



UNIVERSITY OF THE PUNJAB

Fifth Semester – 2019

Examination: B.S. 4 Years Program

Roll No. in Fig.

Roll No. in Words.

PAPER: Analytical Chemistry
Course Code: CHEM-307 Part-I (Compulsory)

MAX. TIME: 15 Min.
MAX. MARKS: 10

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Signature of Supdt.:

Attempt this Paper on this Question Sheet only.

Please encircle the correct option. Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

Q.1. Encircle the right answer, cutting and overwriting is not allowed. (1x10=10)

- i). _____ test is also known as Dixon's test.
- a) F-test (b) t-test
c) Q-test (d) X-test
- ii) Components which have small value of K have affinity for
- (a) mobile phase (b) stationary phase
(c) no phase (d) solution
- iii) Number of significant figures in 800.0 is _____
- a) one (b) two
c) four (d) six
- iv) The identification of elements, species and/or compounds present in a sample is known as _____
- a) Quantitative analysis (b) Qualitative analysis
c) Structural analysis (d) Both a & b
- v) The rounding off form of 9.47 is _____
- a) 9.4 (b) 9.5
c) 9.47 (d) All
- vi) Aqueous slurry of adsorbent powder is mixed with _____ binder to help it to adhere the plate in TLC.
- a) Plaster of paris (b) Gypsum
c) Polyvinyl alcohol (d) All
- vii) The cellulose filter paper used in paper chromatography is _____
- a) Hydrophobic (b) coloured
c) hydrophilic (d) none of the above
- viii) The range of vacuum ultraviolet region is _____
- a) 800 - 400nm (b) 400 -200nm
c) 200 - 50 nm (d) None
- ix) $\log(I_0/I) = \epsilon Cl$, where ϵ is called as _____
- a) Molar extinction coefficient (b) Molar absorption coefficient
c) Molar absorptivity (d) All
- x) Shifting of max towards the shorter wavelength is called _____
- a) bathochromic shift (b) hypsochromic shift
c) hyperchromic shift (d) hypochromic shift



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Fifth Semester – 2019

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Roll No.

PAPER: Analytical Chemistry

Course Code: CHEM-307 Part – II

MAX. TIME: 2 Hrs. 45 Min.

MAX. MARKS: 50

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q.2. Questions with short answers.

(10x2=20)

- 1) A concentrated solution of 37% HCl having density 1.19g/ml is provided. What is the molarity of HCl?
- 2) What is the difference between precision and accuracy? Give example.
- 3) What is the main function of binder in TLC?
- 4) Define standard deviation? Give its formula.
- 5) Define confidence limit and give its formula?
- 6) What are the advantages of double beam spectrophotometer over single beam spectrophotometer?
- 7) Define Beer- Lambert's law.
- 8) What is the difference between partition and adsorption chromatography?
- 9) Write down 2 limitations of TLC.
- 10) What is kieselguhr? Where is it used?

Q.3. Questions with brief answers.

(3x10=30)

- i. (a) What is the difference between systematic and random errors? Explain with examples. (5)
(b) Define student t-test? What are the applications of F-test? (5)
- ii. (a) Discuss the methods for the detection of colorless spots in TLC? (5)
(b) What are the different types of adsorbents used in column chromatography? (5)
- iii. (a) How do electromagnetic radiations interact with matter? Explain. (5)
(b) How does photomultiplier tube work in UV/Vis spectrophotometers? (5)