

B.Tech Final Year (Electronics & Communication Technology) Credit Examination 2020
DIGITAL SIGNAL PROCESSING

Set I

Time: One Hour

Total Marks: 50

Instructions: 1) Attempt any twenty five questions.
2) Each question carries two marks.

Q.No.1	DTFT is a periodic function with a period of (A) π (B) 0 (C) 2π (D) ∞	02
Q.No.2	DFT of $x(n)$ is given by $X(K)=$ (A) $\sum_{n=0}^{N-1} x(n)W_N^{kn}, k=0,1,2,\dots,N-1$ (B) $\sum_{n=0}^{N-1} x(n)W_N^{-kn}, k=0,1,2,\dots,N-1$ (C) $\sum_{n=0}^{N-1} x(n)W_N^{kn}, n=0,1,2,\dots,N-1$ (D) $\sum_{n=0}^{N-1} x(n)W_N^{-kn}, n=0,1,2,\dots,N-1$	02
Q.No.3	DTFT is the Z-transform evaluated along the (A) imaginary axis of Z-plane (B) real axis of Z-plane (C) unit circle in z-plane (D) entire z-plane	02
Q.No.4	DFT performs filtering operation in (A) time domain (B) frequency domain (C) both time and frequency domain (D) none of above	02
Q.No.5	IDFT of $X(K)$ is given by (A) $\frac{1}{N} \sum_{k=0}^{N-1} X(K)W_N^{kn}, k=0,1,2,\dots,N-1$ (B) $\frac{1}{N} \sum_{n=0}^{N-1} x(n)W_N^{-kn}, k=0,1,2,\dots,N-1$ (C) $\frac{1}{N} \sum_{n=0}^{N-1} x(n)W_N^{kn}, n=0,1,2,\dots,N-1$ (D) $\frac{1}{N} \sum_{n=0}^{N-1} x(n)W_N^{-kn}, n=0,1,2,\dots,N-1$	02

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Answer Key Set I

**Time: One Hour
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Total Marks:

Q.No.1	Answer: Option C	
Q.No.2	Answer: Option A	
Q.No.3	Answer: Option C	
Q.No.4	Answer: Option B	
Q.No.5	Answer: Option D	
Q.No.6	Answer: Option C	
Q.No.7	Answer: Option C	
Q.No.8	Answer: Option B	
Q.No.9	Answer: Option C	
Q.No.10	Answer: Option A	