

University of Mumbai

Examination 2020

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: Electronics and Telecommunication Engineering

Curriculum Scheme: Rev2016

Examination: TE Semester V

Course Code: ECC504 and Course Name: Discrete Time Signal Processing

Time: 2 hour

Max. Marks: 80

Q1:

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	C
Q2.	B
Q3.	C
Q4.	C
Q5.	D
Q6.	B
Q7.	B
Q8.	C
Q9.	D
Q10.	A
Q11.	C
Q12.	C
Q13.	D
Q14.	B
Q15.	B
Q16.	A
Q17.	A
Q18.	C
Q19.	B
Q20.	A

Important steps and final answer for the questions involving numerical example

Q2(A)(iii): $y(n) = x_1(n) * x_2(n) = \{1, 3, 6, 9, 7, 4, 0, 0\}$

Q.2 B. (i) $x(n) = \{1.69, -0.81, -0.31, -0.51, 0.69, -0.81, -0.31, 0.891\}$

Q.2 B. (ii) $P_1 = -4595.05 - j4595.05$ and $4595.05 + j4595.05$

$$H(s) = \frac{(6498.39)^2}{s^2 + 9091.1s + 42.22 \times 10^6}$$

Q.3 A. (i) $H(Z) = \frac{-1}{1 - 0.999 Z^{-1}} + \frac{2}{1 - 0.998 Z^{-1}}$

Q.3 B (ii). $X(k) = \{2, 0.5 - j1.207, 0, 0.5 - j0.207, 0, 0.5 + j0.207, 0, 0.5 + j1.21\}$