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**Subject: Biology**

**Topic: Plant Physiology , Human Health & Diseases , Biotechnology**

**M.M. 360 COMPETITIVE TEST**  **Time: 60 Min.**

1. Who demonstrated that O2 comes out from water instead from CO2 during photosynthesis.

|  |  |  |  |
| --- | --- | --- | --- |
| a) van Niel | b) Engelmann | c) Blackman | d) Warburg |

1. Dark reaction :

|  |  |
| --- | --- |
| a) Occur in light | b) Occur in dark |
| c) Required product of light reaction | d) All of these |

1. A graph that plots the effect of different wavelength of light on the rate of photosynthesis is called :

|  |  |  |  |
| --- | --- | --- | --- |
| a) absorption spectrum | b) adsorption spectrum | c) pigment kinetics | d) action spectrum |

1. Photosystems are made up of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) reaction centre | b) antennae | c) reaction centre and H2O | d) Both (a) and (b) |

1. PS-I has absorption peak at \_\_\_\_\_\_nm and PS-II has absorption peak at \_\_\_\_\_\_\_nm.

|  |  |  |  |
| --- | --- | --- | --- |
| a) 700 , 800 | b) 680 , 700 | c) 700 , 680 | d) 800 , 700 |

1. Phosphorylation in chloroplast is similar to the :

|  |  |
| --- | --- |
| a) mitochondrial substrate level Phosphorylation | b) mitochondrial oxidative Phosphorylation |
| c) Mitochondrial hydrolysis of water | d) all of these |

1. NADP reductase enzyme is present on the :

|  |  |
| --- | --- |
| a) Lumen side of membrane | b) lamellae side of membrane |
| c) stroma side of membrane | d) cell membrane of chloroplast |

1. In dark reaction, regeneration of RuBP needs :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 2 molecules of ATP | b) 1 molecules of ATP | c) 4 molecules of ATP | d) 3 molecules of ATP |

1. In dark reaction, one molecule of glucose formation needs :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 12 ATP and 12 NADPH | b) 14 ATP and 12 NADPH | c) 16 ATP and 12 NADPH | d) 18 ATP and 12 NADPH |

1. Law of limiting factor in relation to photosynthesis is proposed by :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Blackman | b) Wiseman | c) Calvin | d) Emerson |

1. The plant that respond to high temperature and shows higher rate of photosynthesis are :

|  |  |  |  |
| --- | --- | --- | --- |
| a) C4 | b) C3 | c) CAM | d) Both (a) and (b) |

1. When CO2 is added to PEP , the first stable product synthesized is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) pyruvate | b) glyceraldehyde -3-phosphate | c) phosphoglycerate | d) oxaloacetate |

1. Plant growth is unique because :

|  |  |
| --- | --- |
| a) plant bears capacity for unlimited growth | b) plant bears capacity for limited growth |
| c) plant bears capacity for diffuse growth | d) none of above |

1. The tissue responsible for secondary growth in plants are :

|  |  |  |  |
| --- | --- | --- | --- |
| a) vascular cambium | b) cork cambium | c) lateral meristem | d) all of these |

1. In geometrical growth, lag phase represents :

|  |  |  |  |
| --- | --- | --- | --- |
| a) initial rapid growth | b) later rapid growth | c) initial slow growth | d) later slow growth |

1. The living differentiated cells, regain the capacity of division under certain conditions, which is called :

|  |  |  |  |
| --- | --- | --- | --- |
| a) redifferentiation | b) dedifferentiation | c) differentiation | d) reverse division |

1. The ability of plants to follow different pathways to form different structure in response to environment :

|  |  |  |  |
| --- | --- | --- | --- |
| a) plasticity | b) elasticity | c) growth | d) development |

1. Which hormone was first isolated from human urine?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Auxin | b) ABA | c) ethylene | d) gibberellic acid |

1. An auxin which is widely used to kill dicotyledonous weed is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) IAA | b) IBA | c) NAA | d) 2, 4-D |

1. Which plant hormone is found in gaseous form?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Auxin | b) cytokinin | c) ethylene | d) ABA |

1. Most widely used compound as a source of ethylene is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) nepthol | b) acetol | c) ethephon | d) ethepcon |

1. The shedding of leaves, flowers and fruits due to changes in hormonal levels in plants, called as :

|  |  |  |  |
| --- | --- | --- | --- |
| a) senescence | b) abscission | c) photoperiodism | d) vernalization |

1. Which organelle synthesis the abscisic acid?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Golgi body | b) ER | c) Lysosome | d) chloroplast |

1. ABA acts as antagonist to :

|  |  |  |  |
| --- | --- | --- | --- |
| a) ethylene | b) cytokinin | c) gibberellic acid | d) IAA |

1. The name of Mary Mallon is related with the disease

|  |  |  |  |
| --- | --- | --- | --- |
| a) typhoid | b) pneumonia | c) dengue | d) AIDS |

1. Ethylene is used for :

|  |  |
| --- | --- |
| a) retarded ripening of tomatoes | b) hastening the ripening of fruits. |
| c) slowing down the ripening of apples | d) Both (b) and (c) |

1. Pneumonia is an infection of the …..A….. . The most common cause of pneumonia is a type of bacteria known as …..B….. and …..C….. . Most suitable combination to fill the blank is
2. A – liver, B – Salmonella typhi, C – streptococcus pneumoniae
3. A – lungs, B – Streptococcus pneumoniae, C – Haemophilus influenzae
4. A – blood, B – Streptococcus pneumoniae, C – Haemophilus influenzae
5. A – heart, B – Salmonella typhi, C – Haemophilus influenzae
6. Malaria is caused by

|  |  |  |  |
| --- | --- | --- | --- |
| a) plasmodium vivax | b) plasmodium ovale | c) plasmodium falciparum | d) all of above |

1. Entamoeba histolytica is a parasite of

|  |  |  |  |
| --- | --- | --- | --- |
| a) large intestine | b) liver | c) lungs | d) kidney |

1. which disease does mosquito transmitted pathogen cause chronic inflammation of lymphatic vessels?

|  |  |  |  |
| --- | --- | --- | --- |
| a) ringworm disease | b) ascariasis | c) elephantiasis | d) amoebiasis |

1. Which type of barriers do saliva in the mouth, tears form ice and acid in the stomach belong?

|  |  |  |  |
| --- | --- | --- | --- |
| a) cytokinin barriers | b) cellular barriers | c) physiological barriers | d) physical barriers |

1. The interferons can be used as

|  |  |  |  |
| --- | --- | --- | --- |
| a) antibacterial drugs | b) antiviral drugs | c) antibiotic drugs | d) immunosuppressive |

1. The most abundant class of immunoglobulin(Igs) in the human body is

|  |  |  |  |
| --- | --- | --- | --- |
| a) IgA | b) IgM | c) IgG | d) IgE |

1. Common example of allergens are

|  |  |  |  |
| --- | --- | --- | --- |
| a) dust | b) pollen grains | c) animal dander | d) all of these |

1. The genes causing cancer are

|  |  |  |  |
| --- | --- | --- | --- |
| a) structural genes | b) expressor genes | c) oncogenes | d) regulatory genes |

1. In malignant tumours, the cells proliferate, grow rapidly and move to other parts of the body to form new tumours. This stage of disease is called

|  |  |  |  |
| --- | --- | --- | --- |
| a) metagenesis | b) metastasis | c) teratogenesis | d) mitosis |

1. The flower tops, leaves and the resin of cannabis sativa are used to produce

|  |  |  |  |
| --- | --- | --- | --- |
| a) marijuana | b) hashish | c) charas | d) all of these |

1. The drug that produces profound cardiovascular effects in human beings is

|  |  |  |  |
| --- | --- | --- | --- |
| a) cocaine | b) ganja | c) benzodiazepine | d) insulin |

1. The first r-DNA was constructed by :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Cohen | b) Boyer | c) Temin and Baltimore | d) Both (a) and (b) |

1. The linking of antibiotic resistance gene with the plasmid vector became possible with

|  |  |  |  |
| --- | --- | --- | --- |
| a) DNA ligase | b) RNA ligase | c) DNA polymerase | d) RNA polymerase |

1. How many restriction enzymes are isolated till now?

|  |  |  |  |
| --- | --- | --- | --- |
| a) 920 | b) 940 | c) 900 | d) 230 |

1. Number of bacterial strains from which restriction enzymes has been isolated.

|  |  |  |  |
| --- | --- | --- | --- |
| a) 230 | b) 250 | c) 200 | d) 220 |

1. Which of the following option(s) is not correctly regarding Eco RI enzymes?

|  |  |
| --- | --- |
| a) Restriction endonuclease enzyme | b) Isolation from Escherichia coli RY13 |
| c) Cuts at specific position with in the DNA | d) None of the above |

1. Which of the following statement is incorrect?
2. Each restriction endonuclease recognized a specific palindromic nucleotide sequence.
3. Specific base sequence is known as recognition sequence.
4. Restriction enzymes cannot cut DNA.
5. Restriction enzymes belong to enzymes called nucleases.
6. A gene, whose expression helps to identify transformed cells is known as :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Selectable marker | b) Vector | c) Plasmid | d) Structural gene |

1. If recombinant DNA carrying antibiotic resistant gene (e.g. ampicillin) is transferred into E.coli cell, the host cell is transformed into ampicillin resistant cells. The ampicillin resistant gene in this case is called as:

|  |  |  |  |
| --- | --- | --- | --- |
| a) Vectors | b) Plasmid | c) Selectable marker | d) Cloning sites |

1. The method which is used to introduce recombinant DNA into animal cell?

|  |  |
| --- | --- |
| a) Gene gun method | b) Changing permeability of Host |
| c) Biolistic method | d) Microinjection |

1. An antibiotic resistant gene in a vector usually helps in the selection of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) competent bacterial cells | b) transformant bacterial cells | c) recombinant bacterial cells | d) none of above |

1. Agarose is extracted by :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Sea weeds | b) Blur-green algae | c) Ephedra | d) Sargassums |

1. In gel electrophoresis, restriction enzyme digested DNA is loaded in wells near :

|  |  |  |  |
| --- | --- | --- | --- |
| a) anode | b) cathode | c) centre of gel | d) anywhere in the gel |

1. The DNA fragments separated by an agarose gel can be visualized after staining with :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Bromophenol blue | b) Acetocarmines | c) Aniline blue | d) Ethidium bromide |

1. In gel electrophoresis, the separated DNA fragments are visualized after staining the DNA with EtBr followed the exposure to :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Infrared radiation | b) UV – radiation | c) – rays | d) Radio wave |

1. The Taq polymerase enzyme is obtained from :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Thiobacillus ferroxidans | b) Bacillus subtilis | c) Pseudomonas subtilis | d) Thermus aquatics |

1. A single PCR amplification cycle involves :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Denaturation | b) Extension | c) Annealing | d) All of these |

1. The process of separation and purification of expressed protein before marketing is called :

|  |  |
| --- | --- |
| a) Upstream processing | b) Downstream processing |
| c) Bio processing | d) Post-production processing |

1. Which of the following is not a component of downstream processing?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Separation | b) Purification | c) Preservation | d) Expression |

1. Plant, animals and fungi whose genes have been altered by manipulation are called :

|  |  |  |  |
| --- | --- | --- | --- |
| a) GMO | b) Hybrid organisms | c) pest resistance organisms | d) Insect resistant organisms |

1. Golden rice is a genetically modified crop plant with the incorporated gene is meant for biosynthesis of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Vitamin – B | b) Vitamin – C | c) Vitamin – B12 | d) Vitamin – A |

1. Which toxin is produced by Bacillus thuringiensis?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Bt toxin | b) An acid | c) t-toxin | d) none of these |

1. Some strains of Bt produces proteins that kill insect like:

|  |  |  |  |
| --- | --- | --- | --- |
| a) Lepidopterans | b) Coleopterans | c) Dipterans | d) All of these |

1. cry II Ab and cry I Ac produces toxin that control:

|  |  |
| --- | --- |
| a) Cotton bollworms and corn borer. | b) Corn borer only |
| c) Cotton bollworms only | d) Nematode and tobacco ball worms |

1. Silencing of a gene could be achieved through the use of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) RNAi only | b) Antisense RNA only | c) Both (a) and (b) | d) None of the above |

1. Human insulin is being commercially produced from a transgenic species of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) mycobacterium | b) Haemophilus influenza | c) Escherichia coli | d) Arthrobacter luteus |

1. Which of the following product obtained by rDNA technology is used for treatment of cancer?

|  |  |
| --- | --- |
| a) platelet derived growth factor | b) interferons |
| c) Humulin | d) Tissue-plasminogen activator |

1. Which of the following gene is defective in patients suffering from severe combined immunodeficiency syndrome?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Adenosine deaminase | b) Transacetylase | c) galactosidase | d) CFTR |

1. - 1 antitrypsin is :

|  |  |
| --- | --- |
| a) used to treat heart attack patient | b) used to treat emphysema |
| c) Used to deliver gene in plant cells | d) used to treat arthritis |

1. Denaturation in PCR is done at :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 72˚C | b) 96˚C | c) 65˚C | d) 80˚C |

1. There is a restriction endonuclease called EcoRI. What does ‘co; part in it stand for?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Coli | b) colon | c) coelom | d) coenzyme |

1. For transformation, micro-particles coated with DNA to be bombarded with gene are made up of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) silicon or platinum | b) gold or tungsten | c) silver or platinum | d) platinum or zinc |

1. Conversion of glucose to glucose-6-phosphate, the first irreversible reaction of glycolysis, is catalyzed by

|  |  |  |  |
| --- | --- | --- | --- |
| a) hexokinase | b) enolase | c) phosphofructokinase | d) aldolase |

1. In animal cells, muscle, during exercise when O2 is inadequate for cellular respiration, pyruvic acid is reduced into lactic acid by

|  |  |  |  |
| --- | --- | --- | --- |
| a) O2 | b) carboxylation | c) lactate dehydrogenase | d) none of these |

1. Glucose-6-phosphate Fructose-6-phosphate. Identify the enzyme used in the above reaction.

|  |  |  |  |
| --- | --- | --- | --- |
| a) Aldolase | b) phosphofructokinase | c) Hexokinase | d) Isomerase |

1. RQ for anaerobic respiration is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 0.7 | b) 0.9 | c) unity | d) infinity |

1. Kreb’s cycle is completed with the formation of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Citric acid | b) Oxaloacetate | c) Succinic acid | d) Malic acid |

1. When 2 molecules of Acetyl-CoA enter the TCA cycle, net gain at the end of this cycle is :

|  |  |
| --- | --- |
| a) 2 NADH2 + 2 FADH2 + 1 GTP | b) 3 NADH2 + 2 FADH2 + 2 GTP |
| c) 6 NADH2 + 2 FADH2 + 2 GTP | d) 3 NADH2 + 1 FADH2 + 4 GTP |