

## Questions Set - 2

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1) The cost of the digital processors is cheaper because

- Processor allows time sharing among a number of signals
- The hardware is cheaper
- Require less maintenance
- Less power consumption

**ANSWER: Processor allows time sharing among a number of signals**

**Explanation:**

No explanation is available for this question!

2) The operations that may be performed on vectors in

- Inner product, distance between vectors
- Norm of a vector, orthogonal vectors
- Orthonormal functions
- Vector division

- 1, 2 and 3 are correct
- 1 and 2 are correct

**Explanation:**

No explanation is available for this question!

**3) The norm or length of a signal is given by**

- a. The square of the energy of the signal
- b. The square root of the energy of the signal
- c. The inverse of the energy of the signal
- d. The cube root of the energy of the signal

Answer Explanation Related Ques

**ANSWER: The square root of the energy of the signal**

**Explanation:**

No explanation is available for this question!

**4) The principle of Gram-Schmidt Orthogonalization (GSO) can be expressed as**

- a. Summation of N ortho normal basis functions, where  $N \leq M$ .
- b. Linear combinations of N ortho normal basis functions, where  $N \leq M$ .
- c. Product of logarithmic combinations of N ortho normal basis functions, where  $N \leq M$ .
- d. Product of inverse squares of N ortho normal basis functions, where  $N \leq M$ .

Answer Explanation Related Ques

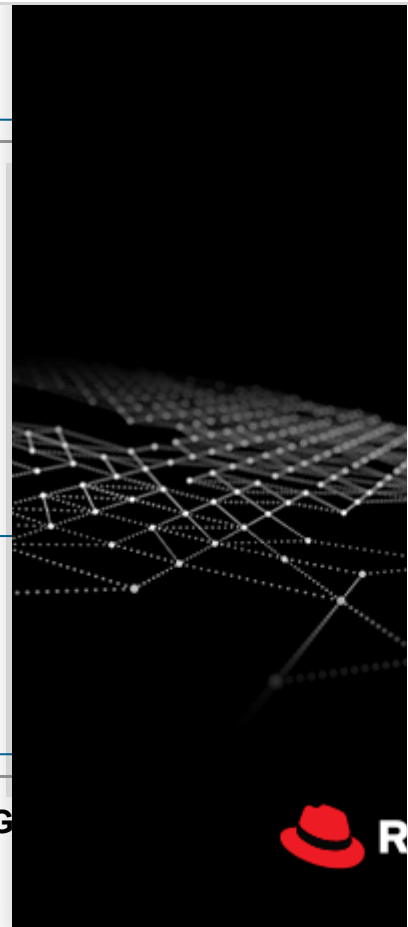
**ANSWER: Linear combinations of N ortho normal basis functions, where  $N \leq M$ .**

**Explanation:**

No explanation is available for this question!

**5) A signal  $x[n]$  is anti symmetric or odd when**

- a.  $x[-n] = x[n] \cdot x[n]$
- b.  $x[n] = -x[n]$
- c.  $x[n] = [x[n]]^2$
- d.  $x[-n] = -x[n]$



**6) Time shifting of discrete time signal means**

- a.  $y[n] = x[n-k]$
- b.  $y[n] = x[-n-k]$
- c.  $y[n] = -x[n-k]$
- d.  $y[n] = x[n+k]$

Answer Explanation Related Ques

**ANSWER:  $y[n] = x[n-k]$**

**Explanation:**

No explanation is available for this question!

**7) Time reversal of a discrete time signal refers to**

- a.  $y[n] = x[-n+k]$
- b.  $y[n] = x[-n]$
- c.  $y[n] = x[-n-k]$
- d.  $y[n] = x[n-k]$

Answer Explanation Related Ques

**ANSWER:  $y[n] = x[-n]$**

**Explanation:**

No explanation is available for this question!

**8) Causal systems are the systems in which**

- a. The output of the system depends on the present and the past inputs
- b. The output of the system depends only on the present inputs



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c. The output of the system depends only on the past inputs



d. The output of the system depends on the present input as well as the previous output

Answer Explanation Related Ques

**ANSWER: The output of the system depends on the present and the past inputs**

**Explanation:**

No explanation is available for this question!

9) The basic properties of DFT includes

- 1) Linearity
- 2) Periodicity
- 3) Circular symmetry
- 4) Summation

**ANSWER: 1, 2 and 3 are correct**

**Explanation:**

No explanation is available for this question!

**10) Padding of zeros increases the frequency resolution.**

- a. True
- b. False

Answer Explanation Related Ques

**ANSWER: False**

**Explanation:**

No explanation is available for this question!

**11) Circular shift of an N point is equivalent to**

- a. Circular shift of its periodic extension and its vice versa
- b. Linear shift of its periodic extension and its vice versa
- c. Circular shift of its aperiodic extension and its vice versa
- d. Linear shift of its aperiodic extension and its vice versa

Answer Explanation Related Ques

**ANSWER: Linear shift of its periodic extension and its vice versa**

**Explanation:**

No explanation is available for this question!

**12) The circular convolution of two sequences in time domain is equivalent to**

- a. Multiplication of DFTs of two sequences
- b. Summation of DFTs of two sequences



**Explanation:**

No explanation is available for this question!

**13) For the calculation of N- point DFT, Radix -2 FFT algorithm repeats**

- a.  $2(N \log_2 N)$  stages
- b.  $(N \log_2 N)^2/2$  stages
- c.  $(N \log_2 N)/2$  stages
- d.  $(N \log_2(2 N))/2$  stages

[Answer](#)[Explanation](#)[Related Ques](#)**14) Radix - 2 FFT algorithm performs the computation of DFT in**

- a.  $N/2 \log_2 N$  multiplications and  $2 \log_2 N$  additions
- b.  $N/2 \log_2 N$  multiplications and  $N \log_2 N$  additions
- c.  $\log_2 N$  multiplications and  $N/2 \log_2 N$  additions
- d.  $N \log_2 N$  multiplications and  $N/2 \log_2 N$  additions

[Answer](#)[Explanation](#)[Related Ques](#)**ANSWER:  $N/2 \log_2 N$  multiplications and  $N \log_2 N$  additions****Explanation:**

No explanation is available for this question!

**15) The overlap save method is used to calculate**

- a. The discrete convolution between a sampled signal and a finite impulse response (FIR)
- b. The discrete convolution between a sampled signal and an infinite impulse response (IIR)
- c. The discrete convolution between a very long signal and a finite impulse response (FIR)
- d. The discrete convolution between a very long signal and an infinite impulse response (IIR)

[Answer](#)[Explanation](#)[Related Ques](#)**ANSWER: The discrete convolution between a very long signal and a finite impulse response (FIR)****Explanation:**

No explanation is available for this question!



discrete-time convolved result of length  $L + M$

c. The linear convolution of a discrete-time signal of length  $L$  and a discrete-time signal of length  $M$  produces a discrete-time convolved result of length  $2L + M - 1$

d. The linear convolution of a discrete-time signal of length  $L$  and a discrete-time signal of length  $M$  produces a discrete-time convolved result of length  $2L + 2M - 1$

Answer Explanation Related Ques

**ANSWER: The linear convolution of a discrete-time signal of length  $L$  and a discrete-time signal of length  $M$  produces a discrete-time convolved result of length  $L + M - 1$**

**Explanation:**

No explanation is available for this question!

**17) ROC does not have**

- a. zeros
- b. poles
- c. negative values
- d. positive values

Answer Explanation Related Ques

**ANSWER: poles**

**Explanation:**

No explanation is available for this question!

**18) Damping is the ability of a system**

- a. To support oscillatory nature of the system's transient response
- b. To oppose the continuous nature of the system's transient response
- c. To oppose the oscillatory nature of the system's transient response
- d. To support the discrete nature of the system's transient response

Answer Explanation Related Ques

**19) The condition for a system to be causal is**

**ANSWER: All poles of its transfer function must be right half of s-plane**

**Explanation:**

No explanation is available for this question!

**20) The condition for a system to be stable is**

- a. All poles of its transfer function lie on the left half of s-plane
- b. All poles of its transfer function must be right half of s-plane
- c. All zeros of its transfer function must be right half of s-plane
- d. All zeros of its transfer function must be left half of s-plane

Answer

Explanation

Related Ques

**ANSWER: All poles of its transfer function lie on the left half of s-plane**

**Explanation:**

No explanation is available for this question!

**21) Partial fraction method involves**

- a. Allotting coefficients
- b. Dividing the numerator by denominator to get fractions
- c. Dividing single fraction into parts
- d. None of the above

Answer

Explanation

Related Ques

**ANSWER: Dividing single fraction into parts**

**Explanation:**

No explanation is available for this question!

**22) The factors formed for partial fraction are a combination of**

- 1) Linear factors
- 2) Irreducible quadratic factors
- 3) Square roots





u. All the four are correct

Answer Explanation Related Ques

**ANSWER: 1 and 2 are correct**

**Explanation:**

No explanation is available for this question!

**23) For a partial fraction method to be followed,**

- 1) The degree of the numerator must be more than the degree of the denominator.
- 2) The factors formed for partial fraction are a combination of Linear factors and I factors.
- 3) The degree of the numerator must be less than the degree of the denominator.
- 4) The factors formed for partial fraction are a combination of Linear factors and S

- a. 1, 2 and 3 are correct
- b. 1 and 2 are correct
- c. 2 and 3 are correct
- d. All the four are correct

Answer Explanation Related Ques

**ANSWER: 2 and 3 are correct**

**Explanation:**

No explanation is available for this question!

**24) The partial fraction of  $x^2+1/x(x-1)^2$  is**

- a.  $1/(x-1) + 2/(x-1)^2 - 1/x$
- b.  $1/(x-1) + 2/(x-1)^2 - 3/x$
- c.  $1/(x-1) + 2/(x-1)^2 - 3/x^2$
- d.  $1/(x+1) + 2/(x+1)^2 - 1/x$

Answer Explanation Related Ques

**ANSWER:  $1/(x-1) + 2/(x-1)^2 - 1/x$**



- a. Sampling the impulse response of an equivalent analog filter
- b. Taking backward difference for the derivative
- c. Mapping from s-domain to z-domain
- d. Approximation of derivatives

[Answer](#)[Explanation](#)[Related Ques](#)

**ANSWER: Sampling the impulse response of an equivalent analog filter**

**Explanation:**

No explanation is available for this question!

**26) The transformation technique in which there is one to one mapping from s-dc**

- a. Approximation of derivatives
- b. Impulse invariance method
- c. Bilinear transformation method
- d. Backward difference for the derivative

[Answer](#)[Explanation](#)[Related Ques](#)

**ANSWER: Bilinear transformation method**

**Explanation:**

No explanation is available for this question!

**27) The frequency warping is referred as**

- 1) lower frequencies in analog domain expanded in digital domain
- 2) lower frequencies in digital domain expanded in analog domain
- 3) non linear mapping
- 4) compression of higher frequencies

- a. 1, 3 and 4 are correct
- b. 2 and 4 are correct
- c. 2 and 3 are correct
- d. All the four are correct

[Answer](#)[Explanation](#)[Related Ques](#)

- 1) Flat stop band
- 2) Flat pass band
- 3) Tapering pass band
- 4) Tapering stop band

- a. 1 and 2 are correct
- b. 2 and 4 are correct
- c. 2 and 3 are correct
- d. All the four are correct

Answer Explanation Related Ques

**ANSWER: 1 and 2 are correct**

**Explanation:**

No explanation is available for this question!

**29) In the cascaded form of realisation, the polynomials are factored into**

- a. a product of 1st-order and 2nd-order polynomials
- b. a product of 2nd-order and 3rd-order polynomials
- c. a sum of 1st-order and 2nd-order polynomials
- d. a sum of 2nd-order and 3rd-order polynomials

Answer Explanation Related Ques

**ANSWER: a product of 1st-order and 2nd-order polynomials**

**Explanation:**

No explanation is available for this question!

**30) Parallel form of realisation is done in**

- a. High speed filtering applications
- b. Low speed filtering applications
- c. Both a and b
- d. None of the above



31) A partial-fraction expansion of the transfer function in  $Z^{-1}$  leads to

- a. The parallel form II structure
- b. The parallel form I structure
- c. Cascaded structure
- d. None of the above

[Answer](#)[Explanation](#)[Related Ques](#)

32) A direct partial-fraction expansion of the transfer function in  $Z$  leads to

- a. The parallel form II structure
- b. The parallel form I structure
- c. Cascaded structure
- d. None of the above

[Answer](#)[Explanation](#)[Related Ques](#)

**ANSWER: The parallel form II structure**

**Explanation:**

No explanation is available for this question!

33) Basically, group delay is the delayed response of filter as a function of \_\_\_\_\_

- a. Phase
- b. Amplitude
- c. Frequency
- d. All of the above

[Answer](#)[Explanation](#)[Related Ques](#)

**ANSWER: Frequency**

**Explanation:**

No explanation is available for this question!

u. Constant

Answer Explanation Related Ques

**ANSWER: Constant**

**Explanation:**

No explanation is available for this question!

**35) Which among the following has/have a provision to support an adaptive filter**

- a. IIR
- b. FIR
- c. Both a and b
- d. None of the above

Answer Explanation Related Ques

**ANSWER: Both a and b**

**Explanation:**

No explanation is available for this question!

**36) Which is/are the correct way/s for the result quantization of an arithmetic ope**

- a. Result Truncation
- b. Result Rounding
- c. Both a and b
- d. None of the above

Answer Explanation Related Ques

**ANSWER: Both a and b**

**Explanation:**

No explanation is available for this question!

**37) In direct form realization for an interpolator, which among the following gene signal?**



**ANSWER: Upsampler**

**Explanation:**

No explanation is available for this question!

**38) To change the sampling rate for better efficiency in two or multiple stages, The interpolation factors must be \_\_\_\_\_ unity.**

- a. Less than
- b. Equal to
- c. Greater than
- d. None of the above

Answer

Explanation

Related Ques

**ANSWER: Greater than**

**Explanation:**

No explanation is available for this question!

**39) Which address/es is/are generated by Program Sequences?**

- a. Data Address
- b. Instruction Address
- c. Both a and b
- d. None of the above

Answer

Explanation

Related Ques

**ANSWER: Instruction Address**

**Explanation:**

No explanation is available for this question!

**40) In DAGs, which register/s provide/s increment or step size for index register (i) register move?**



**ANSWER: Modify Register**

**Explanation:**

No explanation is available for this question!



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