ONDO STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY, OKITIPUPA
FACULTY OF SCIENCE
DEPARTMENT OF CHEMICAL SCIENCES
SECOND SEMESTER CONTINUOUS ASSESSMENT TEST 2017/2018 SESSION
CHM 154: INTRODUCTORY PHYSICAL CHEMISTRY Time Allowed: 20 MINUTES

INSTRUCTION: ANSWER ALL QUESTIONS BY SHADING THE CORRECT ANSWER IN THE SPACES PROVIDED BELOW

1. Calculate the equivalent weights of this compound $KMnO_4$ (a) 31.67 g/equiv (b) 3.67 g/equiv (c) 63.34 g/equiv (d) 23.67 g/equiv
2. A solution of sulphuric acid contains 86 g of H_2SO_4 per litre of solution. Calculate the normality of this solution (a) 1.754N (b) 7.15N (c) 49N (d) 2.75N
3. Give the concentration of all the ions in this compound 0.6M $Fe_2(SO_4)_3$ (a) 1.2 & 0.6 (b) 0.6 & 0.6 (c) 1.2 & 1.2 (d) 0.3 & 1.6
4. Surrounding is the part of the universe (a) not under study (b) under study (c) already studied (d) about to be studied
5. _____ is a system that permits the transfer of energy (heat) and materials to the surroundings (a) Semi Open system (b) Semi Closed system (c) Closed system (d) Open system
6. Consider the reaction: $H_2O_{(l)} \longrightarrow H_2O_{(g)}$. Given that $\Delta H\, H_2O_{(l)} = -285.85 Kjmol^{-1}$; $\Delta H\, H_2O_{(g)} = -241.82 Kjmol^{-1}$. the Standard enthalpy of the reaction is? (a) -44.0 $Kjmol^{-1}$ (b) +44.0 $Kjmol^{-1}$ (c) -34.0 $Kjmol^{-1}$ (d) +34.0 $Kjmol^{-1}$
7. Dissociation and isomerization of a single reactant molecule could be referred to as a (a) bimolecular step (b) Unimolecular step (c) Termolecular step (d) Elementary step
8. What are the stoichiometric coefficients of Nitrogen, Hydrogen and ammonia in a well balanced reaction equation describing the Haber process (a) Nitrogen-1, Hydrogen-2, Ammonia- 3 (b) Nitrogen-1, Hydrogen- 3, Ammonia-2 (c) Nitrogen-3, Hydrogen-2, Ammonia- 1 (d) Nitrogen-2, Hydrogen-1, Ammonia- 3
9. A reaction where there is no dependence of the half life on concentration is an example of (a) Second order reaction (b) Third order reaction (c) First order reaction (d) Zero order reaction
10. $K_c = 0.040$ for the system: $PCl_{5(g)} \rightleftharpoons PCl_{3(g)} + Cl_{2(g)}$ at 450°C. Evaluate Kp for the reaction at 450°C (a) 0.40 (b) 0.64 (c) 2.4 (d) 0.052
11. Equilibrium reaction are found in large scale in production of (a) ammonia (b) sulphuric acid (c) lactic acid (d) both A and B
12. System of reaction in which no reactant leaves reaction mixture is termed as (a) open system (b) closed system (c) semi-open system (d) partially closed system
13. Give the name of the scientist who defined acid as: acid is a proton donor while base is a proton acceptor. (a) Arrhenius (b) Newton (c) Kelvin (d) Bronsted Lowry
14. What is the concentration of H^+ ions in moles per dm^3 of a solution of pH 4.398
a) 4.0×10^{-5} b) 4.4×10^{-5} c) 8.4×10^{-5} d) 8.4×10^{-5}
15. From the reaction $H_2O_{(l)} + H_2O_{(l)} \rightleftharpoons H_3O^+_{(aq)} + OH^-_{(aq)}$, The Conjugate base is —— (a) HCl (b) H_2O (c) H_3O^+ (d) OH^-

Candidate's Name: _____
Matric No: _____
Department: _____
Course of study: _____

	A	B	C	D		A	B	C	D		A	B	C	D
1					6					11				
2					7					12				
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