



BALUCHISTAN PUBLIC SERVICE COMMISSION

(EXAMINATIONS BRANCH)

Samungli Road, Quetta Cantt.

Dated Quetta, the 23st December 2021

PRESS RELEASE

No.BPSC/EXAM/SYLLABUS/8/2021/ 161-65. It is notified for information of candidates who applied against the posts of Sub Divisional Officer / Assistant Director (Electrical & Mechanical) (B-17) in the Building, Physical, Planning and Housing Department advertised through Advertisement No. 04/2021 by this Commission that their MCQs test would be held in accordance with the syllabus available at the official website of BPSC www.bpsc.gov.pk:-

Note:- The date and time of abovementioned test would be announced in due course of time

Secretary
Balochistan Public Service
Commission

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Copy to :

1. The Director General, Public Relations Balochistan, Quetta for publication in the Daily Newspaper.
2. The DAILY JANG. DAILY EXPRESS, DAILY MASHRIQ QUETTA and INTIKHAB, Hub.
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4. Assistant Director (Database), Balochistan Public Service Commission, Quetta.
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SYLLABUS FOR THE POST OF ELECTRICAL ENGINEERING (B-17)
IN THE BUILDING, PHYSICAL & PLANNING DEPARTMENT

Advt No.: 04/2021

Qualification: B.E. (Electrical)

1. Analog and Digital Communication.
2. Electromagnetic Field Theory.
3. Electrical Machines.
4. Control Systems.
5. Electronic Circuit Design.
6. Instrumentation and Measurements.
7. Digital Signal Processing.
8. Computer Communication Networks.
9. Power Generation, Transmission and Distribution.
10. Power System Analysis and protection.
11. Power Electronics Smart Grid.

NOTE: BOOKS ALREADY RECOMMENDED BY PEC CURRICULUM FOR BACHELORS OF ENGINEERING IN MECHANICAL WITH EMPHASIS ON ABOVE MENTIONED 13 SUBJECTS.

**Syllabus for the post of Mechanical Engineering (B-17) in the Building,
Physical & Planning Department**

Advt No.: /2021

Qualification: B.E (Mechanical)

1. **MECHANICAL WORKSHOP**
Vernier Caliper, Micrometer, Drilling, Tapping, Lathe, Shaper, Milling, Operations.
2. **ENGINEERING MATERIALS & METALLURGY**
Metals, Iron Carbon Diagram, Material Classification, Heat Treatment, Crystal Structure.
3. **ENGINEERING MECHANICS**
Force Systems, Moment of Forces, Equilibrium Free Body Diagram, Plane Stresses, Method of Joints, Center Of Gravity and Centroid, Friction, and Its Applications.
4. **MECHANICAL ENGINEERING DRAWING**
Drawing Instruments, Lines, Lettering, Dimensioning, Projection, Sectioning, Surfaces, Auxiliary Views, Assembly Drawing.
5. **THERMODYNAMICS**
Control Volume, Working Substance, Heat And Work, Pressure, Enthalpy Entropy Diagrams, Ideal Gas, Laws, Thermodynamic, Process, Carnot Cycle, Rankine Cycle, Brayton Cycle.
6. **ENGINEERING DYNAMICS**
Rectilinear Kinematics, Curvilinear Motion, Normal and Tangential Components, Newton's Second Laws of Motion, Work and Energy, Momentum.
7. **FLUID MECHANICS**
Fluid Properties, Buoyancy of Fluid at Rest, Euler and Bernoulli Equations of Motion, Dimensional Analysis, Buckingham Pi Theorem, Reynolds Law of Similitude, Flow Measuring Devices.
8. **SOLID MECHANICS**
Mechanical Properties of Metals, Tensile and Compressive Stress, Hooks Laws Modulus of Elasticity, Shear Stress and Strain, Load Extension Diagram Factor of Safety, Permissible and Allowable Stress, Moment of Inertia, Section Modulus, Radius of Gyration, Center of Gravity, Shear Stress in Beas, S Mohr Circle, Torsion of Circular Bars.
9. **MACHINE DESIGN**
Machine Parts, Permissible and Actual Stresses, Factor of Safety, Designing of Keys, Cotters, Coupling, Rigid Coupling, Brakes, Flywheel Welded Joints Riveted Joints, Translation Screws, Fits and Tolerances.
10. **HEAT & MASS TRANSFER**
Heat Equation, Fourier's, Law One Dimensional Steady State, Composite Wall, Critical Thickness of Insulation, Transient Conduction , Lumped Capacitance Method, Newton's Law of Cooling, Flow Over Flat Plates, Shear Stresses, Friction Coefficient, Phase Change, Boiling And Condensation, Stefan Boltzmann Law Black Body Radiation, Classification of Heat Transfer Coefficient, Fick Law and Its Application.
11. **INTERNAL COMBUSTION ENGINES**
Internal Combustion Engine, Its types and Classification, Construction and Working of Various Types of IC Engines And Its Components, Design and Operation of Various IC Engine Systems Including Preparation of Air/Fuel Mixture, Combustion Control and Emission Reduction. Engine Operating Parameters.
12. **MECHANICAL VIBRATIONS**
Un-damped Free Vibration, Vibration Isolation, Two Degree of Freedom System, Coordinate Coupling, Faced Harmonic Vibration, Free And Forced Vibration Of Cables And Uniform Bars, Critical Speed Of Rotating Shafts, Torsional Vibrations of Circular Shafts.
13. **REFRIGERATION & AIR CONDITIONING**
Refrigeration Cycles, Air-Conditioning, Indoor and Outdoor, Air Conditions, Comfort Conditions, Central Air Conditioning, Essential Components, CFM Rating and Tons of Air Condition, Central Air Conditioning Plant, Cooling and Heating Load Calculation, Procedures, Duct Sizing and Piping Design, Pumps and Fans Selection and Air Ventilation, Calculation of Fresh Air Supply of a Multistory Building Air Handling Unit For Untreated Fresh Air, Forces Convection Based Air Ventilator Design.

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OF ENGINEERING IN MECHANICAL WITH EMPHASIS ON ABOVE MENTIONED
13 SUBJECTS.**