Printed Pages : 3

EAG603

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

PAPER ID : **180612**

Roll No.

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?

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.
