

Govt. Polytechnic Diglipur

DEMO TOPICS FOR GUEST FACULTY SELECTION PROCESS FOR THE SESSION 2023-24 (ODD SEM)

S.NO.	DEPARTMENT	DEMO TOPIC	
		THEORY	PRACTICAL
1	CIVIL (GL)	Concrete Technology: properties of concrete, methods of testing, mix design	Concrete Tehnology:test for aggregates (course & fine), test for cement, test for concrete
		Public Health Engg: calculation of water demand, quality of water, primay & secondary treatment of water	Public Health Engg: test for physical properties of water, test for chemical properties of water
		Highway geometrics, pavement construction, road maintenance	Surveying: chain surveying, compass surveying, levelling
2	CSE (GL)	Principle of database: normalization, ER model	Advance Java programming: write programme to implement chat server using server socket & socket class, design form with components list, choice, label, checkbox, text field.
		Advance java programming: socket programming, AWT	Client side scripting: develop java script to implement function, develop web page for creating session & persistent cookies
		Cleint side scripting: Function, cookies	Applied multimedia techniques:design wallpaper showing water drop effect of an image, design poster using different text effect, develop web page which shows animation with sound effect
		Data structure: stack queue	Data structure - radix sort, binary searching
		Computer graphics: windowing clipping	Computer graphics: DDA, Brehenham's algorithm
		Operating system: memory management	OS: CPU scheduling (FCFS)
		Software testing: test management, defect management	Workshop practice: assemble & dissemble of various part of computer system
		Object oriented programming using C++: inheritance and its types	OOP using C++: implementing concept of multiple inheritences based on the given scenario, implement concept of copy constructor
		Advance Computer network: IP addressing, transition from IPv4 to IPv6	Advance Computer Network: configure OSPF & RIP using packet tracer, establish cleint-server arhitecture using IPv6 addressing in packet tracer
		Database management system: triggers, transaction, processing	DBMS:implement trigger for insert, updating & deleting from the data base, design database on the given requiement &execute required DML commands by follwing referntial integrity constraints if required

3	MATHS (GL)	Differentiation of implicit function	
		Lagrange method of undetermined multipliers	
		Area by double integration and volume by triple integration	
		First order linear differential equations	
		Partial fraction of proper and improper fraction	
		Reduction of quadratic form into conical by orthogonal transformation	
		Expansion of periodic function into Fourier Series	
		Solution of linear simultaneous in the three variables by crammers rule	
		Point of intersection of two lines, equation of line passing through point of intersectin with given condition	
		Fourier's Transformation and its transverse	
4	PHYSICS (GL)	Ultrasounic Wave Proiduction	To study the coefficient of thermal conductivity of bad conductor by using Lee's disc method
		Laser and fiber optics	Determination of thickness of given piece of sample of airwedge method
		Air wedge-Michelson's interferometer	Determination of wavelength of monochromatic light by using fiffraction grating
		Concept of double refraction	Determination of elasticity of a metallic wire by using searle's apparatus
		Nanomaterials - its synthesis, properties and application	determination of law resistance by using meter bridge/determination of velocity of sound by resonance column
		Non destructive testing of materials	to determine the radius of curvature of a planoconvex lens using newton's ring apparatus
		Nuclear Reactor	to determine the refractive index of glass prism by using Pin method
		Application of hall effect in the semiconductor	to determine the buoyancy force on solid immersed in liduid (Archemedies principle)
		Super conductors and it application	to determine the internal resistance of primary cell by using potentiometer
		Magnetic field and magnetic field intensity	to calculate the magnetic moment & pole strength of a bar magnet by using vibration magnetometer

5	Chemistry (GL)	Conducting polymers- classification & application	to determine pH value of solution using pH meter & universal indicator
		Protective coating & its types in terms of corrosion	determination thinner content in oil plant
		Vulcanization- synthetic rubber	estimation of vinegar
		Super conductivity	estimation of available chlorine in Bleaching powder
		Desalination process- reverse osmosis & electrolysis	estimate the chlorine content of given water sample
		Moulding constituent of plastics & moulding techniques	estimation of magnesium by EDTA
		Different types of crystal structures with angle	determination of carbonates & bi-carbonates in water
		Qualitative idea of line, point surface & volume defect	determination of percentage of iron present given Hematite ore by $KMnO_4$ solution
		How to calculate Co-ordination number & atomic radius of FCP & HCC unit cells	determination of hardness of the sample water by EDTA method
		Dielectric polarization & mechanism	estimation of ferrous by permagnometry
6	ENGLISH (GL)	Strategies of effective communication	
		Importance of public speaking	
		passage in written & spoken form	
		comprehensive of technical & non technical materials	
		active & passive voice	
		importance of comprehension	
		Phonetics	
		Use of modern office equipments & gadgets	
		types of communication	
		use of articles in formulating sentences	