## B.E/B.TECH, M.E/M.TECH, MBA, MCA, POLYTECHNIC & SCHOOLS

Notes
Syllabus
Question Papers
Results and Many more...

Available @ www.binils.com

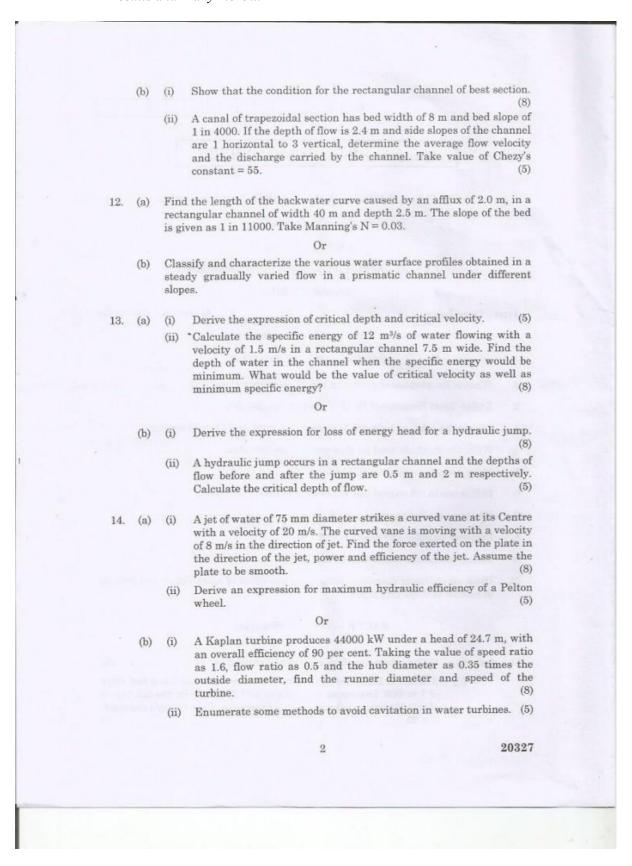
			Reg. No. :		
		Question	Paper Code	e:20327	
	В.	E./B.Tech. DEG	REE EXAMINATION	ONS, APRIL/MAY 20	022.
			Fourth Semeste	r	
			Civil Engineerin	ng	
		CE 8403 - AP	PLIED HYDRAULI	Control Section 1	
			(Regulations 201	7)	
Tim	ie : Three l	nours		Maximu	m: 100 mark
			Answer ALL quest	ions.	
		PAI	RT A — $(10 \times 2 = 20)$	marks)	
1.	What is the purpose of providing bed slope in open channels?				
2.	Define 'Most Economical Section' in open channel flow.				
3.	Obtain the relation between Manning's constant and Chezy's constant.				
4.	Write the methods used for flow profile determination				
5.	Draw specific energy curve. Mention its salient points.				
6.	Differentiate subcritical and super critical flow.				
7.	What are the functions of a draft tube?				
8.	Compare impulse and reaction turbines.				
9.	Define volumetric efficiency of pump.				
10.		Draw an indicator diagram, considering the effect of acceleration and fric in suction and delivery pipes.			
		PAF	RT B — $(5 \times 13 = 65)$	marks)	
11.	(a) (i)	Differentiate p	pipe flow and open o	hannel flow.	(8)
	(ii)	A concrete line of 1 in 600. De	ed circular channel etermine the veloci	of 3.6 m diameter h ty and flow rate for Discharge, Take Ch	as a bed slope the conditions
			Or		

Question Paper Sponsored by M.E.T. Engineering College, Chenbagaramanputhoor, Kanyakumari Dist.

## B.E/B.TECH, M.E/M.TECH, MBA, MCA, POLYTECHNIC & SCHOOLS

Notes Syllabus Question Papers Results and Many more...

Available @ www.binils.com



Question Paper Sponsored by M.E.T. Engineering College, Chenbagaramanputhoor, Kanyakumari Dist.

## B.E/B.TECH, M.E/M.TECH, MBA, MCA, POLYTECHNIC & SCHOOLS

Notes Syllabus Question Papers Results and Many more...

www.binils.com

Available @

15. (a) (i) Draw and explain characteristic curves for a centrifugal pump. (8) (ii) Derive an expression for the minimum speed for starting a centrifugal pump. Or A single-acting reciprocating pump, running at 60 r.p.m., delivers (b) (i) 0.53 m<sup>3</sup> of water per minute. The diameter of the piston is 200 mm and stroke length 300 mm. The suction and delivery heads are 4 m and 12 m respectively. Determine: Theoretical discharge, Co-efficient of discharge, Percentage slip of the pump, and Power required to run the pump. Explain with neat sketches the function of air vessels in a reciprocating pump. PART C —  $(1 \times 15 = 15 \text{ marks})$ 16. (a) Design an earthen trapezoidal channel for water having a velocity of 0.6 m/s. Side slope of the channel is 1:1.5 and quantity of water flowing is 3 m³/s. Assume C in Chezy's formula as 65. (b) Francis turbine has to be designed to develop 367.5 kW under a head of H = 70 m while running at N = 750 r.p.m. Ratio of width of runner to diameter of runner, n = 0.1, inner diameter is half the outer diameter. Flow ratio = 0.15, hydraulic efficiency = 95%, mechanical efficiency = 84%. Four percent of the circumferential area of runner to be occupied by the thickness of vanes, velocity of flow is constant and the discharge is radial at exit. Calculate: (i) the diameter of the wheel, (ii) the quantity of water supplied, and (iii) the guide vane angle at inlet and runner vane angles at inlet and exit. 3 20327

Question Paper Sponsored by M.E.T. Engineering College, Chenbagaramanputhoor, Kanyakumari Dist.