CCICOMP T1 AY2023-2024
Midterm Exam Reviewer

General Instructions:

1. Final answers should be written in CAPITAL letters on the answer sheet using blue or black ink. Pencils are not allowed.
2. If the correct answer is not among the choices given, write "E".
3. Calculators are not allowed.
4. On a separate sheet of paper, show your complete solution. Label each number clearly. Put a box on your final answer.
5. Any form of cheating during the examination is punishable by a grade of 0.0 for the course and subject to disciplinary action.

Multiple Choices:

1. 25_{10} is equivalent to $\_\_\_{2}$.
   A. 11001 C. 11011
   B. 10101 D. 11000

2. 74_{10} is equivalent to $\_\_\_{8}$.
   A. 110 C. 112
   B. 111 D. 113

3. 88_{10} is equivalent to $\_\_\_{16}$.
   A. 58 C. 38
   B. 5B D. 3B

4. 11010010_{2} is equivalent to $\_\_\_{10}$.
   A. 208 C. 210
   B. 209 D. 211

5. 11010011_{2} is equivalent to $\_\_\_{8}$.
   A. 323 C. 322
   B. 332 D. 333

6. 01010010_{2} is equivalent to $\_\_\_{16}$.
   A. A2 C. A1
   B. 52 D. 51

7. 124_{8} is equivalent to $\_\_\_{10}$.
   A. A4 C. 84
   B. 24 D. 48

8. 37_{8} is equivalent to $\_\_\_{2}$.
   A. 110111 C. 101111
   B. 011111 D. 111110

9. 152_8 is equivalent to $\_\_\_{}_{16}$.
   A. 106
   B. 3A
   C. 6A
   D. C4

10. 20_{16} is equivalent to $\_\_\_{}_{10}$.
   A. 32
   B. 40
   C. 16
   D. 36

11. DB_{16} is equivalent to $\_\_\_{}_{8}$.
   A. 219
   B. 338
   C. 214
   D. 330

12. $4E_{16}$ is equivalent to $\_\_\_{}_{2}$.
   A. 0111 0010
   B. 1110 0100
   C. 0100 1011
   D. 0100 1110

13. $10_2 + 1101_2 + 1011_2 + 011_2 = \_\_\_{}_{2}$.
   A. 11011
   B. 11101
   C. 10110
   D. 11010

14. $101100_2 – 1001_2 = \_\_\_{}_{2}$.
   A. 100111
   B. 100010
   C. 100011
   D. 000011

15. $101_2 \times 011_2 = \_\_\_{}_{2}$.
   A. 01111
   B. 11110
   C. 01010
   D. 10101

16. $101_2 / 011_2 = \_\_\_{}_{2}$.
   A. 001 r. 010
   B. 100 r. 100
   C. 001 r. 100
   D. 100 r. 010

17. 5.625_{10} is equivalent to $\_\_\_{}_{2}$.
   A. 101.101
   B. 101.110
   C. 010.101
   D. 010.010

18. 1010.1001_2 is equivalent to $\_\_\_{}_{10}$.
   A. 10.125
   B. 10.5625
   C. 10.725
   D. 10.9

19. The 8-bit sign and magnitude representation of $- 25_{10}$ is $\_\_\_{}_{2}$.
   A. 1001 1001
   B. 1110 0110
   C. 1110 0111
   D. Out of range

20. The 8-bit one's complement representation of - 25_{10} is ___$_2$.
    A. 1001 1001
    B. 1110 0110
    C. 1110 0111
    D. Out of range

21. The 8-bit two's complement representation of - 25_{10} is ___$_2$.
    A. 1001 1001
    B. 1110 0110
    C. 1110 0111
    D. Out of range

22. Represent -63_{10} in 8-bit Sign and Magnitude
    A. 1101 1111
    B. 1011 1111
    C. 1111 1110
    D. 1001 1111

23. Represent -54_{10} in 8-bit 1's Complement
    A. 1100 1001
    B. 1100 1010
    C. 1110 1001
    D. 1110 1010

24. Represent -12_{10} in 8-bit 2's Complement
    A. 1111 0100
    B. 1000 1101
    C. 1111 0101
    D. 1000 0101

25. How many bits are used to represent the exponent (E') in IEEE single precision floating-point representation?
    A. 8
    B. 11
    C. 23
    D. 52

27. What is the normalized format for IEEE double precision floating-point representation?
    A. $\pm 1.M \times 2^{E-127}$
    B. $\pm 1.M \times 2^{E-128}$
    C. $\pm 1.M \times 2^{E-1024}$
    D. $\pm 1.M \times 2^{E-1023}$

28. In IEEE single precision, 9045 6722h is a
    A. Positive number
    B. Negative number
    C. Unsigned number
    D. Not a Number

29. Represent +122.5626 in IEEE SP. Final answer should be written in hexadecimal.

30. Represent -239.875 in IEEE DP. Final answer should be written in hexadecimal.

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