

Printed Pages : 3



EAG603

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 180612

Roll No.

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B. Tech.

(SEM. VI) THEORY EXAMINATION, 2014-15 GROUND WATER, WELLS & PUMPS ENGINEERING

Time : 3 Hours]

[Total Marks : 100

Note: The question paper is divided into three sections. Attempt each section. Assume data suitably if required.

SECTION - A

- 1 Attempt all short answer type questions: (10×2=20)
 - (a) What is well interference?
 - (b) What is aquifer? Mention its types.
 - (c) What do you mean by open well?
 - (d) What do you mean by priming of pump?
 - (e) Why ground water recharge is essential?
 - (f) Name any eight water lifting devices.
 - (g) List the component parts of Centrifugal pump.
 - (h) Write short note on hydraulic ram.
 - (i) List the types of well screen. Enumerate its basic function.
 - (j) What is hydraulic conductivity?

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[Contd...

SECTION - B

- 2 Attempt any three parts of the following: (10×3=30)
- (a) What is the basic principle involved in the development of bore wells? Explain the development by surging.
 - (b) Discuss the ground water exploration techniques.
 - (c) Write an essay on "sub-surface exploitation and estimation of ground water potential".
 - (d) What do you mean by capacity of pump? A centrifugal pump at its best point of efficiency discharges 0.03m^3 of water per second against a total head of 40m when the speed is 1450 rpm. Compute the specific speed of pump.
 - (e) On what principle a centrifugal pump works? Describe the construction and working of a centrifugal pump.

SECTION - C

- 3 Attempt all question: (10×5=50)
- (a) Describe any one method for drilling of wells.

OR

- (a) What are the types of aquifers? Classify wells which are common in Indo-gangatic plains of Uttar Pradesh ?
- (b) What are common pump troubles and their causes? Explain the remedial measures.

OR

- (b) Explain the selection and installation of horizontal centrifugal pump.

- (c) How will you determine the unsteady state flow to well in confined aquifers by "Theis" method ?

OR

- (c) Write step-by step the procedure for ground water project formulation?
- (d) What are the aquifer parameters? How will you determine it by Jacob's method?

OR

- (d) What do you mean by leakage factor? How will you determine the aquifer parameters by Chow's method?
- (e) Discuss the effect of speed on head capacity and pump capacity.

OR

- (e) What do you mean by performance curves? Sketch the typical performance curves of a centrifugal pump.
