

Pokhara University
Service Commission
Curriculum for Lecturer Level Examination (Open)

Full marks: 75

Pass marks: 37.5

Part: One

1st Paper: marks: 40

Time: 2.15 hr.

- 1. Knowledge of the related /concerned subject matter [40]**
Master level courses and recent trend based, 8-8 marks two questions
and 6-6 marks four questions.

Part: Two

2nd Paper: marks: 35

Time: 1.45 hr.

- 2. Knowledge about related curriculum [10]**
Current Bachelors, Masters and M.Phil level curriculum structure, strengths,
weaknesses and improvement related, 10 marks one question or 5-5 marks questions.
- 3. Teaching and research methodology [10]**
a. **Teaching Methods**: Knowledge of teaching skill, method of teaching,
preparation of lesson plan, work plan, action plan one question 5 marks.
b. **Research Method**: Proposal writing for research and seminar related, 5 mark
one question
- 4. Subject related problems and solutions [10]**
Related subject's academic problems and measures to address the problems,
10 mark one question.
- 5. Issues about higher education of Nepal [5]**
Issues about higher education of Nepal and role of Pokhara University,
5 mark one question.

Note:

1. All questions are compulsory.
2. All questions will be in English and Candidates are required to answer the questions in English.

Pokhara University
Service Commission
Curriculum for Lecturer Level Examination (Internal open)

Full marks: 90

Pass marks: 45

Part: One

1st Paper: marks: 40

Time: 2.15 hr.

1. Knowledge of the related /concerned subject matter

[48]

Master level courses and recent trend based, 10-10 marks two questions and 7-7 marks four questions.

Part: Two

2nd Paper: marks: 42

Time: 1.45 hr.

2. Knowledge about related curriculum

[12]

Current Bachelors, Masters and M.Phil level curriculum structure, strengths, weaknesses and improvement related, 12 marks one question or 6-6 marks two questions.

3. Teaching methods

[12]

a. Teaching Methods: Knowledge of teaching skill, method of teaching, preparation of lesson plan, work plan, action plan one question 6 marks.

b. Research Method: Proposal writing for research and seminar related, 6 mark one question.

4. Subject related problems and solutions

[12]

Related subject's academic problems and measures to address the problems, 12 mark one or 6-6 marks two question

5. Issues about higher education of Nepal

[6]

Issues about higher education of Nepal and role of Pokhara University, Mark 6 marks one question.

Note:

3. All questions are compulsory.
4. All questions will be in English and Candidates are required to answer the questions in English.

Pokhara University
Service Commission

Curriculum for Assistant Instructor Level Examination (Internal open)

Full marks: 100

Pass marks: 50

Part: One

1st Paper: marks: 60

Time: 2.15 hr.

1. Knowledge of the related /concerned subject matter [60]

Diploma level courses (University & CTVT) of related subjects. (10 mark four questions and 5 marks four questions).

Part: Two

2nd Paper: marks: 40

Time: 1.45 hr.

2. Knowledge about related curriculum [10]

Diploma level curriculum (University & CTVT), structure, weaknesses Strength and improvement related. (10 marks one question or 5 marks two questions).

3. Teaching methodology [10]

a. Teaching Methods: Related subjects teaching skill, Knowledge about the related curriculum/ Lab works/ practical/ Experimental Application: Current Bachelor levels Practical's structure in PU and other universities, strengths, weakness and improvements (5 marks one questions).

b. Practical / laboratory Works:

a. Laboratory Handling /Set-up: Laboratory set up and design for the basic engineering courses. Laboratory management and upgrading of laboratory Idea Work shop (Lab) technology, Knowledge about "How to handle the lab works" & Preparation of lab sheets/ Formats, work plan, lab design, basic idea on project work.(one question 5 marks).

4. Subject related problems and solutions [10]

Related subject's matter problem and solution to the problem, (10 mark one question).

5. Issues about higher education of Nepal [10]

Higher education in Nepal, role of Pokhara University, University Grants Commission (10 mark one question or two question 5 marks).

**Pokhara University
Service Commission**

Curriculum for Deputy Instructor Level Examination (Internal open)

Full marks: 100

Pass marks: 50

Part: One

1st Paper: marks: 60

Time: 2.15 hr.

1. Knowledge of the related /concerned subject matter [60]

Diploma level courses (University & CTVT) related subjects. (10 mark four questions and 5 marks four questions).

Part: Two

2nd Paper: marks: 40

Time: 1.45 hr.

2. Knowledge about related curriculum [10]

Diploma (University & CTVT) level curriculum structure, strengths, weaknesses and improvement related, (10 marks one question or 5 marks two questions).

3. Teaching methodology [10]

a. Teaching Methods: Knowledge of related subject matter teaching skill, method of teaching, preparation of lesson plan, work plan, action plan Idea of Lab handling skill, Importance of Engineering Lab, new trend based of Work shop (Lab) technology & Metrology. Laboratory set up and design for the basic engineering courses. Laboratory management and upgrading one question 5-5 marks.

4. Subject related problems and solutions [10]

Related subject's matter problem and measures to address the problem. (10 marks one).

5. Issues about higher education of Nepal [10]

Higher education in Nepal, role of Pokhara University, History of Higher Education in Nepal, University Grants Commission. (10 mark one question or two questions 5 marks).

Pokhara University
Service Commission
Curriculum for Instructor Level Examination (Internal open)

Full marks: 100

Pass marks: 50

Part: One

1st Paper: marks: 60

Time: 2.15 hr.

1. Knowledge of the related /concerned subject matter [60]

Bachelor & Diploma level courses (University & CTVT) related subjects. (10 mark four questions and 5-5 marks four questions).

Part: Two

2nd Paper: marks: 40

Time: 1.45 hr.

2. Knowledge about related curriculum [10]

Bachelor & Diploma (University & CTVT) level curriculum structure, strengths, weaknesses, Preparation of reference material and improvement related. (10 marks one question or 5 marks questions).

3. Teaching methodology [10]

a. **Teaching Methods:** Knowledge of related subject teaching skill, method of teaching particular subject, preparation of lesson plan, work plan, action plan Importance of Engineering Lab, new trend based of Work shop (Lab) technology & Metrology, Laboratory set up and design for the basic engineering courses. Laboratory management and upgrading. (10 mark one question or 5 marks two questions).

4. Subject related problems and solutions [10]

Related subject's matter problem and measures to address the problem. (10 mark one)

5. Issues about higher education of Nepal [10]

Higher education in Nepal, role of Pokhara University, Introduction of Multi-University concept, History of Higher Education in Nepal, University Grants Commission. (10 mark one question or two question 5 marks).

**Pokhara university Service Commission
Curriculum for Instructor Level Examination
(Computer Applications)**

Full marks: 100

Part-A : Higher Education in Nepal : An Overview :- 30

1. History of Higher Education in Nepal.
2. Introduction of Multi-University concept.
3. Pokhara University and its function with special reference to
 - a. Pokhara university Council
 - b. Academic council
 - c. Service Commission
4. University Grants Commission.

Part-B

An Overview:- 70

1. **Semiconductor devices:** Junction diodes, Zener diodes, Transistors, MOSFETs, Integrated Circuits.
2. **Power Supplies and safety:** sources of e.m.f., Rectifier circuits, Power control.
3. **Measuring Instruments:** MultiMeters, Oscilloscopes, Signal generators, Frequency counters.
4. **Analogue Electronics:** Amplifiers and feedback, Impedance matching, Operational amplifiers.
5. **Digital Electronics:** Logic gates, Numbering systems, Logic circuit designs, bistable and Astable Multivibrators, Binary counters, Registers and memories, Digital systems.
6. **Computers and microprocessors:** Digital computers, Computer peripherals, Microprocessors, Computer softwares, High and low level languages.
7. **Computer Software:** history and significance, Systems software, Application software, Software issues, Programming languages, Enterprise software.
8. **Managing Organisational Data and Information:** Databases (modern approach), Database Management System, Logical Data Model, Data Warehouses.
9. **The Internet and Intranets.**
10. **Applying Information Technology for Competitive Advantage**

Pokhara University Service Commission
Curriculum for Assistant Instructor Computer Level Examination

Time:4hr

Full marks: 75

Pass mark: 37.5

- | | | |
|-----------------------------------|--|-------|
| 1. Introduction to Computer | | 15 20 |
| | a. Introduction to Computers | |
| | b. The Internet & the World Wide Web | |
| | c. The Components of the System Unit | |
| | 1. Input | |
| | 2. Output | |
| | 3. Storage | |
| | d. Operating Systems & Utility Programs | |
| 2. Operating Systems | | 15 20 |
| | a. Exploring the Basics | |
| | b. Working with Files | |
| | c. Organizing Files with Windows Explorer | |
| | d. Personalizing your Windows Environment | |
| | e. Searching for Information | |
| | f. Working with Graphics | |
| | g. Object Linking and Embedding | |
| | h. Exploring your Network | |
| | i. Managing Windows XP | |
| | j. Working with Hardware | |
| 3. An Introduction to Information | | 15 20 |
| | a. Introduction to Computer Based Information Systems | |
| | b. Hardware: Input, Processing, Output and Storage Devices | |
| | c. Software: Systems and Applications Packages | |
| | d. Word Processing and Spreadsheet Applications | |
| | e. Databases | |
| | f. Graphics, On-line Information and other PC Applications | |
| | g. Business Information Systems | |
| | h. Security, Privacy, Environmental and Ethical Issues | |
| 4. Introduction to the Internet | | 15 20 |
| | a. Developing a Basic Web Page and Linkins | |
| | b. Designing a Web Page | |
| | c. Designing a Web Page with Tables & Frames | |
| | d. Creating Web Page Forms | |
| | e. Working with Cascading Style Sheets | |
| | f. Programming with JavaScript | |
| | g. Working with JavaScript Objects & Events | |
| | h. Creating a Multimedia Web Page | |
| 5. C Language Programming | | 15 20 |
| | a. C Fundamentals | |
| | b. Introduction C's Program Control Statements | |
| | c. A Closer Look at Data Types, Variables and Expressions | |
| | d. Exploring Arrays & Strings | |
| | e. A Closer Look at Functions | |

Pokhara University Service Commission

Curriculum for Assistant Instructor Electrical Level Examination

Time:4hr

Full marks: 100

Pass mark: 50

1. Basic Circuit Theory 8 11
 - a. Basic Concept of dc electric Circuit- electric Circuit, voltage, resistance, ohm's law, Kirchoff 's laws, power and energy, series and parallel connection of resistors, Basic Concept of ac electric Circuit- nature of ac voltage and current, pharos diagram of ac quantities, single phase ac circuit with- R,L,C, series circuit with RL,RC, RLC< ac parallel circuit, resonance in ac series and parallel circuits. Three phase ac circuit.
2. Electric Machine 8 11
 - a. Construction details, operating principle, operating characteristics, testing and performance analysis of following electric Machines- Transformer (single phase and three phase), dc generator, dc motor, three phase induction motors, single phase induction motors, three phase synchronous generator motor.
3. Instrumentation 8 11
 - b. Construction and operating principle of Moving coil instruments as ammeter and voltmeter, electro- dynamic instruments as wattmeter and energy meters. Measurement of active and reactive power in , single phase circuit and three phase circuits.
4. Power System 10 15
 - c. Generating System- type of turbine and generator used in hydro power plant and thermal, power plants, different parts of hydro electro power plants, Speed governing system, excitation system and automatic voltage regulator (AVR).
 - d. Transmission system – line parameters, equivalent circuits of short, medium and their performance analysis. Distribution system – types of distribution line, voltage drop calculation and conductor size calculation
 - e. Substation - types of substations, major equipment used in sub-station.
5. Utilization of electrical energy 8 11
 - a. Illumination - luminous flux, luminous intensity, illumination level, different type of light sources for illumination of interior and exterior, Laws of illumination, basic concept of planning and design of illumination.
 - b. Industrial Utilization - types of drives, selection of motors for different applications. Electricity tariff and power factor correction.
6. Protection system 8 11
 - a. Fuses and circuit breaker for L.V. application, Isolators and contactors, Circuit breakers for H.V. applications, CT and PT for protection schemes, IDMT relays, protection schemes for generator, transformers, transmission line and distribution lines. Fault calculation. Earthing system.
7. Electrical Installation 15 15

- a. Domestic wiring system - Types of wiring system, distribution board and wiring diagrams (Layout and connection diagrams), testing of wiring system - insulation test and earthing test.
 - b. Industrial wiring system - Types of wiring system, H.V. power intake system, Cable tray and trunking system, motor control system using relay, timer, contactor for starting, overload and short circuit protection, over speed protection.
8. Maintenance and repair of electrical equipment 10 15
- a. Regular maintenance schedule of various electrical equipment such as - Power transformers, small and large electric motors, generators used in power plants.
 - b. General testing procedure for repair and maintenance works - Continuity test, short circuit test, Repair of transformer and electric motors.

Pokhara University Service Commission
Curriculum for Deputy Instructor (Mechanical) Level Examination

Full Marks: 100

Pass Mark 50

1. Work shop technology & Metrology -

8 10

- 1.1 Basic tools and Basic hand operations
- 1.2 Machine tools: Lathe, Shaper, Milling, Grinding, Drilling Machines
- 1.3 Metal Joining: Soldering, Brazing, Gas welding, Arc welding
- 1.4 Types of fits
- 1.5 Linear Measurement: Block Gages, Length Bars, Comparators
- 1.6 Errors in measurement

2. Machine Drawing -

8 11

- 2.1 Finding out the missing views from two given projection and dimensioning
 - 2.1.1 Missing views of prismatic work pieces
 - 2.1.2 Missing views of cylindrical work pieces
 - 2.1.3 Missing views of pyramidal, conical, cylindrical cut work pieces
- 2.2 Isometric drawing of machine parts including sections
- 2.3 Drawing of joints
 - 2.3.1 Permanent joints
 - 2.3.2 Temporary joints
 - 2.3.3 Drawing Exercises
 - 2.3.3.1 Nut bolt and threaded joints
 - 2.3.3.2 Riveted joints
 - 2.3.3.1 Welded joints and symbols
 - 2.3.3.1 Gears, Keys and Spline joints
 - 2.3.4 Orthographic projection

3. Heat Engines -

9 12

- 3.1 Different types of heat engines
- 3.2 Different cycles involved in heat engines
- 3.3 Basic difference in Steam Engine and Automotive engines
- 3.4 Different types of power plants (engine) used in civil Aircraft

4. Thermodynamics & Heat Transfer -

9 15

- 4.1 General
 - 4.1.1 Boyle's law, Charles' law and combined gas law
 - 4.1.2 Characteristics of gas constant
 - 4.1.3 Terms used in thermodynamics
- 4.2 First law of thermodynamics
 - 4.2.1 Definition of the first law
 - 4.2.2 Total internal energy
 - 4.2.3 Mechanical equivalent of heat engine
- 4.3 Second law of thermodynamics
 - 4.3.1 Definition of the second law
 - 4.3.2 Thermal efficiency of heat engine
- 4.4 Thermodynamics Properties of Fluid (Definitions only)
 - 4.4.1 Internal energy
 - 4.4.2 Enthalpy

4.4.3 Entropy	
4.4.4 Specific heat at constant volume	
4.4.5 Specific heat at constant pressure	
4.5 Basic thermodynamics process	
4.5.1 Constant volume process	
4.5.2 Constant pressure process	
4.5.3 Constant temperature process	
4.5.4 Adiabatic process	
4.5.5 Polytropic process	
4.6 Petrol and Diesel Engine Cycles	
4.6.1 Constant volume cycle	
4.6.2 Constant pressure cycle	
4.6.3 Mixed cycle	
4.7 Modes of heat transfer: Conduction, Convection and Radiation	
5. Basic Industrial Management -	8 10
5.1 Labour law	
5.2 Rights of Unions	
5.3 wages and compensation	
5.4 Labour and Management relations	
5.5 Basic functions of ILO	
5.6 Industrial Hygiene and safety	
5.7 Industrial Policy and Act, 2049	
5.8 Basic functions of ICAO	
6. Basic Knowledge of Hydraulic Machines and Electro- Mechanical Principle -8	10
6.1 Basic Knowledge of AC and DC Motors	
6.2 Basic Knowledge of Generator	
6.3 Water turbines: Pelton, Francis, Kaplan and Cross flow (Working principle and Characteristic)	
6.4 Pumps: Centrifugal pump and Reciprocating pump (Working principle and Characteristic), Hydraulic ram	
7. Industrial Boiler -	8 10
7.1 Basic working principle	
7.2 Common types of Boilers	
7.3 Boilers Fules	
7.4 Boilers Efficiency	
8. Estimating and costing -	8 10
8.1 General	
8.1.1 Concept of profitability, break-even point, return on investment, liability, assets, fixed cost, variable cost, fixed capital, working capital equity, depreciation and amortization	
8.1.2 Elements of cost and classification	
9. Applied Mechanics -	9 12
9.1 Statics	
9.1.1 Coplanar system of intersecting forces	
9.1.2 Coplanar parallel forces, the moment of a force	
9.1.3 Centre of Gravity	

- 9.1.4 Friction
- 9.2 Kinematics
 - 9.2.1 Definition of technical terms: speed, velocity, acceleration, distance traversed and their units
 - 9.2.2 The trajectory of particles, distance and time
 - 9.2.3 Rectilinear motion of a particle
- 9.3 Composition of a simple motion of a particle
 - 9.3.1 Curvilinear motion of a particle
 - 9.3.2 Simple motion of a solid body
- 9.4 Dynamics
 - 9.4.1 Fundamental laws of dynamics: Newton's law of motion
 - 9.4.2 Work, Energy and Power
 - 9.4.3 Mechanical Energy
 - 9.4.4 Relation between RPM, Torque and Power
 - 9.4.5 Law of conservation of energy

Pokhara University Service Commission

Curriculum for Assist Instructor (Electronics) Level Examination

Time:4 hr

Full Marks : 100

Pass Marks: 50

<u>Topic</u>	<u>Marks</u>
1. Basic Electrical Engineering Principles	10 15
2. Electrical Measurement	10 15
3. Electronics Passive and active Components	10 15
4. Components of Digital Electronics and Computers	10 15
5. Basics of Colour Television	10 15
6. Communication Systems	10 15
7. Basics of Medical Electronics	10 10

Pokhara University Service Commission

Curriculum for Assist Instructor (Civil) Level Examination

Time:4 hr

Full Marks : 100

Pass Marks: 50

- 1. Workshop Practice:** Brick work; Carpentry and joinery; Plumbing; Safety practice; Workshop tools. 8 10
- 2. Engineering Drawings:** Plans, elevations and sections of buildings and civil engineering works; Dimensioning; Plumbing drawing; Roads and water supply drawings. 8 10
- 3. Surveying:** Principles of surveying; Classifications of surveying; Maps and conventional signs; Accuracy in surveying and errors; Linear measurements; Compass surveying including plotting and balancing the traverse; Leveling including precise leveling and errors; Plain table survey; Theodolite traverse survey; Types of theodolites and source of errors in theodolite works. 10 15
- 4. Engineering Materials:** Stones; Gravel; Sand; Bricks and other clay products; Timber and other forest products; Lime; Cement; Reinforcing steel; Structural steel; Paints and varnishes; Flooring materials; Cladding materials; Roofing materials. 8 10
- 5. Estimating and Costing:** Analysis of rates; Various types of estimates; Accuracy in estimating; Approvals; Estimating for road works, building works, water supply and sanitary works and irrigation works. 8 10
- 6. Soil Science:** Definition of soils; Types of soils; Formation and transportation of soils; Classification of soils; Weight – volume relationship; Index properties and their determination; Soil – water relation; Soil compaction and consolidation; Bearing capacity and effect of water on bearing capacity; Laboratory determination of various parameters. 9 10
- 7. Water Resource Engineering:** Source of water; Quality of drinking water; Quantity of water; Water treatment for domestic purpose; Water supply distribution system; Water supply pipes, valves and fittings; Rainfall and run off; Crop water requirement; Method of irrigation; Hill irrigation; Water logging and drainage. 8 10
- 8. Structural Engineering:** Steel trusses, columns and joints; Introduction of steel and timber truss design; Concept of RCC design; RC sections in simple bending, shear and bond; RCC Construction 8 10
- 9. Transportation Engineering:** Mode of transport; Concept of airport design; Merits and demerits of rail roads and highways; DoR classification of roads; Urban road pattern; Geometric design of highways; Highway drainage; Retaining structures; Highway pavement construction methods – WBM, Otta seal, SBST, DBST, Asphalt concrete; Quality of road aggregate; Quality of bitumen; Importance of compaction of sub grade and pavement layers; Highway maintenance; Special considerations for hill roads; Culverts and short span river crossings. 8 15