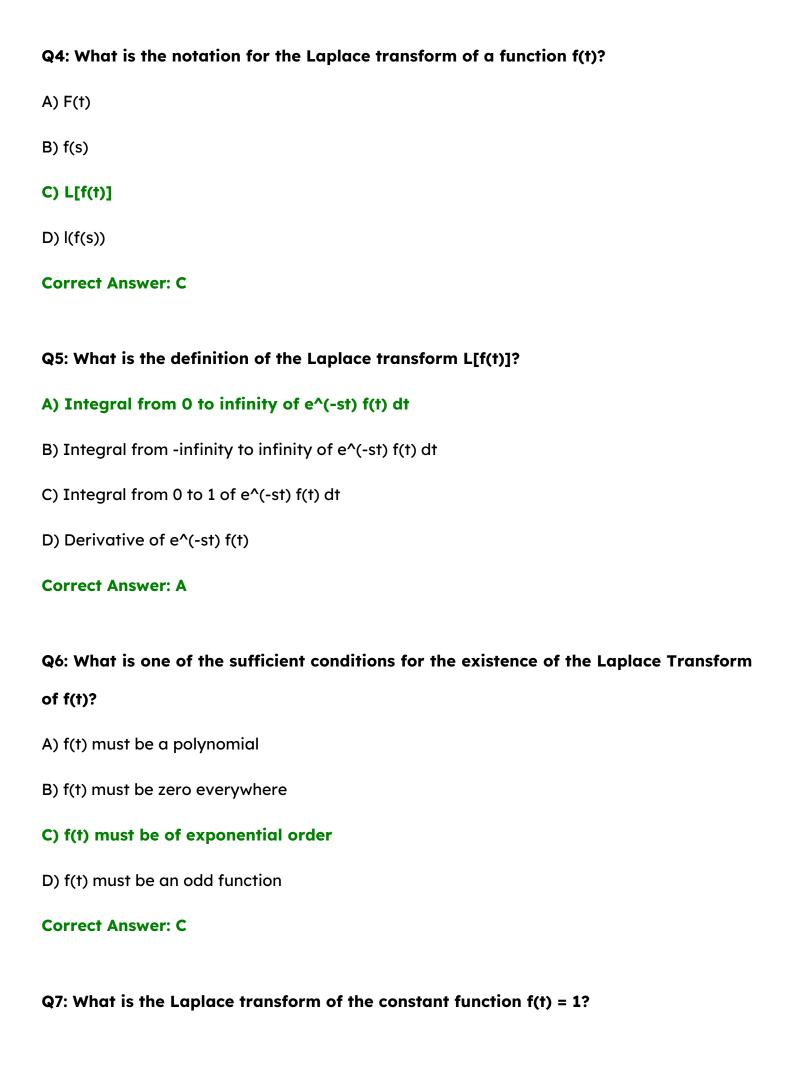
## **Generated MCQs**

Q1: What mathematical operation transforms a mathematical expression into another
equivalent simple form?
A) Integration
B) Differentiation
C) Transformation
D) Summation
Correct Answer: C
Q2: Who first introduced the Laplace transform?
A) Fourier
B) Heaviside
C) Laplace
D) Newton
Correct Answer: C
Q3: What type of equations can be solved using algebraic methods with the help of
Laplace transform?
A) Quadratic equations
B) Logarithmic equations
C) Differential equations
D) Trigonometric equations
Correct Answer: C



**Correct Answer: B** 

Q8: What is the Laplace transform of the function  $f(t) = e^{(at)}$ ?

A) 
$$1 / (s + a)$$

B) 
$$1/(s-a)$$

C) 
$$s / (s^2 + a^2)$$

D) 
$$a / (s^2 + a^2)$$

**Correct Answer: B** 

Q9: What is the Laplace transform of the function  $f(t) = \sin(at)$ ?

A) 
$$s / (s^2 + a^2)$$

B) 
$$a / (s^2 + a^2)$$

**Correct Answer: B** 

Q10: What is the Laplace transform of the function f(t) = cos(at)?

A) 
$$s / (s^2 + a^2)$$

B) 
$$a / (s^2 + a^2)$$

Q11: What does the linearity property of Laplace Transform state for L[f(t) + g(t)]?

- A) L[f(t)] \* L[g(t)]
- B) L[f(t)] / L[g(t)]
- C) L[f(t)] + L[g(t)]
- D) L[f(t)] L[g(t)]

**Correct Answer: C** 

Q12: According to the First Shifting Theorem, if L[f(t)] = F(s), what is  $L[e^{-at}]$ ?

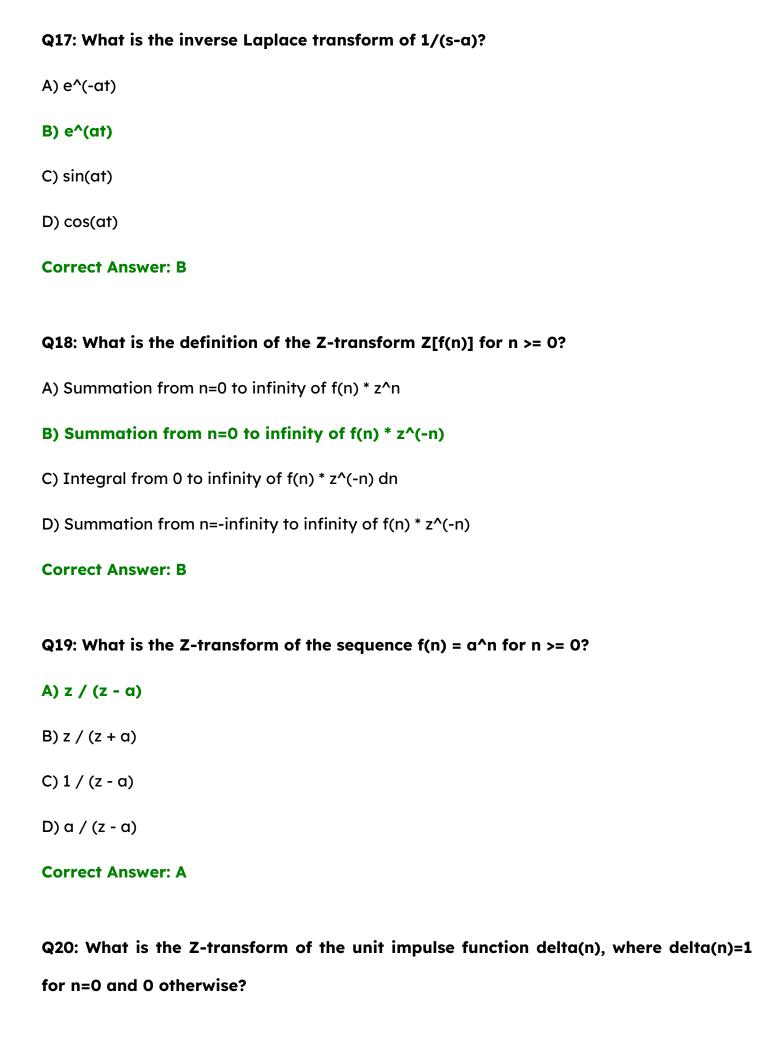
- A) F(s a)
- B) F(s + a)
- C) e^(-as) F(s)
- D) F(s) / a

**Correct Answer: B** 

Q13: What is the definition of the unit step function  $U(t-\alpha)$ ?

- A) 0 for  $t < \alpha$ , 1 for  $t > \alpha$
- B) 1 for t < a, 0 for t > a
- C) 0 for t < 0, 1 for t > 0
- D) t for t < a, a for t > a

Q14: What is the Laplace transform of the unit step function U(t-a)?
A) e^(-as) / s
B) e^(as) / s
C) 1 / (s + a)
D) e^(-as)
Correct Answer: A
Q15: If L[f(t)] = F(s), what is the inverse Laplace transform of F(s)?
A) f(s)
B) F(t)
C) f(t)
D) 1/f(t)
Correct Answer: C
Q16: What is the inverse Laplace transform of 1/s?
4-0
A) t
B) 1
C) e^t
D) sin(t)
Correct Answer: B



- A) z
- B) 1/z
- C) 1
- D) 0

**Correct Answer: C** 

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