Recruitment Notice for Guest Lecturers & Part Time Instructor

Selected candidates shall be eligible for an amount of Rs.1000/- per hr for theory and Rs.500/- per hr for practical classes not exceeding Rs.25,000/- per month for Guest Lecturer (Diploma Program). For Part Time Instructor, Rs.750/- per day for the practical classes not exceeding Rs.18,000/- per month. Selection will be based on the performance of the candidates in the Demo theory and practical class. The venue for theory demo will be Audio Visual Room (AV Room) of the Institute and practical skill test will be conducted by the concerned departments.

S. No.	Details of requirement	Educational Qualification	Date and time	
			Practical	Theory
1	Guest Lecturer (Electrical)	First class B.E./B.Tech., from recognized university in relevant course	16.12.2024 9:00 am to 12:00 noon	16.12.2024 02:30 pm to 03:30 pm
2	Guest Lecturer (ECE)			
3	Guest Lecturer (Physics)	First class Master's Degree in appropriate subject with first class or equivalent at Bachelor's or Master's level	16.12.2024 9:00 am to 12:00 noon	17.12.2024 03:00 pm to 03:30 pm
4	Guest AP (Management)			
5	Part time Instructors (CSE)	Bachelor Degree in relevant field from a recognised university OR Diploma in relevant field from a recognised university/ Board OR Senior secondary pass(10+2) in Science subject from a recognised educational/ Technical Institution OR Senior secondary pass(10+2) with vocational course certificate in an appropriate trade with 3 years practical experience	16.12.2024 9:00 am to 12:00 noon	--------

9/12/24
Dean (Academics)

DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY, PORT BLAIR

DEMO TOPICS FOR GUEST FACULTY SELECTION PROCESS FOR THE SESSION 2024-25 (EVEN SEM)

S.NO.	DEPARTMENT	DEMO TOPIC	
		THEORY	**PRACTICAL**
1	ECE (GL)	**DIGITAL TECHNIQUES** (a) Digital Commuication System & Coding methods: Elements of basic digital communication system with its block diagram, source encoder , channel encoder & decoder, mosulation and demodulation, advantage and disadvantages. (b) Communication channel characteristic: Bit rate, baud rate, bandwidth, repeater distance. (c) PAM, PWM, PPM: Block diagram of transmitter and receiver with its working principle. (d) Pulse code modulation technique: sampling, quantization process, Nyquist sampling theorem, types of sampling, aliasing effect, quantization process, quantization error, command.	(a) Determine error code by VRC technique using suitable simulation tool. (b) Generation of Hamming Code for 4 bit data. (c) Generation of natural and flat top signal.
		WIRELESS & MOBILE NETWORKS (a) Wireless Local loop architecture. (b) GPRS architecture.	(a) Use AT Commands to understand working of 3G Networking using 3 G Mobile phone & trainer kit. (b) Simulate the Delta modulation using MAT LAB and Simulink.
		DIGITAL ELECTRONICS & MICROCONTROLLER APPLICATION (a) Implement - 4 Bit ripple counter using 7476. (b) Perform 8 bit addition.	(a) 8051 archtecture. (b) Master Slave JK flipflop. (c) 4 Bit Asynochronous counter.
		ELEMENTS OF ELECTRONICS (a) DC regulated power supply. (b) PN junction & Zener diode characteristic.	(a) Build / test zener voltage regulator for the given voltage. (b) Chracteristic of Zener diode.
		MICROPROCESSOR (a) 8086 micorprocessor - silent features pin description. (b) Memory segmentation, Physical memory address generation. (c) Machine language instruction format, adressing mode. (d) Model 8086 assembly language program. (e) Programming using assembler: Arithmetic operation on Hex and BCD number, sum of series, smallest and largest number from array, sorting numbers in Ascending and Decending order.	(a) Write an Assembly Language Program (ALP) to substract two given 8 and 16 bit numbers. (b) Write an ALP to performblock transfer data using string instructions. (c) Write an ALP to find sum of series of hexadecimal nembers. (d) Write an assembly language program using macros: (i) Write an ALP for addition, substraction, multiplication and division.
		BASIC ELECTRICAL & ELECTRONICS ENGG (a) PN Junction diode, symbol construction working & application. (b) Rectifire: Half wave, full wave and bridge rectifier, performancxe, parameter, PIV, ripple factor, efficiency.	(a) Test the performance of PN Junction diode. (b) Test the performance of Zener diode. (c) Identify the three terminal of transistor using digital multimeter.
2	CIVIL (GL)	**GEOTECHNICAL ENGINEERING** (a) Physical / Index properties of soil. (b) Strength test in soil. (c) Compaction & sonsolidation of soil.	(a) Sieve analysis of sol. (b) Consistency limits of soil.
		CONCRETE TECHNOLOGY (a) Properties of concrete. (b) Method of testing. (c) Mix design.	(a) Test for aggregates (course and find) (b) Test for cement. (c) Test for concrete.
		ENGINEERING MECHANICS (a) Simple lifting machine. (b) Analysis of forces. (c) Equilibrium of forces.	(a) Chain surveying. (b) Compass surveying. (c) Leveling. (d) Plane table surveying. (f)Theodolite surveying.

3	EE (GL)	Mesh/ Nodal Analysis	Verification of Kirchoff's laws
		RLC series ciruit & circuit resonance	Measurement of power in single phase AC circuit
		Measurement of single phase power using dynamometer wattmeter	Measurement of three phase power by two wattmeter method
		Construction and working principle of transformer	Determine the megnetising charactertistic of an alternator at different loads
		parallel operation of transformer	Open circuit and short circuit test of single phase transformer to determine efficiency
		SF6 Circuit Breaker	Load test on three phase induction motor to determine efficiency
		Construction and working of Buchholz Relay	Perform an experiment to reverse the direction od DC Shunt motor
		Different types of line insulators in transmission & distribution system	Staircase wiring & Go down wiring
		Different types of single phase induction motors	Wiring of electrical circuit to control lamp, fan and socket on wiring practice board
		Over current and earth fault protection of alternators	Starting and running of single phase induction motro in formward & reverse direction
4	CO/IT (GL)	**Programming with Python:** (a) Data structures in Python - list, set, tuple & dictionary (b) Python packages - NumPy, Pandas, Matplotlib, Scipy	a. Create and execute DDL commands b. Create and execute DML commands c. Solve queries using operators, functions, etc. d. Implement programs in C using array & structures e. Implement C prgram to demonstrate user defined functions f. Prepare and test straight & cross cable
		Database Management: (a) Entity and relationship model - entities, relationships, attributes (b)Transaction in DBMS - ACID properties, states of transaction (c) Database Backup - types of failure, causes of failure, database backup	
		Data Communication & Computer Network: (a) TCP/IP model (b) Multiplexing (FDM & TDM) (c)Switching (circuit switching and packet switching)	
		Computer Network: (a) Network laye protocols: ARP, RARP (b) Transport layer protocols - TCP, UDP	
		Programming in C: (a) Function (Call by value & call by reference) (b) Array & structures (c) Pointers	
5	ME (GL)	Development of surfaces.	1. Conic Sections.
		Angle of prjection (first & third both)	2. Isometric Projections.
		Losses in pipeline flow.	3. Orthographic Projection in AutoCAD.
		Heat treatment principles & process	4. Verification of Bernoulli's theorem.
		Concept of internal energy and entropy	5. Determination of Friction Factor.
		Second law of thermodynamics.	6. Linear measurement by Vernier Calliper.
		Working of Electro discharge machining (EDM)	7. Angular measurements by Sine bar & slip gauges.
		MPFI System.	8. Determine the M.A, V.R, Efficiency, ideal effort & effort lost in friction, state & justify whether machine is reversible or not for a given single purchase crab winch.
		Principle of direct & bending stress.	9. Determine the M.A, V.R, Efficiency, ideal effort & effort lost in friction, state & justify whether machine is reversible or not for a given double purchase crab winch.
		Principles of Hydraulic and Pneumatic systems.	10. Determine the M.A, V.R, Efficiency, ideal effort & effort lost in friction, state & justify whether machine is reversible or not for a given Differential wheel & axle.
6	THS (GAP &	1. Differentiation of implicit function 2. Lagrange method of undetermined multipliers 3. Area by double integration and volume by triple integration 4. First order linear differential equations 5. Partial fraction of proper and improper fraction. 6. Reduction of quadratic form into conical by orthogonal transformation 7. Expansion of periodic function into Fourier series 8. Solutions of linear simultaneous in the three variables by crammers rule. 9. Point of intersection of two lines, equation of line passing through point of intersection with given condition 10. Fourier's Transforms and its transverse	

7	Physics (GAP	1. Ultrasonic Wave Production 2. Lasers and fibre optics 3. Air wedge- Michelsion's interferometer 4. concept of double refraction 5. Nanomaterials- its synthesis, Properties and Application 6. Non destructive testing of materials 7. Nuclear Reactor 8. Application of Hall effect in the semiconductor 9. Super conductors and its application 10. Magnetic field and magnetic field Intensity	1. To study the coefficient of thermal conductivity of bad conductor by using Lee's disc method/ 2. Determination of thickness of given piece of sample by airwedge method 3. Determination of wavelength of monochromatic light by using diffraction grating 4. Determination of elasticity of a metallic wire by using searle's apparatus 5. Determination of law resistance by using meter bridge\determination of velocity of sound by resonance column 6. To determine the radius of curvature of a planoconvex lens using newton's ring apparatus 7. To determine the refractive index of glass prism by using Pin method 8. To determine the buoyancy force on solid immersed in liquid(Archemedies principle) 9. To determine the internal resistance of primary cell by using potentiometer 10. To calculate the magnetic moment and polestrenth of a bar magnet by using vibration magnetometer.
9	English (GL)	1. Strategies of effective communication 2. Importance of public speaking 3. passage in written and spoken form 4. comprehension of technical and non technical materials 5. Active and Passive Voice 6. Importance Of Comprehension 7. Phonetics 8. use of modern office equipments and gadgets 9. Types of communication 10. Use of articles in formulating sentences.	
10	MANAGEMENT (GAP & GL)	1. Needs for instruction and direction to subordinates 2. Preparation of balance sheet and profit-loss statement 3. needs for safety management measures 4. Planning at supervisory level-planning , detailing and following each step 5. types of Organization –steps in organizing 6. Business plan preparation 7. Incubation centre- Role and Procedure 8. Intrapreuner and Entrepreuner 9. Market study procedures 10. Total quality management	
11	Accounts (GL)	1. Cash book 2. Types of capital 3. Ledger 4. Need for hotel accountancy system 5. Generation of night audit report 6. Depreciation- meaning, causes, fixed installment and diminishing balance method 7. Preparation of final accounts. 8. Book of original entry-Journals 9. Principles of double entry systems in accountancy and its advantages 10. Direct and indirect taxes	

12	HOTEL MANAGEMENT (GL)	Food Production: methods of cooking, menu planning, kitchen stewarding, Herbs, Oriental cuisine, continental cuisine, frozen desserts, fish cookery, salad dressing & salads, stocks & sauces	Plan & prepare a 03 course menu of your choice which should include a starter veg/non veg, one main course & a dessert
		Food & Beverage service: wine classification, meals, Gin (production & examples), gueridon services, types of service, alcoholic beverage, function catering, wines of france, tobacco, distillation of sprits	Plan & prepare a 05 course continental menu & lay the table according to it
		Housekeeping: checkout & guest bill settlement, laundry, contract cleaning & renovation, interior designing, importance of selling & techniques, flower aggrangement, ecotels, polishes & polishing types used in Hotel industry, housekeeping organization chart for different types of hotels, laundry cycle	Prepare a flower arrangement as per the theme given
		Front Office: Types of hotel, types of keys, check in check out procedures, guest cycle, reservation modes and sources, types of rooms, duties & responsibilities of front office staff, food plan & modes of payments, front office organization, night auditing & role of night auditor	Plan & prepare a role play for a fussy guest

DEMO TOPICS FOR PART TIME INSTRUCTOR SELECTION PROCESS FOR THE SESSION 2024-25 (EVEN SEM)

S.No.	Department	Topic
1	CSE	C Programming Lab * Array and Structures * Pointers, Functions, Recursions * File Handling
		OS Installations
		Hardware and Networking
		Stack Data Sructure
		Queue Data Structure
		Linked List
		Dynamic memory allocation
		Searching algorithm
		Sorting Algorithm
		Tree Data Structure
2	CO/IT	OS installation
		Hardware Trouble Shooting
		Network Cabling and Troubleshooting
		C Programming * Array * Structures * pointer
3	Civil	(a) Sieve analysis of sol. (b) Consistency limits of soil. (c) Test for aggregates (course and find) (d) Test for cement. (e) Test for concrete. (f) Chain surveying. (g) Compass surveying. (h) Leveling. (i) Plane table surveying. (j)Theodolite surveying.