AC Circuit MCQs: 1 to 5

1 The emf equation of an alternating voltage is

(a)$V = V_m \sin \omega t$

(b)$V = V_m \tan \omega t$

(c)$V = V_m \sin^2 \omega t$

(d)$V = V_m^2 \sin \omega t$

Correct Answer (a): $V = V_m \sin \omega t$

The standard equation of alternating emf is $V = V_m \sin \omega t$

$V = V_m \sin (2\pi f)t$

$V = V_m \sin (2\pi/T)t \ \omega t$

$V = V_m \sin \theta$

2 The unit of frequency is

(a)Revolution / Second

(b)1 / Second

(c)Second

(d)Both (a) and (b)

Correct Answer (d): Both (a) and (b)

The unit of frequency is Hz or 1/time

3 The time taken by an alternating quantity to complete one cycle is called as

(a)Frequency

(b)Time period

(c)Cycle

(d)Amplitude

Correct Answer (b): Time period

Time period is defined as the time required for an alternating quantity to complete one cycle.

4 The number of cycles per second is called as

(a)Frequency

(b)Time period

(c)Cycle

(d)Any of the above

Correct Answer (a): Frequency

Frequency is defined as the number of cycle per second.

5 One complete cycle means

(a)π / 4 radian

(b)π / 2 radian

(c)π radian

(d)2π radian

Correct Answer (d): 2π radian

One cycle is equal to 2π radian or 360 degree, Half cycle is equal to π radian or 180 degree, One quarter cycle is equal to π/2 radian or 90 degree

AC Circuit MCQs: 6 to 10

6 The frequency of the alternating quantity is

(a)PN / 120

(b)PN / 60

(c)PN / 30

(d)120 / PN

Correct Answer (a): PN / 120

Frequency F = PN/120

Where P = Number of poles

N = Speed in RPM

7 Which of the following relation is true?

(a)T = f

(b)T = 1/f

(c)T = $1/f^2$

(d)None of the above

Correct Answer (b): T = 1/f

Time period = 1/ frequency

8 The time period for 50Hz cycle wave is

(a)0.1

(b)0.2

(c)0.02

(d)0.002

Correct Answer (c): 0.02

T = 1/f = 1/50 = 0.02 second

9 Which of the following relation is true?

(a)ω = 2πf

(b)ω = 2π / f

(c)ω = 2πT

(d)ω = f / 2π

Correct Answer (a): ω = 2πf

10 The complex waveform consists of

(a)Fundamental waveform

(b)Harmonics waveform

(c)Both (a) and (b)

(d)None of the above

Correct Answer (c): Both (a) and (b)

AC Circuit MCQs: 11 to 15

11 Which of the following is standard Indian fundamental frequency?

(a)25 Hz

(b)50 Hz

(c)100 Hz

(d)200 Hz

Correct Answer (b): 50 Hz

12 If the fundamental frequency is 50Hz, the frequency of third harmonic is

(a)25 Hz

(b)50 Hz

(c)150 Hz

(d)250 Hz

Correct Answer (c): 150 Hz

The frequency of nth harmonic = nf

Where n = Harmonic Number

13 The two halves of complex waves are not identical when it consists of

(a)Fundamental component

(b)Odd harmonics component

(c)Even harmonics component

(d)Either (b) or (c)

Correct Answer (c): Even harmonics component

14 Which of the following harmonics consists of distortion?

(a)3rd

(b)4th

(c)5th

(d)7th

Correct Answer (b): 4th

15 The reciprocal of the time period is called as

(a)Frequency

(b)Cycle

(c)Revolution

(d)Either (a) or (b)

Correct Answer (a): Frequency

F = 1/T

AC Circuit MCQs: 16 to 20

16 The frequency of the 8 - pole, 50 Hz alternator is

(a)3000 RPM

(b)1500 RPM

(c)750 RPM

(d)600 RPM

Correct Answer (c): 750 RPM

Frequency F = PN/120

N = 120F / P = 120 × 50 / 8 = 750 RPM

17 One complete set of positive and negative value of alternating quantity is known as

(a)Frequency

(b)Cycle

(c)Time period

(d)Amplitude

Correct Answer (b): Cycle

One cycle is equal to one positive cycle and one negative cycle.

18 The maximum positive or negative value of alternating quantity is known as

(a)Form factor

(b)Peak factor

(c)Amplitude

(d)Either (b) or (c)

Correct Answer (c): Amplitude

19 What is phase difference between following waveforms?

$V_1 = V_m \sin \omega t$ and $V_2 = V_m \sin (\omega t - \Phi^o)$

(a)$\pi / 2$

(b)π

(c)Φ^o

(d)$2\Phi^o$

Correct Answer (c): Φ^o

20 What is phase difference between following waveforms?

$V_1 = V_m \sin (\omega t - 30^o)$ and $V_2 = V_m \sin (\omega t - 90^o)$

(a)30^o

(b)60^o

(c)90^o

(d)120^o

Correct Answer (b): 60^o

Phase difference is V1 is V2 with respect to X axis = $-30^o + 90^o = 60^o$

AC Circuit MCQs PDF

Download AC Circuit MCQs PDF

You may also like to read these articles also:

Basic Electrical MCQs – 1

Basic Electrical MCQs – 2

Basic Electrical MCQs – 3

Basic Electrical MCQs - 4