

<b>Course/Branch:</b> BE/ CIVIL,EEE,MECH	<b>Year / Semester :</b> II/III	Format No.	NAC/TLP- 07a.13
<b>Subject Code :</b> MA8353	<b>Subject Name :</b> TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS	Rev. No.	02
<b>Unit No :</b> 05	<b>Unit Name:</b> Z-Transforms and Difference Equations	Date	30-09-2020

**OBJECTIVE TYPE QUESTION BANK**

S.No.	Objective Questions [ MCQ / True or False / Fill up with Choices)	BTL
1	Find the Z-Transform of $a^n$ .  (a). $\frac{z}{z-a}$ (b). $\frac{z}{z+a}$ (c). $\frac{1}{z-a}$ (d). $\frac{1}{z+a}$	L5
2	Find Z[n]  (a). $\frac{z}{(z-1)^2}$ (b). $\frac{z}{(z+1)^2}$ (c). $\frac{z}{z-a}$ (d). $\frac{z}{z+a}$	L5
3	Obtain $Z^{-1}\left(\frac{z}{(z+1)(z+2)}\right)$  (a). $(-1)^n - (-2)^n$ (b). $(1)^n + (-2)^n$ (c). $(-1)^n + (2)^n$ (d). $(-1)^n + (-2)^n$	L5
4	Find the difference equation generated by $y_n = a.n + b.2^n$  (a). $2n y_n + (2-3n) y_{n+1} + (n-1) y_{n+2}$ (b). $2n y_n + (2+3n) y_{n+1} + (n+1) y_{n+2}$ (c). $2n y_{n-1} + (2+3n) y_n + (n+1) y_{n+1}$ (d). $2n y_{n-1} + (2+3n) y_n + (n-1) y_{n+1}$	L5
5	Z-Transform converts difference equation to -----	L5
6	$y_{n+1} - 2y_n = 0$ given $y_0 = 3$  (a). $3 \cdot 2^n$ (b). $3 \cdot 3^n$ (c). $3 \cdot (-3)^n$ (d). $(-3) \cdot (-3)^n$	L5
7	Find $z\{f(n)\}$ if $f(n) = \begin{cases} n, n \geq 0 \\ 0, n < 0 \end{cases}$  (a). $\frac{z}{(z-1)^2}$ (b). $\frac{z}{(z+1)^2}$ (c). $\frac{z}{z-2}$ (d). $\frac{z}{z+2}$	L5
8	Find $z(e^{3t+2})$  (a). $e^2 \left(\frac{z}{z-e^{3T}}\right)$ (b). $e^2 \left(\frac{z}{z+e^{3T}}\right)$ (c). $\left(\frac{z}{z+e^{3T}}\right)$ (d). $\left(\frac{z}{z-e^{3T}}\right)$	L5
9	Find Z(n)  (a). $\frac{z}{(z-1)^2}$ (b). $\frac{z}{(z+1)^2}$ (c). $\frac{z}{z-2}$ (d). $\frac{z}{z+2}$	L5

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10	Find $z(n(n-1))$  (a). $\frac{2z}{(z-1)^3}$ (b). $\frac{2z}{(z+1)^3}$ (c). $\frac{z}{(z-1)^3}$ (d). $\frac{z}{(z+1)^2}$	L5
11	Dumping rule of Z transform is-----	L5
12	Find $z(a^n \cos n\theta)$  (a). $\frac{z(z-a \cos \theta)}{(z^2 - 2az \cos \theta + a^2)}$ (b). $\frac{z(z-a \cos \theta)}{(z^2 + 2az \cos \theta + a^2)}$  (c). $\frac{z}{(z^2 + 2az \cos \theta + a^2)}$ (d). $\frac{(z-a \cos \theta)}{(z^2 + 2az \cos \theta + a^2)}$	L5
13	Find $z(a^n t)$  (a). $\frac{Taz}{(z-a)^2}$ (b). $\frac{z}{(z-ae^{aT})}$ (c). $\frac{az}{(z+a)^2}$ (d). $\frac{Taz}{(z+a)^2}$	L5
14	Find $z(e^{-t} \sin 2t)$  (a). $\frac{ze^T \sin 2T}{(z^2 e^{2T} - 2ze^T \cos 2T + 1)}$ (b). $\frac{ze^T \cos 2T}{(z^2 e^{2T} - 2ze^T \cos 2T + 1)}$  (c). $\frac{ze^T \cos 2T}{(z^2 e^{2T} + 2ze^T \cos 2T + 1)}$ (d). $\frac{z}{(z^2 e^{2T} + 2ze^T \cos 2T + 1)}$	L5
15	If $z(f(n+1))$ then -----	L5
16	Find $z(2^n \delta(n-2))$  (a). $\frac{4}{z^2}$ (b). $\frac{2}{z^2}$ (c). $\frac{2}{z}$ (d). $\frac{3}{z}$	L5
17	A discrete unit impulse function is-----	L5
18	A unit Step function is-----	L5
19	Convolution of two sequence is-----	L5
20	Find the final value of $F(z) = \frac{1+z^{-1}}{1-0.25z^{-2}}$  (a).0 (b).1 (c). -1 (d).-2	L5