

(1) P.T.O. 206/**498**/521/13025

Differentiate between impulse turbine and a reaction

Why do draft tubes have enlarging passage area in

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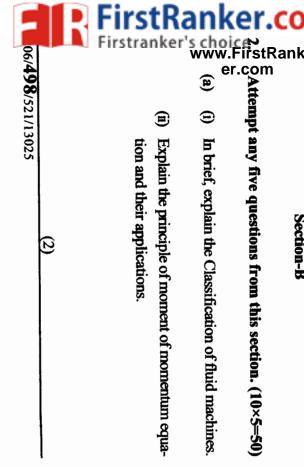
(c)

(d)

turbine?

the direction of flow?

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tion and their applications.

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What will be the total % work saved by fitting the air What do you mean by Maximum speed of a Recipro-(c) (i) Draw inlet and outlet velocity triangles for a pelton tion of motion (ii) Work done per second by the jet. wheel and indicate the direction of velocities.

cating Pump?

vessel? Explain.

Section-B

(d) A Kaplan Turbine runner is to be designed to develop (ii) A pelton wheel has a mean bucket speed of 10 and the diameter of the boss 1/3 the diameter of the runner. Find the diameter of the runner, its speed and ratio=2.09, flow ratio=0.68, overall efficiency 86% the specific speed of the turbine. 9100 kw. The net available head is 5.6 m. If the speed power and hydraulic efficiency. the jet through an angle of 160 degree. Calculate lit/sec under a head of 30m. The buckets deflects m/sec with a jet of water flowing at a rate of 700

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	W	above the ram. Also calculate the number of beats			
		per minute.	(b)	A single-acting reciprocating pump runnint at 50 rpm delivers 0.01 m <sup>3</sup> /s of water. The diameter of the piston	
om	nk 😑	With the help of a neat sketch explain the working principle of hydraulic ram and hydraulic press.		is 200 mm and stroke length 400 mm. Determine (i) the theoretical discharge of the pump (ii) Co-efficient of discharge (iii) slip and percentage slip of the pump.	NFIRST
cer.c	ice .FirstRa er.com	Section-C	5. (a)	Show that the work saved in overcoming friction in the pipelines by fitting air vessels is 84.8% for a single act-	
anl	w ve w	Note: Attempt any two questions from this section.  (15×2=30)		ing-reciprocating pump.	
:R	KEI		<b>(b)</b>	A centrifugal pump runs at 950 rpm, its outer and inner	
First	<u>a</u>	Explain the functions of the following parts of reaction tubine:		diameters are 500 mm and 250 mm. The vanes are set back at 35° to the wheel rim. If the radial velocity of	
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waste valve is 15cm. diameter and has an effective lift of 0.5cm and weighs 14.72 N. Estimat the quantity of water delivered per second in a tank 10 m

(a) Explain the torque converter and fluid coupling with neat

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water through the impeller is constant at 4 m/s wind. First (a) the angle of vance and the inlet. (b) the velocity of er. con water at exit (c) the direction of water at the outlet (d) the work done by the impeller per kg of water. Assume entry of water at inlet is radial.

**(6)** 

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