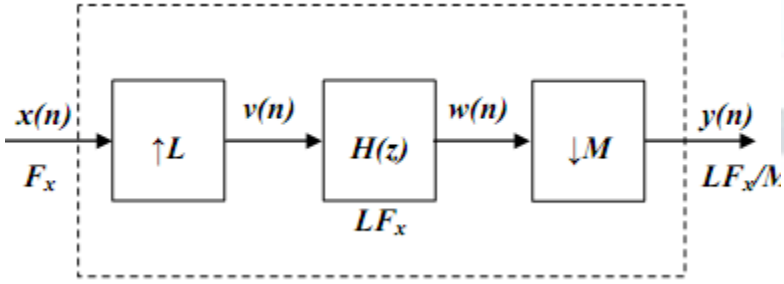


NADAR SARSWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch: B.E/EEE	Year / Semester :III/V	Format No.	NAC/TLP-07a.13
Subject Code :EE8591	Subject Name :Digital Signal Processing	Rev. No.	02
Unit No :5	Unit Name :Digital signal processors	Date	30/09/20

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ /True or False / Fill up with Choices)	BTL
1.	There is no requirement to process the various signals at different rates commensurate with the corresponding bandwidths of the signals. a) True b) False	L1
2.	Which of the following methods are used in sampling rate conversion of a digital signal? a) D/A convertor and A/D convertor b) Performing entirely in digital domain c) None of the mentioned d) D/A convertor, A/D convertor & Performing entirely in digital domain	L2
3.	In which of the following, sampling rate conversion are used? a) Narrow band filters b) Digital filter banks c) Quadrature mirror filters d) All of the mentioned	L3
4.	The sampling rate conversion can be as shown in the figure below.  a) True b) False	L1
5.	What is the folding frequency for the aliased version of x(n) with sampling rate F? a) F/D	L2

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	b) F/4D c) F/2 d) F/2D	
6.	Which of the following is true about the filtering operation on $x(n)$? a) Linear b) Time variant c) None of the mentioned d) Linear and time invariant	L3
7.	Which process has a block diagram as shown in the figure below? <p>The diagram shows a block labeled $H(z)$ Low pass filter. Inside the block is a plot of the magnitude response $H(\omega)$ versus ω. The plot shows a rectangular pulse with a height of 1, extending from $-\pi/M$ to π/M. The input signal $x(n)$ enters the filter block. The output of the filter is $v(n)$, which then enters a block labeled $\downarrow M$ Down sampler. The final output is $y(n)$.</p> a) Sampling rate conversion b) Interpolation c) Decimation d) None of the mentioned	L1
8.	Which of the following gives the equation for $y(m)$? a) $v(mD)$ b) $p(mD)$ c) $v(mD).p(mD)$ d) none of the mentioned	L2
9.	What is the quantity $ax(n-1)$ is called? a) Second-order predictor of $x(n)$ b) Zero-order predictor of $x(n)$ c) First-order predictor of $x(n)$ d) Third-order predictor of $x(n)$	L3
10.	The simplest form of differential predictive quantization is called? a) AM	L1

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	b) BM c) DM d) None of the mentioned	
11.	In DM, the quantizer is a simple _____ bit and _____ level quantizer. a) 2-bit, one-level b) 1-bit, two-level c) 2-bit, two level d) 1-bit, one level	L2
12.	In the equation $x_q(n)=ax_q(n-1)+d_q(n)$, if $a < 1$ then integrator is called? a) Leaky integrator b) Ideal integrator c) Ideal accumulator d) Both Ideal integrator & accumulator	L3
13.	What is the main function of (A/D) or ADC converter? a) Converts Digital to Analog Signal b) Converts Analog to Digital signal c) All of the mentioned d) None of the mentioned	L1
14.	The time required to complete the conversion of Analog to Digital is _____ the duration of the hold mode of S/H. a) Greater than b) Equals to c) Less than d) Greater than or Equals to	L2
15.	In the practical A/D converters, what are the distortions and time-related degradations occur during the conversion process? a) Jitter errors b) Droops c) Nonlinear variations in the duration of the sampling aperture d) All of the mentioned	L3
16.	What are the effects produced by Dm by setting up an integrator at the front of DM? a) Simplifies the DM decoder b) Increases correlation of the signal into the DM input	L1

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	c) Emphasizes the low frequencies of $x(t)$ d) All of the mentioned	
17.	What is the Fourier transform of $x(t)$? a) $X(F) = 1/2[XI(F-F_c)+X*I(F-F_c)]$ b) $X(F) = 1/2[XI(F-F_c)+X*I(F+F_c)]$ c) $X(F) = 1/2[XI(F+F_c)+X*I(F-F_c)]$ d) $X(F) = 1/2[XI(F-F_c)+X*I(-F-F_c)]$	L2
18.	What is the new centre frequency for the increased bandwidth signal? a) $F_c' = F_c + B/2 + B'/2$ b) $F_c' = F_c + B/2 - B'/2$ c) $F_c' = F_c - B/2 - B'/2$ d) None of the mentioned	L3
19.	Which low pass signal component occurs at the rate of B samples per second with odd numbered samples of $x(t)$? a) u_c – lowpass signal component b) u_s – lowpass signal component c) u_c & u_s – lowpass signal component d) none of the mentioned	L1
20.	Which of the following is the right way of representation of equation that contains only the positive frequencies in a given $x(t)$ signal? a) $X_+(F) = 4V(F)X(F)$ b) $X_+(F) = V(F)X(F)$ c) $X_+(F) = 2V(F)X(F)$ d) $X_+(F) = 8V(F)X(F)$	L2
21.	Which low pass signal component occurs at the rate of B samples per second with even numbered samples of $x(t)$? a) u_c-lowpass signal component b) u_s -lowpass signal component c) u_c & u_s -lowpass signal component d) none of the mentioned	L3
22.	In time-domain expression, $x_+(t) = F^{-1}[2V(F)] * F^{-1}[X(F)]$. The signal $x_+(t)$ is known as a) Systematic signal b) Analytic signal	L1

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	c) Pre-envelope of $x(t)$ d) Both Analytic signal & Pre-envelope of $x(t)$	
23.	If the signal $\hat{x}(t)$ can be viewed as the output of the filter with impulse response $h(t) = 1/\pi t, -\infty < t < \infty$ when excited by the input signal $x(t)$ then such a filter is called as _____ a) Analytic transformer b) Hilbert transformer c) Both Analytic & Hilbert transformer d) None of the mentioned	L2
24.	In the relation, $x(t) = u_c(t)\cos 2\pi F_c t - u_s(t)\sin 2\pi F_c t$ the low frequency components u_c and u_s are called _____ of the bandpass signal $x(t)$. a) Quadratic components b) Quadrature components c) Triplet components d) None of the mentioned	L3
25.	What is the type of quantizer, if a Zero is assigned a quantization level? a) Midrise type b) Mid tread type c) Mistreat type d) None of the mentioned	L1
26.	What is the term used to describe the range of an A/D converter for uni-polar signals? a) Full scale b) FSR c) Full-scale region d) FSS	L2
27.	In the practical A/D converters, if the difference between the values at which the first transition and the last transition occur is not equal to $FS - 2LSB$, then such error is known as _____ a) Scale-factor error b) Offset error c) Linearity error d) All of the mentioned	L3
28.	In the practical A/D converters, if the differences between transition values are	L1

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	not all equal or uniformly changing, then such error is known as? a) Scale-factor error b) Offset error c) Linearity error d) All of the mentioned	
29.	D/A conversion is usually performed by combining a D/A converter with a sample-and-hold (S/H) and followed by a low pass (smoothing) filter. a) True b) False	L2
30.	In D/A converter, the application of the input code word results in a high-amplitude transient, called? a) Glitch b) Deglitch c) Glitter d) None of the mentioned	L3

