PAPER CODE :5011

M.Sc.Sem.-III (OLD COURSE)

July-Sept-2021

SE : CHN-604(B)

"Photo Inorganic Chemistry"

કુલ સમય :– ૩૦ મીનીટ કુલ પ્રશ્નો : ૩૫ વિદ્યાર્થીએ ટીક કરવાના પ્રશ્નો : ૨૫

નોંધ : વિદ્યાર્થીએ માત્ર ૨૫ પ્રશ્નો જ ટીક કરવાના રહેશે. જો વધારે ટીક કરેલ હશે તો પ્રથમ ૨૫ પ્રશ્નો જ ગણતરીમાં લેવામાં આવશે.

1. Which light is imparted to molecule in photochemistry?
A) Visible B.Ultra violet C.Both A and B D.None of these.

2. At which temperature light is irradiated to molecule?
A) Ordinary temp. B.High temp. C.Law temp. D.At 0^{o} C

3. Transition metal complexes absorb which wavelength of light ?
A) Certain wavelength B.All wavelength C.Any wavelength D.No light absorb

4. How many photo chemically excited state(s) can be achieved by transition metal complexes?
A) One B.Two C.Three D.Four

5. Which types complexes (compounds) are intesively coloured ?
A) Contains Metal-Metal Bond B.Absence of Metal-Metal Bond
C.Chelated complexes D.Non-chelated complexes

6. Which complex is used for photolysis of water?
A) [Co (NH3)6]+3 B.[Fe(CN)6]-4 C.[Fe(CN)6]-3 D.[Ru(bipy)3]+2

7. which metal undergo one electron reduction process by Beta-diketon ligand?
A) Mn+3 B.Fe+3 C.Co+3 D.All of these

8.How many photoactive excited states of trans-Rh(CF3CHCOCHMe)3 which may have significant radical character?
A) Zero B.One C.Two D.Three

9.At which wavelength irradiation of trans-Cr(CF3CHCOCHMe)3 causes isomerization?
A) 254 nm B.>= 366 nm C.Both A and B D.None of these

10.At 254 nm wavelength trans-Cr(CF3CHCOCHMe)3 can under go which process?
A) Decomposition B.Isomerization C.Crystallisation D.None of these.

11.which of the following light is emmited through fluorescence?
A) Visible light B.Ultra violet light C.Infra red light D.All of these

12. No florescence will be observed in gases, unless the pressure is____?
A) Law B.High C.Medium D.Zero

13. according to Stoke's Law during florescence the wave length of absorbed light is _____ than emitted light.
A) Greater B.Smaller C.Equal D.All of these

14. Even after cut off incident light irradiated to molecules which phenomenon observed?
A) Florescence B.Phosphorescence C.Both A and B D.None of these

15.The Phosphorescence is shown mainly by?
A) Solid B.Liquid C.Gases D.Coloid

16.The time for which the light is emitted from phosphorescent substances depends upon the……..
A) Nature of substance B.Temperature C.Bother A and B D.Pressure

17.which of the followlwing substance is naturally occurring florescent substance?
A) Acetone B.Patra din C.Chlorophyll D.Iodine

18. which of the following structures are termed as flurophores?
A) C=C B.N=O C.N=N D.All of these

19.which types of functional groups diminish or inhibit florescence completely?
A) Election withdrawing B.Election Accepting C.Both A and B D.None of these

20.which of the following compound is not the example of florescent substance?
A) Naphthalene B.Aniline C.Vitamin A D.Acridine

21.which one of the following is highly florescent?
A) Benzoic acid B.Aniline C.Naphthalene D.Acridine

22.Reaction are characterised by an initial period of time during which the process appear to be silent is known as…

A) period of induction B.Period of conduction

C. Both A and B D.None of these

23. For which reaction, the induction period is observed when certain impurities are present…

A) Chlorine B.Hydrogen C.Both A and B D.None of these

24.which of the following gase shows inhibition action in some photo chemical reactions?

A) SO2 gas B.O2 gas C.NE gas D.Both A and B

25. The phenomenone of bioluminscence was investigated by…

A) Humpty Davy B.Robert Hook C.E N Harvey D.Charles Darwin

26.which enzyme is responsible for bioluminescence in fire flow

A) Zymase B.Invertase C.Luciferase D.None of these

27.A classical example of chemiluminescence is….

A) phosphorous produce green-yellow glow

B) strontium chloride give feeble glow with dil.H2SO4 in dark

C) greenish blue glow produce by p-bromophenyl magnesium bromide in ether

D) All of these

28.The surface of mercury is allowed to come in contact with stream with atomic hydrogen_____ florescence appear

A) Green B.Yellow C.Blue D.Red

29.A photosensitiser acts as a _____ of energy

A) Carrier B.Absorber C.Both A and B D.None of these

30. Which of the following is/are example(s) of photosensitization by mercury?

A) Decomposition of phosphine B.Ozonalysis of oxygen

C. Decomposition of water vapour D.All of these

31. which metal is used as a photo sensitiser for the polymerisation of ethylene?

A) Cadmium B.Strontium C.Mercury D.Zinc

32 which ion is used as photo senitiser in the photo lysis of Oxalic and formic acid

A) Fe+3 B.Cr+3 C.UO_2^{+2} D.All of the above

33. Which of the following is acts as a photo sensitiser in photosynthesis of carbohydrate from CO2 and H2O

A) Hemoglobin B.Chlorophyll C.Both A and B D.None of these

34.sensitised and resonance florescence are example of

A) Stoke's behavior B.Antistoke's behaviour

C. Evans behavior D.None of these

35. When a photochemically excited atom has a chance to under go collision with another atom or a molecule before it fluoreces,the intensity of the flurosencent radiation may be diminished or stopped this phenomenon is known as…

A) Quenching of fluorescence

B) Sensitisation of fluorescence

C) Resonance of fluorescence

D) All of these.