CET QUESTIONS AND ANSWERS TOPIC- BIOENERGETICS AND PHOTOSYNTHESIS

- 1) The father of ATP cycle is
- 1) Karl Lohmann
- 2) Fritz Lipmann
- 3) Willard Gibbs
- 4) FF Blackmann

2) ATP molecules in living system is synthesized by

- 1) Photophosphorylation
- 2) dephosphorylation
- 3) Decarboxylation
- 4) Oxidation

3) -----introduced chlorella as a good experimental alga for studying photosynthesis

- 1) Lavoisier
- 2) Warburg
- 3) Joseph priestly
- 4) Ruben and Camen
- 4) The last phosphate to phosphate bond in ATP when broken realeases
- 1) 3.3 Kcal/mole
- 2) 6.5 Kcal/mole
- 3) 7.3 Kcal/mole
- 4) 8.15 Kcal/mole
- 5) Photosynthesis is----reaction
- 1) Catabolic
- 2) exergonic
- 3) redox
- 4) Oxidative

6) Granal and Agranal chloroplast are found in

- 1) C3 plants
- 2) C4 plants
- 3) CAM plants
- 4) Bacteria
- 7) Chloroplast DNA is mostly
- 1) Circular
- 2) Linear
- 3) Semi circular
- 4) Single stranded

- 8) Chlorophyll d is present in
- 1) Green algae
- 2) Brown algae
- 3) Blue green algae
- 4) Red algae

9) The center of chlorophyll molecule contains

- 1) Mg
- 2) Fe
- 3) Mo
- 4) Mn

10) Autumnal coloration of leaves is due to

- 1) Carotenes
- 2) Xanthophylls
- 3) Phycobilins
- 4) Chlorophylls
- 11) The reaction center of PSII is
- 1) P700
- 2) P680
- 3) P870
- 4) P600

12) Copper containing electron carrier in photosynthesis

- 1) Feredoxin
- 2) Plastoquinone
- 3) Plastocyanin
- 4) Cytochromes

13) Carbon assimilation in dark reaction of photosynthesis is a

- 1) Linear process
- 2) Non cyclic process
- 3) Cyclic process
- 4) Reversible process

14) Dark reaction of photosynthesis occurs in-----part of chloroplast

- 1) Outer membrane
- 2) Inner membrane
- 3) periplastidal space
- 4) Matrix

15) The isomer of PGAL is

- 1) PGA
- 2) DHAP
- 3) PEP
- 4) OAA

16) In photorespiration, C3 plants

1) Consume Oxygen and release carbon dioxide

2) Consume Carbon dioxide and release oxygen

3) Consume both oxygen and carbon dioxide

4) Consume neither oxygen nor carbon dioxide

17) Which one of them is not needed for photolysis of water?

- 1) Mn^{2+}
- 2) Cl⁻
- 3) Ca^{2+}
- 4) Mg^{2+}

18) One of the events do not occur during non cyclic photophosporylation

- 1) Photo excitation of chlorophyll
- 2) Photo oxidation of water
- 3) Photophosphorylation
- 4) Photoreduction of carbon dioxide

19) Cyclic photophosphorylation occurs when

- 1) During low light intensity
- 2) When uv wave length of light is available
- 3) Non availability of water
- 4) Non availability of chlorophyll

20) Which one of the statement is wrong with regard to PSI?

- 1) Its reaction center is P700
- 2) It is not connected to OEC
- 3) It passes its electron to NADP
- 4) It occurs exclusively in the membrane of thylakoids

21) Which one of the statement is true with regard to PSI?

- 1) Its reaction center is P680
- 2) It is connected to OEC
- 3) It is involved both in cyclic and non cyclic ETS
- 4) It participates only in non cyclic ETS

22) Which one of the feature is not associated with C4 PLANTS?

- 1) The leaves possesses Kranz anatomy
- 2) Plants occur in temperate areas
- 3) mesophyll is undifferentiated
- 4) Chloroplasts are dimorphic

23) Which among the fallowing group of plants exhibit xerophytic features?

- 1) CAM plants
- 2) C3 plants
- 3) C4plants
- 4) Bryophytes

24) Which one among the fallowing is not required for Hill Reaction?

- 1) Sun light
- 2) PSI and PSII
- 3) Water
- 4) Carbon dioxide

25) Which of the fallowing will be reflected when a beam of light falls on chloroplast

- 1) Red
- 2) Green
- 3) Blue
- 4) White

26) The term quanta some was coined by

- 1) Park and Biggins
- 2) Emerson
- 3) Jacob and Monad
- 4) Blackmann

27) phycocyanin and phycoerithrin are found in

- 1) Green algae
- 2) Brown algae
- 3) Blue green algae
- 4) Diatoms

28) The quantum of energy of photon is

- 1) Directly proportional to wavelength
- 2) Inversely proportional to wavelength
- 3) Independent of wavelength
- 4) Indirectly proportional to frequency

29) Match the fallowing

Column I

column II

A) carboxylating enzyme	p)NADPH
B) Reducing agent	q)Aldolase
C) Condensation enzyme	r)Rubisco

A) A=r,B=q,C=p B) A=r,B=p,C=q C) A=q,B=p,C=r D) A=q,B=r,C=p

30) With regard to C4 plants which one of the fallowing statement is wrong?

- 1) They are adapted to saline condition
- 2) They do not show photorespiration
- 3) Bundle sheath cells are chlorenchymatous
- 4) Mesophyll cells are differentiated

- 31) The rate of photosynthesis is independent of
- 1) Light
- 2) Temperature
- 3) Water
- 4) Pressure
- 32) Which of the fallowing pair is wrong?
- 1) C3 plants- sugarcane
- 2) C4 plants-Amaranthus
- 3) CAM plants -Sedium
- 4) Calvin cycle-PGA

33) Which of the fallowing does not evolve oxygen?

- 1) C3 plants
- 2) C4 plants
- 3) CAM plants
- 4) Bacteria

34) Chlorophyll molecules are green in colour because they

- 1) Transmit green light
- 2) Transform green light
- 3) Reflect green light
- 4) Absorb green light

35) Mohl's half leaf experiment is to prove that

- 1) Carbon dioxide is necessary for photosynthesis
- 2) Oxygen is released during photosynthesis
- 3) Light is essential for photosynthesis
- 4) Chlorophyll is essential for photosynthesis

36) The seven carbon compound formed during dark reaction of photosynthesis is

- 1) PGA
- 2) RUDP
- 3) Erythrose
- 4) Sedoheptulose

37) The 4 carbon, 5 carbon and 7 carbon compounds are formed during

- 1) carboxylation phase
- 2) Reduction phase
- 3) Phosphorylation phase
- 4) Regeneration phase

38) Chlorophyll of bundle sheath cells

- 1) Larger in size, without grana
- 2) Smaller in size, without grana
- 3) Larger in size, with grana
- 4) Smaller in size, with grana

- 39) Oxygen has no inhibitory effect in
- 1) C3 plants
- 2) C4 plants
- 3) CAM plants
- 4) C2 plants
- 40) Photosynthesis takes place between
- 1) 400 to 750mµ
- 2) 250 to 600mµ
- 3) 400 to 500mµ
- 4) 500 to 900mµ
- 41) The stack of thylakoids in a chloroplast is called
- 1) Stroma lamellae
- 2) Cristae
- 3) Granum
- 4) Racker's particles

42) Which component of the chloroplast is called CF_0CF_1 complex

- 1) Electron carriers
- 2) ATP synthase
- 3) Matrix enzymes
- 4) Chlorophylls

43) The ultimate source of all biological energy comes from

- 1) ATP
- 2) Phosphate
- 3) Water
- 4) Sun light

44) Which of the fallowing is not an autotroph

- 1) Avicenia
- 2) pistia
- 3) Yeast
- 4) Diatoms

45) -----light quanta are required to release one molecule of oxygen from water

- 1) Two
- 2) Four
- 3) Eight
- 4) Sixteen

46) Only ATP is synthesized in

- 1) Cyclic electron transport
- 2) Non cyclic electron transport
- 3) Dark reaction
- 4) Photolysis of water

47) Match the fallowing Column IA) Carbon dioxideB) OxygenC) Chlorophyll a

D) Chlorophyll b

1) A=s,B=r,C=q,D=p 2) A=s,B=p,C=q,D=r 3) A=q,B=p,C=s,D=r

4) A=s,B=r,C=p,D=q

48) Match the fallowing Column IA) Ganong's light screenB) Test tube funnel experimentC) Vareigated leaf experiment

- D) Mohl's half leaf experiment
- A) A=s,B=r,C=q,D=p B) A=s,B=p,C=q,D=r
- C) A=q,B=p,C=s,D=r
- D) A=s,B=r,C=p,D=q

49) Match the fallowing Column IA) Light reactionB) Dark reactionC) Hatch-slack reactionD) Rubisco

A) A=s,B=r,C=q,D=p B) A=s,B=p,C=q,D=r C) A=q,B=p,C=s,D=r D) A=s,B=r,C=p,D=q

50) Match the fallowing Column I

- A) P700B) P680C) ATPD) NADPH
- A) A=s,B=r,C=q,D=p B) A=s,B=p,C=q,D=r C) A=q,B=p,C=s,D=r D) A=s,B=r,C=p,D=q

Column II

- p) by product of photosynthesis
- q) raw material for photosynthesis
- r) accessory pigment
- s) primary photosynthetic pigment

Column II

- p) to show chlorophyll is necessary
- q) to show CO₂ is necessary
- r) to show evolution of oxygen
- s) to show light is necessary

Column II p) enzyme q) C4 pathway r) Calvin cycle s) Hill reaction

Column II

p) PSIIq) PSIr) Rducing agents) energy source