Graphic Era
HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

~~GEHU/04M/9.1.3~~
GEHU/02E/9.1.3

End Term Semester Examination [redacted] NOV 2025

Roll no.....

Name of the Course and semester: BCA I *Semester* / BCA AI & DS

Name of the Paper: Computational Thinking and Fundamentals of IT

Paper Code: **TBC 101/TBL101** / TBD101

Time: 3 hour | Maximum Marks: 100

Note:
(i) Answer all the questions by choosing any one of the sub questions
(ii) Each question carries 10 marks.

Q1. (10 marks)

a) What is Computer? Draw and explain the block diagram of computer. CO3
b) What do you understand by Computational thinking? Why is data representation important in computational thinking? CO1
c) Explain the difference between Algorithm and Flowchart with one example. CO2

Q2. (10 marks)

a) Differentiate between general purpose and Special purpose computers. (explain types). CO3
b) How is computational thinking applied in real-life situations? CO1
c) Explain the following: CO4
   i. 4GL language
   ii. Compiler and Interpreter
   iii. High level and Machine level Language
   iv. GUI Interface and CUI Interface

Q3. (10 marks)

a) Convert the following: CO5
   - $(126)_8$ = $(?)_{16}$
   - $(101011)_2$ = 1's and 2's complement
   - $(218)_{10}$ = $(?)_2$
   - $(1101011)_2$ = $(\ )_{10}$
   - $(2DA)_{16}$ = $(?)_{10}$

b) What is operating system? Explain its functions and types of operating system. CO4
c) Explain pseudocode?. Also draw a flowchart to find the factorial of a number CO1 & CO2

Q4. (10 marks)

a) Explain memory hierarchy of computer C04
b) Define evolution of computer. Differentiate between fourth and fifth generation of computers. CO3
c) Define what is Network? Also explain Topology with its types and diagram. CO5

Q5. (10 marks)

a) Differentiate between Hardware and Software (explain any 2 types). CO3 & CO4
b) Explain the difference between Algorithm and Flowchart with one example. CO2
c) Explain the following: CO5

End Term Semester Examination ~~2023~~ NOV 2025

i. ASCII and EBCDIC
ii. Internet and intranet
iii. modem
iv. Network Protocols