

PARUL UNIVERSITY
PARUL INSTITUTE OF APPLIED SCIENCES
MID SEMESTER INTERNAL EXAMINATION, APRIL 2017
M. Sc. Semester II
Subject: Chemistry

Paper Code: 11205154

Title of the paper: Analytical Chemistry II

Date: 13 /04/2017

Time: 12.30 p.m. to 02.00 p.m.

Maximum Marks: 40

- 1. All questions are compulsory and options are given in first and second question only.**
- 2. Numbers to the right of question indicate the marks of respective question.**

Q. 1 Attempt any one question of the following. **(08)**

(i) Write an explanatory note on Principle, instrumentation and applications of NMR spectroscopy?

(ii) Calculate the Mean, Mode, S.D. and coefficient of skewness for following data

Age below	10	20	30	40	50	60
No. of persons	15	32	51	78	97	109

Q. 2 Attempt any three questions of the following. **(12)**

(i) Calculate the mean deviation from mean and median from the given data- 7,4,10,15,9,12,7,9,7.

(ii) Write the merits and demerits of arithmetic mean?

(iii) Write a note on solvents used in NMR.

(iv) Write the factors which affect chemical shift?

(v) Write a short note on hyperfine splitting?

Q. 3 Do as directed. Attempt all five questions. **(05)**

(i) Write the full form of CMR?

(ii) Write the formula used to calculate standard deviation?

(iii) Name the different types of mean?

(iv) Give examples of the compounds which show anisotropic effect?

(v) What is the other name of quartile deviation?

Q. 4 Write correct option in your answer sheet for following 15 multiple choice questions. **(15)**

1 Which of the following are expected to show nuclear spin transitions.

(A) H-1

(B) C-12

(C) O-16

(D) F-19

2 Which among the following is an example of measurement of central tendency?

(A) Mean

(B) Median

(C) Mode

(D) All

3 Vinyl Chloride is expected to show how many NMR signals

(A) 1

(B) 2

(C) 3

(D) 4

- 4 The exact values of δ and τ scale for protons depend upon
- (A) Substituent effect (B) Solvent effect
(C) H-bonding (D) All
- 5 Alkyne is an example of showing
- (A) Anisotropic Effect (B) Isotropic effect
(C) Solvent Effect (D) None
- 6 How many NMR signals can be expected from cyclohexane?
- (A) 1 (B) 2
(C) 3 (D) None
- 7 Given the following data set, what is the value of the median? [8,6,10,16,4,3]
- (A) 2 (B) 7
(C) 4.5 (D) 10
- 8 The mean is-
- (A) The statistical or arithmetic average. (B) the middlemost score.
(C) the most frequently occurring score. (D) the best representation for every set of data
- 9 Marks obtained by 9 students in a statistics paper are 52,75,40,70,43,40,65,35,48. the mean will be -
- (A) 47 (B) 51
(C) 52 (D) 75
- 10 The symbol of standard deviation is
- (A) σ (B) δ
(C) τ (D) ϵ
- 11 The geometric mean of 4,8,16 will be -
- (A) 8 (B) 10
(C) 4 (D) 16
- 12 Marks obtained by 7 students of a class are -15,12,13,17,18,15,7,12,11,the mode will be-
- (A) 15 (B) 12
(C) 17 (D) 18

- 13** The range of – 129,122,123,121,124,128,130 will be-
- (A) 9 (B) 19
(C) 90 (D) 99
- 14** The coefficient of range is equal to-
- (A) $\frac{l-s}{l+s}$ (B) $|L-S|$
(C) $[L-S]$ (D) $L-S/L+S$
- 15** Skewness represents-
- (A) Symmetry (B) Asymmetry
(C) All (D) None

-----ALL THE BEST-----