



**MCA-003-045304**

Seat No. \_\_\_\_\_

**B. Voc. (Chemical Tech.) (Sem. III) (CBCS) Examination**

**December – 2016**

**BVCT-304 : Water Analysis**

**Faculty Code : 003**

**Subject Code : 045304**

Time : Hours]

[Total Marks : 70

1 (a) Answer the following questions : 10

- (1) Give preservation technique for the chloride ion in water.
- (2) According to WHO, the limit of arsenic in drinking water is \_\_\_\_\_ ppm.
- (3) How will you prepare 1000 ml, 0.01 N  $H_2SO_4$  for the estimation of alkalinity of water?
- (4) The Erichrome Black T used as catalyst. True or false?
- (5) Conductivity is the measure of the ability of water to carry the ion. True or false?
- (6) Give sampling method for the determination of B.O.D in water.
- (7) As per drinking water standard in India, the limit of Ca and Mg in drinking water is \_\_\_\_\_ ppm and \_\_\_\_\_ ppm respectively.
- (8) The other name of ammonium purpurate is \_\_\_\_\_.
- (9) The acceptable value of pH of potable water is \_\_\_\_\_.
- (10) What do you mean by the term residual chlorine and how will you measure?

(b) Answer the following questions : 20

- (1) Describe procedure to measure total dissolve solid.
- (2) Give process for the calibration of pH meter.
- (3) Give difference between permanent and temporary hardness of water.
- (4) What is density? Explain method to measure density of water.
- (5) Give preservation techniques of the following ions :  $\text{CN}^-$  and  $\text{Zn}^{+2}$ .
- (6) Give process for the determination of  $\text{p}^{\text{H}}$  of water.
- (7) Which type of sample container is used in the estimation of silica and chloride?
- (8) Give step by step procedure to prepare 10 ppm solution of copper using copper sulphate as copper source.
- (9) Give difference between BOD and COD.
- (10) Explain automatic sampling method.

2 Answer any 4 out of the following 6 questions : 20

- (1) Give process for the determination of dissolve oxygen.
- (2) Write a note on estimation of chloride in drinking water.
- (3) Give preservation techniques of the following ions :
  - (a)  $\text{Ca}^{+2}$
  - (b)  $\text{Zn}^{+2}$
  - (c)  $\text{Cl}^-$
  - (d)  $\text{PO}_4^{-2}$

- (4) Give process for determination of COD of water sample.
- (5) Discuss the process for the estimation of iron in drinking water.
- (6) What is turbidity? Describe process for determination of turbidity of water.

**3** Answer any 4 out of the following 6 questions : **20**

- (1) What is conductivity? Describe process for determination of conductivity of water.
  - (2) Explain principle and working diagram of R.O. purification technique.
  - (3) Give process for determination of total alkalinity and total acidity of water.
  - (4) Illustrate process for the determination of lead in water.
  - (5) Give process for determination of copper ion in water.
  - (6) What is hardness of water and give process determination of hardness of water.
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