,1958
5. Employees State Insurance Act, 1948
6. Workmen's Compensation Act, 1923
7. Payment of Gratuity Act, 1972
8. Motor Transport Worker's Act, 1961
9. Payment of Wages Act, 1936
10. Minimum Wages Act, 1948
11. Payment of Bonus Act, 1965
12. Trade Union Act, 1926
13. Rajasthan State Road Transport Workers and Workshop Employees standing orders,1965

RAJASTHAN STATE ROAD TRANSPORT CORPORATION, JAIPUR

Syllabus for Engineering Category: JEN "A" & JEN "B"

Automobile, Mechanical and Electrical Engineering Stream

PART- B **Marks: 50**

1. **Engineering Thermodynamics**

   i) First Law of Thermodynamics

   First law energy equation for closed and open systems under steady flow and unsteady flow condition; Application of First law energy equation to thermodynamics system components such as boiler, turbine, compressor, nozzle expander, pump, condenser, First law efficiency. Second law of thermodynamics; Reversible irreversible processes; Entropy; Camot cycle

2. **Heat Transfer/ Internal Combustion Engines:**

   i) Internal Combustion Engines:

   Ideal and actual cycles of operation, fuels, combustion and abnormal combustion in SI and CI engines and combustion chamber, carburetors and electronically controlled fuel injection systems for SI engines, fuel injection systems for diesel engines, lubrication systems, cooling systems, supercharging of engines, scavenging, engine performance, testing and exhaust emission characteristics, control of exhaust pollution, current developments including electronic monitoring and control of engines.

   ii) Introduction to combustion process:

   Combustion in premixed and diffusion flames – Combustion process in IC engines.

   iii) Normal, abnormal combustion in SI Engines:

   Stages of combustion - Flame propagation- Rate of pressure rise - Cycle to cycle variation - abnormal combustion - Theories of detonation - Effect of engine operating variables on combustion.

   iv) Combustion and knock in CI Engines:

   Droplet and spray combustion theory – stages of combustion – delay period – peak pressure – Heat release – Gas temperature – Diesel knock.

   v) Heat Transfer in IC Engines:

   Basic definitions – Convective heat transfer – Radiative heat transfer – Heat transfer, temperature distribution and thermal stresses in piston – Cylinder head – fins and values.

3. Alternative Fuels and Energy Systems:

i) Introduction :

Estimation of petroleum reserve – Need for alternative fuel - Availability and properties of alternate fuels – general use of alcohols – LPG – Hydrogen – Ammonia, CNG, and LNG – Vegetable oils and biogas – merits and demerits of various alternate fuels.

ii) Alcohols:

Properties as engine fuel, alcohols and gasolene blends, performance in SI engines, Methanol and gasoline blends – Combustion characteristics in engines – emission characteristics.

iii) Natural Gas, LPC. Hydrogen and Biogas:

Availability of CNG, properties, modification requires to use in engines – performance and emission, characteristics of CNG using LPG in SI and Ci engines, Performance and emission for LPG – Hydrogen – Storage and handling, performance and safety aspects.

iv) Vegetable oils:

Various vegetable oils for engines – Esterification – Performance in engines – Performance and emission characteristics.

v) Electric and solar powered vehicles:

Layout of an electric vehicle – Advantage and limitations – specifications – system component – Electronic control system – High energy and power density batteries – hybrid vehicle.

4. Machine Design:

i) Materials: Properties; Design for strength: Allowable stresses, factor safety; Stress concentration: Introduction of various design consideration likes strength, stiffness, weight, cost, space etc; Concept of fatigue; Design of welded joints under direct loading, eccentric loading; Design of riveted joint, eccentrically loaded riveted joints. Design of screwed joints: Initial stresses, stress due to combined forces design of cylinder covers, bolts of uniform strength, bolted joints under eccentric loading. Design of helical and leaf springs. Design of shafts under combined loading. Design of brakes and clutches.

ii) Vehicle frame and Suspension:

Study of loads – moments and stresses on frame members, Computer aided design of frame for passenger and commercial vehicle – Computer aided design of leaf springs – coil springs and torsion bar springs.

iii) Front Axle and Steering systems:

Analysis of loads – moments and stresses at different sections of front axle, Determination of bearing loads at Kingpin bearings, Wheel spindle bearings,

Choice of bearings, Determination of optimum dimensions and proportions for steering linkages ensuring minimum error in steering.

iv) Clutch:
Torque capacity of clutch, Computer aided design of clutch components, Design details of roller and sprag type of clutches.

v) Gear Box:
Computer aided design of three speed and four speed gear boxes.

vi) Drive Line and Rear Axle:
Computer aided design of propeller shaft, Design details of final drive gearing, Design details of full floating semi- floating and three quarter floating rear shafts and rear axle housings.

5. **Automobile Engineering:**
Layout of different kinds of vehicles, gear boxes including automatic transmission systems, clutches including fluid couplings, torque converters, rear axle and final drive – differential, front axle construction, steering systems, suspension systems, tyres, springs and shock absorbers, brakes and their actuations, ignition systems recent developments – Vehicle electrical & electronic systems. Automotive pollution and its control strategies.

6. **Refrigeration & Air – conditioning:**
a) Air Conditioning Fundamentals:
Basic air conditioning system – Location of air conditioning components in car – Schematic layout of a refrigeration system – Compressor components – Condenser and high pressure service ports – Thermostatic expansion value – Expansion value calibration – Controlling evaporator temperature – Evaporator pressure regulator – Evaporator temperature regulator.

b) Air Conditioner – Heating system.
Automotive heaters – Manually controlled air conditioner – Heater system – Ford automatically controlled air conditioner and heater systems – Automatic temperature control. Air conditioning protection – Engine protection.

c) Air Conditioning services:
Air conditioner maintenance and service – Servicing heater system – Removing and replacing components – trouble shooting of air controlling system – Compressor service.

7. **Maintenance Management:**
Role of materials management techniques in material' productivity improvement, cost reduction value – improvement, Purchase management, Incoming material control, Acceptance sampling and inspection, Vendor rating system, Inventory management, Various inventory control models, Material requirement planning

system, Discrete lot sizing technique, Algorithms for multi – product lot sizing with constraints, Commodities, Design of inventory distribution systems, Inventory management in Kanban and just-in-time.

8. Fleet Management:

a) Management Training and Operations:

Basic principles of supervising – Organising time and people – Job instruction training. Training devices and techniques – Driver and mechanic hiring – Driver checklist – Lists for driver and mechanic – Trip leasing – Vehicle operation and types of operations.

b) Vehicle Maintenance:

Scheduled and unscheduled maintenance – Planning and scope – Evaluation of PMI programme – Work scheduling – Overtime – Breakdown analysis – Controls of repair backlogs – cost of options.

c) Vehicle parts, supply management and Budget:

Cost of inventory – Balancing inventory cost against down time – Parts control – Bin tag systems – Time Management – Time record keeping – Budget activity – capital expenditures – Classification of vehicle expenses – fleet management and data processing – Data processing systems – Software Model – Computer controlling of fleet activity – Energy management.

9. Modern Vehicle Technology:

a) Trends in Power Plants:

Hybrid vehicles – stratified charged/learn burn engines – Hydrogen engines battery vehicles – Electric propulsion with cables – Magnetic track vehicles.

b) Suspension brakes and safety:

Air suspension – closed ieep suspension – antiskid braking system, retarders, regenerative braking safety cage – air bags – crash resistance – passenger comfort.

c) Noise and Pollution

Reduction of noise – Internal & External Pollution Control through alternate fuels/ power plants – Catalytic converters and filters for particulate emission.

d) Vehicle Operation and Control.

Computer control for pollution and noise control and for fuel economy – transducers and actuators – Information technology for receiving proper information and operation of the vehicle like optimum speed direction.

e) Vehicle automated tracks

Preparation and maintenance of proper road network – National highway with automated roads and vehicles – satellite control of vehicle operation for safe and fast travel.

Basic Electrical engineering:

1. Electrical Measurements, Concepts of current, voltage, resistance, power and energy, their units, ohm's law.
2. Circuit Law:
   Kirchooff's law, Network theorems, Electro- magnetism, emf, reluctance, magnetic circuits, Electro- magnetic induction, self and mutual inductance. AC fundamentals, instantaneous, peak, RMS and average values of alternating waves, equation of sinusoidal wave form, series and parallel AC Circuits, Resonance.
3. **Measurement and Measuring Instruments:**
   Analog and digital types meter, Moving coil and moying iron ammeters and voltmeters, Extension of range, Wattmeters, Multimeters, megger, transduccers.
4. Electrical Machines:
   Basic principles of DC Motors, generators, their characteristics, Speed control and starting of Dc Motors, loses and efficiency of DC Machines, 1- Phase and 3 – Phase Transformers: Principles of operation, equivalent circuit, voltage regulation, open circuit and short circuit, efficiency and auto- transformers.

   Synchronous Machines: Generation of 3 – phase emf, armature reaction, voltage regulation, parallel operation of two alternators, synchronizing, starting and application of synchronous motors.

   3- Phase Induction Motor:
   rotating magnetic field, equivalent circuit, torque – speed characteristics, starting and speed control of 3- phase induction motors, Financial KW motors, i- phase induction motors, AC series motor, and reluctance motor.

RAJASTHAN STATE ROAD TRANSPORT CORPORATION, JAIPUR

Syllabus for Store Sub Inspector:

Stores Category

PART- B **Marks: 50**

The Standard syllabus of examination shall be of Diploma in Mechanical/ Electronic/ Instrument Engineering /Automobile

I.T.I.: Motor Mechanic – Instrument Mechanic with Sr. Secondary level:-

(A) An introduction of Automobile Vehicles and General knowledge basis of its assemblis, Tools, Plants and Machineries required for repair and maintenance of vehicles.
(B) Advance workshop technique
(C) Industrial Engineering
(D) Mechanical estimating and costing
(E) Management & Entreprenurship
(F) Power System
(G) Computer Tely
(H) Enery System

RAJASTHAN STATE ROAD TRANSPORT CORPORATION, JAIPUR

Syllabus for the post of Computer

Marks: 100

There shall be one compulsory paper for the candidates for the post of computer comprising of two parts as under 100 Marks / 2 Hours

1. General Knowledge & every day Science & Elementary Knowledge of Mathematics, Economics. 50 Marks
2. Statistics & Computer. 50 Marks

Scope of Paper: -

1. GENERAL KNOWLEDGE & EVERY DAY SCIENCE, ELEMENTARY MATHEMATICS, ECONOMICS

It includes knowledge of current events and of such matters of everyday observation and experience of their scientific aspects as may be expected of an educated person who has not made a special study of any special subject. Economic Development of India with special reference to Rajasthan.

2. STATISTICS & COMPUTER

The paper will be set to test the knowledge of the candidates in the subject. Questions to be set will include decimal fraction, percentage, ratio and proportion, averages (simple and weighted), measure of central tendency – mean, mode & median, collection of data, tabulataion of data, sample survey, calculation of index number, simple and compound interest, square roots simple equations. Elementary knowledge of computer, MS Office – (Word, Excel, Power point, outlook), Introduction of Internet & Knoweldge of E-mail.

RAJASTHAN STATE ROAD TRANSPORT CORPORATION, JAIPUR

Syllabus for Lower Division Clerk (LDC) **Marks: 100**

1. **Current Affairs: -** Major Current issues, happenings and Sports at State, National and International Levels.
2. **Geography and natural resources:-**
   (A) Broad physical features of the world, important place, mountains, and oceans.
   (B) Ecology and wild-life of India.
   (C) Rajasthan physiographic: - climate, vegetation and soil, regions, Broad physical divisions of Rajasthan. Problems of Population unemployment, poverty. Drought, famines and desertification in
   (D) Rajasthan, Natural resources of Rajasthan: Mines and Minerals, Forests, Land and Water, Animal resources. Wildlife and Conservation.
3. **Agriculture and Economic Development with special reference to India and Rajasthan:** Food and Commercial Crops of Rajasthan, Agriculture based Industries, Major Irrigation and River valley Projects, Projects for the development of the desert and waste-lands. Major Industries. Tribes and their economy.
4. **History and Culture:** Major monument and literary works, History and Culture of India and Rajasthan with special reference to :-
   a) Tribes and their economy.
   b) Dialects and Literature.
   c) Music, Dance and Theatre.
   d) Religious beliefs, cults, saint, poets, Warrior- saints, 'Lok Devtas' and ' Lok Deviyan'.
   e) Handicrafts.
   f) Fairs and Festivals, Customs, Dresses and Ornaments, with special reference to Folk and Tribal aspects thereof.

5. **General Mental Ability.**
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