

Council for Technical Education and Vocational Training
Office of the Controller of Examinations
Sanothimi, Bhaktapur

Regular/Back Exam – 2080 Mangsir/Poush

Program: Certificate in Medical Lab. Tech.

Full Marks: 40

Year/Part: 3rd Year (2019)

Pass Marks: 16

Subject: Instrumentation and Automation

Time: 1½ hrs.

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group A

[2×6=12]

Attempt any **TWO** questions.

1. Define automation. Explain introduction, working principle and application of centrifugal analyzers.
2. Define photometry. Explain different types of photometric system used in laboratory.
3. Describe working principle and application of arterial blood gas analyzers.

Group B

[4×4=16]

Attempt any **FOUR** questions.

4. Define auto analyzer. Explain about continuous flow analyzer.
5. Explain use of computer system in automation.
6. Describe application and advantages of dry chemistry analyzers.
7. Write in detail about coulter counter on the basis of working principle, components and applications.
8. Explain about introduction and use of centrifuge machine.

Group B

[6×2=12]

Write short notes on: (any **SIX**)

9. PCR
10. Analytical balance
11. Radioimmunoassay (RIA)
12. CLIA
13. Spectrophotometer
14. pH meter
15. Bio-safety cabinets

Good Luck !