PAPER ID-420527

Roll No: | | | | | | | | | | | | | |

BTECH
(SEM VI) THEORY EXAMINATION 2021-22
ANALOG SIGNAL PROCESSING

Time: 3 Hours ***Total Marks: 100***

Note: Attempt all Sections. If you require any missing data, then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2*10 = 20

Q. No	Questions	CO
(a)	Enlist any two comparisons between Analog and Digital Signal Processing.	1
(b)	Enlist the significance about the term Sallen -Key biquad.	1
(c)	Define term Feedback with suitable example.	2
(d)	Enlist the widely used analog filters.	2
(e)	Explain signal rectification.	3
(f)	What do you mean by peak and valley?	3
(g)	Explain the term grounded inductor.	4
(h)	Define transconductance.	4
(i)	Define voltage limiter circuit.	5
(j)	Define gyrator with example.	5

SECTION B

2. Attempt any *three* of the following: 10*3 = 30

Q. No	Questions	CO
(a)	Discuss the differentiation and addition linear analog function with suitable example	1
(b)	Discuss the Comparatively analysis between Maximally Flat and Equal Ripple responses.	2
(c)	Enlist the outcome for Equalization of First order and second order modules with suitable example	3
(d)	Explain Gorski-Popiel's Embedding technique with suitable example.	4
(e)	Explain the following terms: (I) Amplifiers (II) Gyrator (III) Integrator (IV) Registers	5

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SECTION C

3. Attempt any *one* part of the following: 10*1 = 10

Q. No	Questions	CO
(a)	Describe the working of op-amp as an amplitude demodulator	1
(b)	Describe the working of Current Feedback Amplifier with suitable example.	1

4. Attempt any *one* part of the following: 10 *1 = 10

Q. No	Questions	CO
(a)	Draw and explain the first order Butterworth active low pass filter using Op-amp with its associated circuit diagram and transfer function.	2
(b)	Explain the Practical Differentiator circuit using Op-amp with its associated frequency response.	2

5. Attempt any *one* part of the following: 10*1 = 10

Q. No	Questions	CO
(a)	Enlist the methods for detecting peaks and valleys. Describe any methods for detecting peaks and valleys with an example	3
(b)	Explain the term Delay Equalization in brief with suitable examples.	3

6. Attempt any *one* part of the following: 10*1 = 10

Q. No	Questions	CO
(a)	Discuss Burton's FDNR Techniques with suitable examples.	4
(b)	Briefly explain the term Ladder design. Illustrate with an example	4

7. Attempt any *one* part of the following: 10*1 = 10

Q. No	Questions	CO
(a)	Provide the brief Notes on: (I) C-Filters (II) Voltage limiting	5
(b)	Explain Notch and AP transfer functions with an example.	5