

[]

- []

- []

- []

- []

- b) Helmholtz
d) none

ANSWERS:

| Q. No. | ANSWER | Q. No. | ANSWER |
|--------|--------|--------|--------|
| 1 | C | 11 | B |
| 2 | C | 12 | B |
| 3 | C | 13 | D |
| 4 | B | 14 | B |
| 5 | B | 15 | B |
| 6 | C | 16 | C |
| 7 | B | 17 | A |
| 8 | A | 18 | B |
| 9 | C | 19 | C |
| 10 | B | 20 | C |

MULTIPLE CHOICE QUESTIONS

UNIT-2: THIN LINEAR WIRE ANTENNAS

1. Alternating current element is given by []
 a) $I dl$ b) $I dl \cos \omega t$
 c) $I dl \sin \omega t$ d) I
2. -----potential is used to find the field components of current element []
 a) Scalar Potential, V b) Vector Potential, A
 c) Both a and b d) None
3. ----- is basic building block for any practical antenna []
 a) Current element b) Monopole
 c) Dipole d) Loop
4. The H_ϕ Component will consists of-----field. []
 a) Radiation b) Induction
 c) Both a and b d) All
5. The E_θ Component will consists of----- []
 a) Radiation b) Induction
 c) Electro static d) All
6. The E_r Component will consists of----- []
 a) Induction b) Electro static
 c) Both a and b d) All
7. The induction and radiation fields of current element are equal at distance of ----- []
 a) $\lambda/2$ b) $\lambda/4$
 c) $\lambda/6$ d) $\lambda/10$
8. The radiation resistance of current element is given by []
 a) $R_r = 80\pi^2 (dl/\lambda)^2$ b) $R_r = 20\pi^2 (dl/\lambda)^2$
 c) $R_r = 10\pi^2 (dl/\lambda)^2$ d) None
9. The radiation resistance of short dipole is given by []
 a) $R_r = 80\pi^2 (dl/\lambda)^2$ b) $R_r = 20\pi^2 (dl/\lambda)^2$
 c) $R_r = 10\pi^2 (dl/\lambda)^2$ d) None
10. The radiation resistance of short monopole is given by []
 a) $R_r = 80\pi^2 (dl/\lambda)^2$ b) $R_r = 20\pi^2 (dl/\lambda)^2$
 c) $R_r = 10\pi^2 (dl/\lambda)^2$ d) None

TRUE OR FALSE QUESTIONS

11. The radiation resistance of current element is applicable to dipoles up to height of $\lambda/8$ only. []
12. The radiation resistance of current element is applicable to mono poles up to height of $\lambda/4$ only. []
13. The radiation resistance of current element is applicable to dipoles up to height of $\lambda/2$ only. []
14. The radiation resistance of $\lambda/2$ dipole is 36.5Ω []
15. The radiation resistance of $\lambda/4$ Monopole is 73Ω []

FILL IN THE BLANKS QUESTIONS

16. The E_θ Component of current element is given by-----

17. The E_r Component of current element is given by-----

18. The H_ϕ Component of current element is given by-----

19. The main application of Loop Antenna is-----

20. The Directivity of Loop Antenna is -----

| Q. No. | ANSWER |
|--------|--------|
| 1 | B |
| 2 | B |
| 3 | A |
| 4 | C |
| 5 | D |
| 6 | C |
| 7 | C |
| 8 | A |
| 9 | B |
| 10 | C |

| Q. No. | ANSWER |
|--------|--------|
| 11 | FALSE |
| 12 | FALSE |
| 13 | FALSE |
| 14 | FALSE |
| 15 | FALSE |

| Q. No. | ANSWER |
|--------|--|
| 16 | $E_\theta = \frac{I dL \sin \theta}{4\pi\epsilon} \left[\frac{-\omega \sin \omega t'}{v^2 r} + \frac{\cos \omega t'}{vr^2} + \frac{\sin \omega t'}{\omega r^3} \right]$ |
| 17 | $E_r = \frac{2 I dL \cos \theta}{4\pi\epsilon} \left[\frac{\cos \omega t'}{vr^2} + \frac{\sin \omega t'}{\omega r^3} \right]$ |
| 18 | $H_\phi = \frac{I dL \sin \theta}{4\pi} \left[\frac{-\omega \sin \omega t'}{rv} + \frac{\cos \omega t'}{r^2} \right]$ |
| 19 | Direction Finding |
| 20 | 1.5 |

FILL IN THE BLANKS QUESTIONS

16. Hansen-Wood yard Array is a -----array.
17. The currents in Non linear are -----
18. Binomial array was invented by-----
19. The amplitudes will be ----- in the resultant pattern using principle of multiplication of Patterns.
20. The phases will be ----- in the resultant pattern using principle of multiplication of Patterns.

ANSWERS:

| Q. No. | ANSWER | Q. No. | ANSWER |
|--------|--------|--------|--------------|
| 1 | A | 11 | TRUE |
| 2 | B | 12 | FALSE |
| 3 | A | 13 | FALSE |
| 4 | B | 14 | TRUE |
| 5 | A | 15 | FALSE |
| 6 | A | 16 | LINEAR |
| 7 | C | 17 | Out of phase |
| 8 | D | 18 | Stone |
| 9 | A | 19 | Multiply |
| 10 | B | 20 | Addup |

MULTIPLE CHOICE QUESTIONS

UNIT-4: VHF, UHF and MW ANTENNAS-I

1. Microwave frequency range is----- []
 a) above 30MHZ b) above 300MHZ
 C) above 200MHZ d) above 2000MHZ.
2. Yagi-Uda antenna consists of----- []
 a) Folded Dipole b) Reflector
 C) Director d) All above
3. The radiation resistance of folded dipole of equal radii is----- []
 a) 657Ohms b) 292 Ohms
 C) 300 Ohms d) 277 Ohms
4. The radiation resistance of folded dipole of unequal radii ($r_2=2r_1$) is----- []
 a) 657Ohms b) 292 Ohms
 C) 300 Ohms d) 277 Ohms
5. The helix is having the geometry of ----- []
 a) straight wire b) circle
 C) cylinder d) All above.
6. The radiation pattern of helix in Axial mode is----- []
 a) Bi directional b) Uni directional
 C) 4 lobed d) Omni directional
7. The radiation pattern of helix in Normal mode is----- []
 a) Bi directional b) Uni directional
 C) 4 lobed d) Omni directional
8. In Normal mode of operation the length of the helix is----- []
 a) $>\lambda$ b) $<\lambda$
 C) $=\lambda$ d) none
9. In Axial mode of operation the length of the helix is----- []
 a) $>\lambda$ b) $<\lambda$
 C) $=\lambda$ d) none
10. Horn antennas used in the frequency range of----- []
 a) VHF b) UHF
 C) SHF d) MW

TRUE OR FALSE QUESTIONS

11. Yagi_Uda array is a parasitic array. []
12. The reflector is longer than the folded dipole in Yagi-Uda antenna. []
13. The director is shorter than the Folded dipole in Yagi-Uda antenna. []
14. Stone invented Helical Antenna. []
15. Mushaike invented Horn antenna. []

FILL IN THE BLANKS QUESTIONS

16. Radiation pattern of Yagi-Uda array is-----directional
17. Helical antenna was invented by-----
18. The path difference in horn antennas must be-----
19. The horn antennas are used in the frequency range of-----
20. The impedance of wave guides will be -----than Transmission lines.

ANSWERS:

| Q. No. | ANSWER | Q. No. | ANSWER |
|--------|--------|--------|----------------|
| 1 | C | 11 | TRUE |
| 2 | D | 12 | TRUE |
| 3 | B | 13 | TRUE |
| 4 | A | 14 | FALSE |
| 5 | D | 15 | FALSE |
| 6 | B | 16 | Unidirectional |
| 7 | A | 17 | John.D.Kraus |
| 8 | B | 18 | small |
| 9 | C | 19 | MW |
| 10 | D | 20 | higher |

MULTIPLE CHOICE QUESTIONS

UNIT-5: VHF, UHF and MW ANTENNAS-II

1. Micro strip antenna was first introduced by []
A). Marconi
B). Hertz
C). Munson
D). Cassegrain
2. The widely used shape for patch antennas is []
A). Rectangular
B). Circular
C). Elliptical
D). Parabolic
3. The efficiency of Micro strip antenna is []
A). High
B). Very high
C). infinite
D). Low
4. For square corner reflector the flaring angle is []
A). 30 degrees
B). 60 degrees
C). 90 degrees
D). 180 degrees
5. The no. of images formed for a square corner reflector, using method of images are... []
A). 3
B). 5
C). 7
D). 6
6. The no. of images formed for a 30 degrees corner reflector, using method of Images are []
A). 3
B). 5
C). 7
D). 6
7. The no. of images formed for a 60 degrees corner reflector, using method of images are []
A). 3
B). 5
C). 7
D). 6
8. A single narrow beam of radiation results in square corner reflector for spacing of $s = \dots\dots\dots$ []
A). 2λ

B). λ

C). $3\lambda/2$

D). $\lambda/2$

9. Two narrow beams of radiation results in square corner reflector for spacing of $s=$

[]

A). 2λ

B). λ

C). $3\lambda/2$

D). $\lambda/2$

10. Three narrow beams of radiation results in square corner reflector for spacing of $s=$

[]

A). 2λ

B). λ

C). $3\lambda/2$

D). $\lambda/2$

TRUE OR FALSE

11. A parabola is a three dimensional curve.

[]

12. A paraboloid is a three dimensional curve.

[]

13. Fermat's principle must be followed to get a plane wave front from the dish antenna.

[]

14. In any dish antenna arrangement the parabolic reflector will acts as primary antenna

[]

15. In any dish antenna arrangement the parabolic reflector will acts as secondary antenna

[]

FILL IN THE BLANKS

16. The directivity of the paraboloid is-----

17. The generally used feed antenna for paraboloids is-----

18. The horn and hyperbola are used in-----feed of dish antennas.

19. The disadvantage (draw back) of parabolic reflector is-----

20. The parabolic antenna operates in the frequency range of-----

ANSWERS:

| Q. No. | ANSWER | Q. No. | ANSWER |
|--------|--------|--------|--------|
| 1 | C | 11 | FALSE |
| 2 | A | 12 | TRUE |
| 3 | D | 13 | TRUE |
| 4 | C | 14 | FALSE |
| 5 | A | 15 | TRUE |
| 6 | C | | |
| 7 | B | | |
| 8 | D | | |
| 9 | B | | |
| 10 | C | | |

| Q. No. | ANSWER |
|--------|---------------------|
| 16 | $9.87(d/\lambda)^2$ |
| 17 | HORN ANTENNA |
| 18 | CASSEGRAIN |
| 19 | SPILOVER EFFECT |
| 20 | MW OR GHZ |

TRUE OR FALSE QUESTIONS

- | | | |
|---|---|---|
| 11. All antenna measurements are accurate. | [|] |
| 12. All antenna measurements will be done in the far field | [|] |
| 13. Cylindrical coordinate system will be choosed for all antenna measurements. | [|] |
| 14. For better antenna measurements the tolerance value must be as large as possible. | [|] |
| 15. Anechoic chamber can be preferred for antenna measurements. | [|] |

FILL IN THE BLANKS QUESTIONS

16. Frii's transmission formula is.....
17. Comparision method for measurement of antenna gain is also called as.....
18. The formula for gain using comparision method is.....
19. In two antennas method the assumption is.....
20. In the case of circular or elliptical polarizations the the total antenna gain is given by G_{AUT}
=.....

| Q.NO. | ANSWER | Q.NO. | ANSWER |
|-------|--------|-------|--------|
| 1. | b | 11. | FALSE |
| 2. | a | 12. | TRUE |
| 3. | a | 13. | FALSE |
| 4. | b | 14. | FALSE |
| 5. | c | 15. | TRUE |
| 6. | c | | |
| 7. | a | | |
| 8. | b | | |
| 9. | b | | |
| 10. | c | | |

| Q.NO. | ANSWER |
|-------|--|
| 16. | $P_R = P_T G_T G_R (\lambda / 4\pi R)^2$ |
| 17. | Gain-Transfer |
| 18. | $G_{AUT} = (P_{AUT} / P_{ref}) G_{ref}$ |
| 19. | $G_R = G_T$ |
| 20. | $G_H + G_V$ |

- 13) The frequency below which the entire power gets absorbed is referred to as the Maximum Usable Frequency (MUF). []
- 14) The frequency at which there is optimum return of wave energy is called the Optimum Frequency (OF). []
- 15) Virtual height is always lesser than the Actual height. []

FILL IN THE BLANKS QUESTIONS

- 16) The horizon of the earth, d_0 is given by-----
- 17) In ground or surface wave propagation the electric field at the receiving point is given by is given by-----
- 18) In free space the power received is given by P_r =-----
- 19) The basic path loss for general communication is given by-----
- 20) The relation between Critical Frequency and MUF is-----

| Q.NO. | ANSWER |
|-------|--------|
| 1 | C |
| 2 | A |
| 3 | B |
| 4 | C |
| 5 | B |
| 6 | A |
| 7 | D |
| 8 | B |
| 9 | B |
| 10 | D |

| Q.NO. | ANSWER |
|-------|--------|
| 11 | FALSE |
| 12 | TRUE |
| 13 | FALSE |
| 14 | TRUE |
| 15 | FALSE |

| Q.NO. | ANSWER |
|-------|---|
| 16 | $3.57(\sqrt{h_t} + \sqrt{h_r}) \text{ Km}$ |
| 17 | $\frac{4\pi h_t h_r E_0}{\lambda d^2}$ |
| 18 | $P_r = (P_t G_t G_r \lambda^2) / (4\pi R)^2$ |
| 19 | $P_l = 32.45 + 20 \log_{10} f + 20 \log_{10} d$ |
| 20 | $f_{MUF} = f_c \sec \phi_i$ |