

## UNIT – III

### Synthetic Organic Polymers and Nanomaterials

1. Polycarbonates are....

- a. Polyamides
- b. Polyether
- c. Polyenes
- d. Polyester

s Ans: d.

2. BIOPOL is common name of ..... polymer.

- a. PPF
- b. PHBV
- c. PPV
- d. Both of a & b

b Ans: b.

3. n- doping and p-doping of conducting polymer is done by..... & respectively.

- a. I<sub>2</sub> & FeCl<sub>3</sub>
- b. I<sub>2</sub> & Li
- c. FeCl<sub>3</sub> & I<sub>2</sub>
- d. Li & I<sub>2</sub>

I<sub>2</sub> Ans:

b.

4. Polyacetylene in undoped state acts as....

- a. good conducting polymer
- b. insulator
- c. semiconductor
- d. none of these.

Ans: c.

5. Out of following which one acts as plasticizer?

- a. phenol
- b. Tricresyl phosphate
- c. phthalate esters
- d. both b and c

Ans: d.

6. In OLED of polyphenylene vinylene acts

as anode

- a. Calcium
- b. Magnesium
- c. Aluminium
- d. Indium tin oxide

Ans: d.

7. Trans –polyacetylene has .....conductivity than its cis isomer.

- a. higher
- b. less
- c. equal
- d. very less

Ans:

a.

8. Lexan is nothing but....

- a. PPV
- b. Polyisoprene
- c. Kevlar
- d. Polycarbonat

e Ans: d.

9. CDs and DVDs can be made by using.....

- a. Polycarbonate
- b. PPV
- c. PHBV
- d. Kevlar

r Ans:

a.

10. Kevlar is..... type of liquid crystal.

- a. Smectic
- b. Cholesteric
- c. Thermotropic
- d. Lyotropic

c Ans: d.

11. Which of the following is not true for PPV?

- a. It is diamagnetic material
- b. It shows yellow-green fluorescence.
- c. Its conductivity increases on doping
- d. It is water soluble

Ans: d

12. Electroluminescence of PPV is due to....

- a. Conjugated pi bond system
- b. Doping
- c. Combination of holes and electrons
- d. None of these

Ans: c

13. Which of the following application does not belong to PHBV (HB-HV-Copolymer)?

- a. Structural material
- b. Drug delivery
- c. Internal suture
- d. Packing

g Ans: a

14. Nanomaterials are the materials in which size of particles ranges from----

- (a) 1nm-100nm
- (b) 1cm-100cm
- (c) 1mm-100mm
- (d) 1m-100m

Ans. a

15. Zero dimensional nanomaterials are-

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- (a) CNT
- (b) Quantum dots
- (c) C60
- (d) all of

these Ans. b

16. Nanowires are--dimensional nanomaterials

- (a) 0D
- (b) 1D
- (c) 2D
- (d) 3D

Ans.

B

17. Nanoplates are ---nanomaterials

- (a) 0D
- (b) 1D
- (c) 2D
- (d) 3D

Ans.

c

18. The transparent and flexible conductor used in photovoltaic devices is-

- (a) Fullerenes
- (b) CNTs
- (c) Quantum dots
- (d) Graphen

e Ans. d

19. A single layer of carbon atoms organized in a hexagonal lattice is called as-

- (a) Graphite
- (b) CNT
- (c) Fullerene
- (d) Graphen

e Ans. d

20. All the carbon atoms in Graphene are

-----  
hybridized

(a) sp

(b) sp

2

(c) sp<sup>3</sup>

(d) none of these

Ans. b

21. Graphene is ---hexagonal lattice

- (a) 0D
- (b) 1D
- (c) 2D
- (d) 3D

Ans.

c

22. Graphene is ----- conductor of electricity

- (a) Good
- (b) Bad
- (c) Semi
- (d) None of

these Ans. a

23. Zigzag and armchair CNTs are -----

- (a) Chiral
- (b) Achiral
- (c) twisted
- (d) None of

these Ans. b

24. Which type of CNTs shows Chiral structure?

- (a) Zigzag
- (b) armchair
- (c) helical
- (d) MWCNT

Ans. c

25. Carbon atoms in CNT are

-----Hybridized.

(a) sp

(b) sp<sup>2</sup>

(c) sp<sup>3</sup>

(d) none of these

Ans. b

26. Which nanomaterial is used as the nanocylinders for H<sub>2</sub> storage?

- (a) Quantum dots
- (b) graphene
- (c) fullerene

(d) CN

T Ans.

d

27. The nanoparticles of cadmium selenide and Indium arsenide are known as ----

(a) Quantum dots

(b) CNT

(c) Graphene

(d) nanowire

e Ans. a

28. Larger Quantum dots 5-6nm emits longer wavelength with colors----

(a) Blue and green

(b) orange and red

(c) Blue and red

(d) green and red

Ans b

29. Smaller quantum dots emit shorter wavelength with colors---

-

(a) Blue and green

(b) orange and red

(c) Blue and red

(d) green and red

Ans. a

30. Which nanomaterials are used to improve existing LED design/?

(a) CNT

(b) Graphene

(c) Quantum dots

(d) none of

these Ans. c

31. If a quantum dot material is coupled with an organic dye yield -----

(a) Fluorescent dye

(b) inorganic dye

(c) traditional dye

(d) none of

these Ans. a

32. Which nanomaterial is used in QLED displays?

(a) CNT

(b) graphene

e

(c) fullerene

(d) Quantum dots

Ans. d

33. Why quantum dots show color glow when illuminated by UV light?

(a) Fluorescent nanoparticles

(b) 1D nanoparticle

(c) 2D nanoparticle

(d) none of

these Ans. a

34. Which nanomaterials are used for Filtration?

(a) CNT

(b) graphene

e

(c) fullerene

(d) Quantum dots

Ans. a

35. Gold nanoparticles shows which magnetic properties-

(a) Diamagnetic

(b) ferromagnetic

(c) non magnetic

(d) none of

these Ans. b

36. The gold based CNT nanowires are selective and sensitive to detection of-

(a) ZnO

(b) CO

(c) H<sub>2</sub>S

(d) NH<sub>3</sub>

3 Ans.

c

37. In power plant emissions which nanomaterials used as air pollution filter?

(a) CNT

(b) graphene

e

(c) fullerene

(d) Quantum dots

Ans. a

38. Armchair and zigzag CNT are the types of-

(a) SWCNT

(b) MWCNT

(c) Helical CNT

(d) None of

these Ans. a