



(A Government Of Gujarat Undertaking)
Jalsewa Bhavan, Sector-10A, Chh Road, GANDHINAGAR – 382 010
GUJARAT WATER SUPPLY & SEWERAGE BOARD - GJTI

Professional Exam of Deputy Executive Engineer & AEE's (Mechanical)
SUBJECT: Special Subject (Mechanical) - BORING

Date: 10/15/2015

TIME: 1030 to 1330 hrs.

Max Marks: 75

Part A (To be Completed & Returned in 45 minutes)

ROLL NUMBER:

Please Write both in figures & Words.

Objective Questions : 1 Mark each.

No Negative Marking. MARKS: 25

Instructions: You are monitored by CCTV, Any candidate observed copying shall be considered disqualified for the entire examination.

Please Tick the Answer in Box : (To be Returned in 45 minutes)

1 What is the yield in LPS, if height of water flow is 4.25 inch through 90° V Notch?

a	6.35	<input type="checkbox"/>
b	321.20	<input type="checkbox"/>
c	370.54	<input type="checkbox"/>
d	5.35	<input type="checkbox"/>

2 What type of Pump will be preferred for following parameters?
Suction Lift = 300 cms, Deliver Head=30 mts & Discharge 24000 LPM

a	Positive Displacement Pump.	<input type="checkbox"/>
b	Centrifugal Horizontal End Suction Pump.	<input type="checkbox"/>
c	Centrifugal Vertical Turbine Pump.	<input type="checkbox"/>
d	Centrifugal Horizontal Axial Split Casing Pump	<input type="checkbox"/>

3 What will be the Motor KVA Rating, for 400000 W Motor with 94% efficiency & 0.85 pf?

a	500 KVA.	<input type="checkbox"/>
b	450 KVA.	<input type="checkbox"/>
c	470 KVA.	<input type="checkbox"/>
d	750 KVA	<input type="checkbox"/>

4 What will be the requirement of Capacitor Bank to increase power factor from 0.75 lagging to 0.95 lagging for 250000 W load with 3 phase 415 50 Hz AC power supply?

a	130 KVAR.	<input type="checkbox"/>
b	150 KVAR.	<input type="checkbox"/>
c	140 KVAR	<input type="checkbox"/>
d	160 KVAR.	<input type="checkbox"/>

5 As per IS: 2974 (Part-iv) -1979 & latest the total load of the pump & foundation should also include following apart from other load considerations:

- i) 3 times the weight of Motor
- ii) 2 times the weight of Pump
- iii) $\frac{1}{2}$ weight of unsupported pipes connected to the pump flanges
- iv) 3 times the weight of Pump
- v) 2 times the weight of Motor.

a	i, iii & v.	<input type="checkbox"/>
b	ii, iii & iv.	<input type="checkbox"/>
c	iii, iv & v.	<input type="checkbox"/>
d	None of the above.	<input type="checkbox"/>

M-3
1



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6 While starting Low & medium specific speed Centrifugal Pumps, Manually operated Delivery Valve should be

a	Fully Open	
b	Fully tight closed	
c	Half Open	
d	Slightly open / loose near to closed position	

7 Preventive maintenance scheduling is primarily for the improvement of

a	Reliability	
b	Maintenance effectiveness	
c	System effectiveness	
d	None of the above	

8 The maximum velocity in a circular pipe where flow is laminar occur at

a	The top of the pipe	
b	The bottom of the pipe	
c	The centre of the pipe	
d	Not necessarily at the centre	

9 Due to which of the following phenomena water hammer is caused.

a	In compressibility of fluid	
b	Sudden opening of a valve in a pipe line	
c	The material of the pipe being elastic	
d	Sudden closure (partial or complete) of a valve in pipe flow	

10 What will happen if requirement of NPSHR for a given pump is not satisfied ?

a	The pump will get cavitated	
b	The pump will have a low efficiency	
c	The pump will not develop head	
d	All of the above	

11 While designing W/s scheme for Urban areas, what is the value of I_{pcd} considered?

a	100	
b	70	
c	140	
d	None Of the above.	

12 The temperature rise in a cable conductor depends on which of the following?

a	The overall diameter	
b	The length of the conductor	
c	The cross sectional area	
d	All of the above	

13 A charged capacitor possesses _____ energy

a	Kinetic	
b	Potential	
c	Electrostatic	
d	Magnetic	