AQ-003-045102 Seat No. _____

BVOC (CHE TECH) (Sem. I) (CBCS) Examination

March/April - 2016

BVCT-102 : Core Fundamental Industrial Chemistry - I

Faculty Code : 003
Subject Code : 045102

Time : **3** Hours] [Total Marks : **70**

Instructions : (1) All questions are compulsory and carry equal marks.
(2) Draw diagram and / or scheme wherever necessary.

1 (a) Answer the following Multiple Choice Questions : **10**

(1) Which of the following is correct conversion of pressure units
(a) 1 N/m^2 = 1 Pascal
(b) 1 atm = 1 bar
(c) 1 N/m^2 = 1.5 Pascal
(d) 1.5 N/m^2 = 1 Pascal

(2) When a measured value of a parameter is very close to the true value, it is known as _____.
(a) Accurate (b) Inaccurate
(c) Precise (d) Non -precise

(3) _____ means transportation of fluid (liquid or gas) from one point to another.
(a) Fluid (b) Flow
(c) Flare (d) All of the above

(4) _____ is remote temperature sensing instrument
(a) Mercury thermometer
(b) Radiation Pyrometer
(c) Both (a) & (b)
(d) None

(5) _____ is primary element of expansion thermometer.
(a) Bore (b) Well
(c) Stem (d) Bulb

(6) _____ is utilized to fill the gap between thermometer wall and bulb.

(a) Volatile Fluid (b) Non-Volatile Fluid
(c) Acidic fluid (d) Basic Fluid

(7) A material which becomes more viscous over time when shaken

(a) Rheopectic material
(b) Thixotropic material
(c) Gel
(d) Paste

(8) Density of a substance is defined as

(a) Volume of substance
(b) Mass per unit volume
(c) Volume per unit mass
(d) None of these

(9) Which property measures the resistance of liquid to flow

(a) Relative density (b) Temperature
(c) Viscosity (d) Pressure

(10) Which is more viscous in the following :

(a) Castor oil (b) Honey
(c) Paraffin (d) Kerosene

(b) Answer the following Multiple Choice Questions : **20**

(1) Which of the following energies are considered during a flow of fluid through a pipeline?

(a) Pressure energy, Kinetic energy & Potential energy
(b) Pressure energy, Vibrational energy & Potential energy
(c) Thermal energy, Kinetic energy & Potential energy
(d) Pressure energy, Kinetic energy & Rotational energy

(2) _____ and _____ are the types of flow meters.

(a) Thermometer, Orificemeter
(b) Venturimeter, Brookfield
(c) Pitot tube, Rotameter
(d) Ball mill, Thermometer

(3) The _____ equation for fluid flow is based on _____
(a) Bernoulli's, Law of conservation of mass
(b) Continuity, Law of conservation of energy
(c) Bernoulli's, Law of conservation of energy
(d) Continuity, Law of conservation of momentum.

(4) Bourdon tube is _____ element & Pointer is _____ element of thermometer,
(a) Secondary, Primary
(b) Functioning, Manipulation
(c) Primary, Secondary
(d) Manipulation, Functioning

(5) 100°C = _____ °F, 40°C = _____ °F.
(a) 0,100 (b) 212, 104
(c) 104, 212 (d) 100, 0

(6) When _____ of thermometer increases _____ decreases.
(a) Span, Sensitivity
(b) Fidelity, Span
(c) Upper Dead zone, Lower Dead zone
(d) None

(7) Unit of capacitance is _____ and unit of force is _____.
(a) Farad, Newton (b) Farad, Hertz
(c) Volt, Joule (d) None of these

(8) _____ and _____ are used for liquid level measurement?
(a) Bubbler system, Thermocouple
(b) Thermocouple, Saybolt
(c) Saybolt, Redwood
(d) Float type, Pressure gauge

(9) Capillary viscometer is known as _____ and rheometer is also known as _____ viscometer
(a) Ostwald, rotational
(b) Ostwald, Saybolt
(c) Redwood, rotational
(d) Rotational, Brookfield

(10) _____ and _____ are instruments for pressure measurement.
(a) Manometer, Centrifugal pump
(b) Barometer, Reciprocating pump
(c) Venturimeter, Manometer
(d) Barometer, Manometer

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

(1) Explain in detail construction and working of single coil siphon for measurement of pressure of corrosive liquid.

(2) Explain in detail construction and working of Bellow gauge.

(3) Explain mercury thermometer with detailed diagram.

(4) Give characteristics of instruments in detail.

(5) Explain the construction, working and diagram of a magnetic method of density measurement.

(6) Explain Air trap method for measurement of level.

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

(1) Explain in detail construction and working of Pitot tube.

(2) State and derive Continuity equation.

(3) Explain in detail : Optical Pyrometer.

(4) Explain construction, working and diagram of Redwood viscometer.

(5) Explain the construction, working and diagram of a vibrational method of density measurement.

(6) Explain Bubbler system for level measurement.
