Which of the following are true about flowers-
1.Flowers are objects of aesthetic, ornamental, social, religious and cultural value.
2. Flowers has been used as a symbol of conveying feelings like grief, mourning,and affection.
3. Human beings had an intimate relationship with flowers
4. An fascinating organ of Angiosperm.

Which is true about Floriculture
1. Floriculture is the cultivation and trade of flowers and division of ornamental horticulture that deals with growing,selling and arranging flower and ornamental plants.
2. The first evidence recorded evidence of floriculture dates back in the early 1500s
3. Flowers were grown in greenhouse in Holland.
4. Floriculture is a largely a greenhouse industry because flowers and potted plants are largely grown in plant growing systems in temperate climates and cultivated outdoors in nurseries or crop fields.

Based on biological term flowers are morphological and embryological marvels and the sites of which production?

1. Sexual reproduction.
2. Asexual reproduction
3. Photosynthesis
4. pollination

In flowers which two most important units of sexual reproduction develops?

1. Androecium.
2. Gynoecium.
3. Stigma
4. anther

Type of reproduction that involves fusion of gametes that are produced by two parents is called

1. Sexual reproduction.
2. Photosynthesis
3. Petal
4. Sepal

Androecium and gynoecium are the most important parts of sexual reproduction in plants as they produce.

1. Male gametes
2. Female gametes
3. Ovary
4. Stigma

In common which bears the floral buds and then the flowers

1. Inflorescences
2. Anthesis
3. Efflorescence
4. Florescence

Which is true about inflorecence

1. Inflorescence is the arrangement of flowers on the floral axis
2. Inflorescence is of two types they are racemose and cymose
3. Flowers may grow either as a single flower or as a group
4. A flower is a significant part of a plant tailored for reproduction

Several hormonal and structural changes are initiated which lead to the differentiation and further development of

1. Floral primordium
2. Gynoecium
3. Androecium
4. style

In the flower male and female reproductive structures differentiate and develop

1. Androecium
2. Gynoecium
3. Sepal
4. ovary

In an male reproductive organ androecium recollect and represent which organ

1. Stamens
2. Ovary
3. Sepal
4. Filament

Which are the two parts of a typical stamen

1. Filament
2. Anther
3. Bilobed
4. stalk(stalk is also right answer)

The proximal end of the filament is attached to which organs

1. Thalamus
2. Petal of the flower
3. Dehiscence
4. pollen sacs

A typical angiosperm anther is bilobed with each lobe having two theca ie

1. Dithecous.

2. Dihiscence
3. Stalk
4. anther

Which is true about bilobed nature of anther

1. The anther is a four sided(tetragonal) structure
2. Anther consist of four microsporangia
3. Microsporangia located at the corner two in each lobe
4. It is very distinct in the transverse nature of an anther

In certain conditions the microsporangia develop further into and become

1. Pollen sacs
2. Pollen grains
3. Dehiscence
4. Stalk

Microsporangia develop further extend longitudinally all through the length of an anther and are packed with

1. Pollen grains
2. Pollen sacs
3. Dithecous
4. bilobed

In a transverse section of microsporangium structure a typical microsporangium appears near outline in which form

1. circular
2. Helical
3. Spherical
4. square

Generally the structure of microsporangium surrounded by four wall layers which are

1. The epidermis
2. The endothecium
3. Middle layers
4. tapetum

The outer three wall layers perform to release the pollen and function for

1. Protection and help in dehiscence of anther
2. For transverse
3. For pollination
4. For filament

Out of four layers in the structure of microsporangium the inner most layer is the

1. Tapetum

2. The epidermis
3. Endothecium
4. Middle layers

Which of following statement is true regards to tapetum

1. Tapetum is the deepest layer of the anther which encompasses the sporongenous tissue
2. Tapetum is mostly multinucleated due to mitotic cell division an abnormal cell division can also lead to tapetum polyploidy
3. Tapetum is a huge structure and thus can absorb food and provide nutrition to the development of the pollen grains.
4. The cells of tapetum have dense cytoplasm.

How tapetal cells could become bi-nucleate?

1. Tapetal cells are very large cells with more than one nucleus which assist with pollen grain growth and development
2. Tapetal cells undergo endomitosis where the nucleus in the nuclear menrance splits but cytokinesis does not happen
3. The nuclei of tapetal cells also split as the sporogenous cells undergo mitosis
4. The cells are larger and have more than one nucleus per cell.

When the anther is young a group of compactly arranged homogenous cells called sporogenous tissue occupies which place in microsporangium.

1. Centre
2. Spherical
3. Hexagonal
4. Helical

When time matures the anther develops the cells of the sporogenous tissue which undergo meiotic divisions to form

1. Microspore tetrads
2. Connective
3. Endothecium
4. endothecium

What would be the ploidy of the cells of the tetrad?

1. The ploidy of the cell of the tetrad is haploidy.(meiosis is important to ensure the correct number of chromosomes in an organism.
2. The ploidy of each cell in a tetrad happiness to have a ploidy ‘n’
3. The meiosis is important to ensure the correct number of chromosomes in an organism.
4. Tetrad is a four celled cell.

Anthers mature and dehydrate the microspores dissociate from each other and develop into

1. Pollen grains

2. Pollen sacs
3. Tapetum
4. Middle layers

Into each microsporangium several thousands of microspores or pollen grains are formed that are released with the dehiscence of

1. Anther
2. Nucleus
3. Vacuoles
4. spindle

Male gametophytes also caled as the

1. Pollen grain
2. Pollen sac
3. Vacuoles
4. spindle

Powdery pollen grains of deposition can be found on the opened anthers of hibiscuss when touched would be in which colour

1. Yellow
2. Blue
3. Green
4. brown

Which of the following statement is true about pollen grains

1. Pollen grain has a prominent two layered wall
2. The hard outer layer called the exin is made up of sporopollenin which is one of the most resistant organic material known
3. It can withstand high temperatures and strong acids and alkali. Pollen grains are well preserved as fossils because of the presence of sporopollenin.
4. Pollen grain exine has prominent apertures called germpores where sporopollenin is absent.

The reason for exine should be hard.

1. Exine is the outermost layer of pollen grains an it helps in the protection of pollen grain development.
2. Due to presence of sporopollenin the exine is hard.
3. Sporopollenin is a hard and most resistant organic material that cannot be degraded by enzymes and can withstand severe
4. Exin protects pollen grains from unfavourable environmental conditions this exine being hard is the reason

The inner wall of the pollen grain is called the

1. Intine

2. Germpores
3. Exine
4. enzymes

What is the function of germ pore

1. One or more thin areas present in the exine of pollen grains are known as germ pores.
2. The germ pores are apertures in the exine layer of the pollen grain where the sporopollenin is absent
3. The germ pore helps in the formation of the pollen tube and the release of the male gametes during fertilization
4. There are usually three germ pores in dicots(tricolpate) an one in monocots(monocolpate)

The intine consist of thin and continuous layer which made up of

1. Cellulose
2. Pectin
3. Vacuoles
4. nucleus

The cytoplasm of pollen grain is surrounded by a

1. Plasma membrane
2. Vegetative cell
3. Generative cell
4. Asymmetric spindle

Which are the two cells in pollen grain that contain two cells

1. Vegetative cells
2. Generative cells
3. Asymmetric spindle
4. Vacuoles

Which of the statement is true about vegetative cell

1. The vegetative cell is bigger
2. It has abundant food reserve
3. It is irregularly shaped nucleus
4. These cells are produced from the cells which pre-exist through the process of sexual reproduction the normal living cells are vegetative cells.

Which of the statement is true about generative cell.

1. Generative cell is a small spindle shaped cell with dense cytoplasm and nucleus.
2. It floats freely in the cytoplasm of the vegetative cell
3. It undergoes mitotic division to give rise to the two male gametes
4. Microspores through the process of asymmetric cell division produce generative cells.

The generative cell divides mitotically to give rise to the two male gametes prior to the

1. Pollen grains are shed
2. Before food reserve exhaust
3. When the gametes become thin
4. Before it becomes hard.

Which of the statement is true in terms of pollen grains of many species

1. It causes severe allergies bronchial afflictions in some people
2. It often leading to chronic respiratory disorders
3. It cause pollen allergy
4. It is mentioned that parthenium or carrot grass that came into india as a contaminant with imported wheat.

Which of the statement is true regards to pollen grains

1. Pollen grains are rich in nutrients
2. In recent years the pollen tablets are used as food supplements
3. Pollen consumption has been claimed to increase the performance of athletics and race horses.
4. Pollen products are available in the form of tablets and syrups.

Which statement is true regards in terms of pollen grains in retaining viability

1. The ability of pollen to transfer male gametes for fertilization is called pollen viability
2. Viability can vary from some minutes to several months in different plant species
3. Pollen grains of wheat and rice show viability for 30 minutes.
4. Pollen grains of fabaceae show up to several months.

The period for which pollen grain remain viable is highly variablee and to some extent depends on the prevailing

1. Temperature
2. Humidity
3. Pressure
4. heat

In some cereals such as rice and wheat pollen grains lose viability in

1. 30 minutes
2. 20 minutes
3. 15 minutes
4. 10 minutes

In which of the members the viability has been maintained for months.

1. Rosaceae
2. Leguminoseae
3. Solanaceae
4. Somanaceae

It is possible to store pollen grains of a large number of species for years in which chemical

1. Nitrogen
2. Sodium
3. Potassium
4. Alkaline

Which of the statement is true about stored pollen

1. Stored pollen can be used as pollen banks
2. It is similar to seed banks
3. It is used in crop breeding programmes
4. It is possible to store pollen grains of a large number of species for years at -196c

The pistil has three parts which are

1. The stigma
2. Style
3. Ovary
4. Nucleus

Which serves as a landing platform for pollen grains

1. The stigma
2. Carpellary
3. Apocarpous
4. syncarpous

Which part is beneath the style with elongated slender

1. Stigma
2. Ovary
3. Locule
4. placenta

the basal bulged part of the pistil is the

1. Ovary
2. Stigma
3. Nucleus
4. Placenta

Which part is inside the ovary

1. The ovarian cavity(locule)
2. Stigma
3. Apocarpus
4. Syncarpus

Which part is located inside the ovarian cavity

1. The placenta
2. Ovary

3. Stigma
4. Style

Arising from the placenta is called megasporangia which is commonly called

1. Ovules
2. Ovary
3. Stigma
4. Style

The number of ovules in an ovary is one in which crop

1. Wheat
2. Paddy
3. Mango
4. Watermelon

The number of ovules in an ovary may be many in which crop

1. Papaya
2. Watermelon
3. Orchids
4. mango

Which statement is true about ovule

1. The ovule is a small structure attached to the placenta by means of a stalk called funicle
2. The body of the ovule fuses with funiclee in the region called hilum. Thus hilum represents the junction between ovule an funicle
3. Each ovule has one or two protective envelopes called integuments
4. Integuments encircle the nucellus except at the tip where a small openin called the micropyl is organised. Opposite the micropylar end is the chalaza representing the basal part of the ovule.

Within the integuments enclosed a mass of cells called the

1. Nucellus
2. Chalza
3. Hilum
4. micropyl

An ovule generally has a single embryo sac formed from a

1. Megaspore
2. Nucellus
3. Integuments
4. Embryo sac

The process of formation of megaspores from the megaspore mother cell is called

1. Megasporogenesis

2. Embryo sac
3. Chalaza
4. Nucellus

Ovules generally differentiate a single megaspore mother cell(mmc) in the micropylar region of the

1. Nucellus
2. Chalaza
3. Embryo sac
4. megasporogenessis

Which undergoes meiotic division

1. MMC
2. Nucellus
3. Chalaza
4. Embryo sac

which are large cells containing dense cytoplasm and prominent nucleus.

1. Ovules
2. MMC
3. Embryo sac
4. Nucleus

Meiosis results in the production of four

1. Megaspores
2. Cytoplasm
3. Nucellus
4. Ovules

Which of the following is true regards to female gametophyte

1. In a majority of flowering plants one of the megaspores is functional while the other three degenerate
2. Only functional megaspores develops into the female gametophyte(embryo sac)
3. This method of embryo sac formation from a single megaspore is termed monosporic development.
4. Female gametophyte is minute and typically eight nucleated with a single operational gamete.

The nucleus of the functional megaspore divide mitotically to form two nuclei which move to the opposite poles forming the

1. 2-nucleate embryo sac
2. Female gametophyte
3. Embryo sac
4. Megaspores

Two more sequential mitotic nuclear division result in the formation which stages of the embryo sac

1. 4-nucleate
2. 8-nucleate
3. 2-nucleate
4. 10 nucleate

Which of the following is true about antipodal cells

1. Antipodal cells the three haploid cells in the mature embryo sac of flowering plants that are situated at the opposite end to the micropyle
2. The antipodal cells have no established functions and it has been proposed that in many plants including arabidopsis.
3. The antipodal cells undergo programmed cell death during embryo sac maturation an prior to fertilization.
4. The antipodal cells in arabidopsis persist beyond fertilization even when the other cell types are no longer present.

Which of the following is true about pollination

1. Pollination is the mechanism to achieve this objective
2. Transfer of pollen grain(shed from the anther) to the stigma of a pistil is termed pollination
3. Flowering plants have evolved an amazing array of adaptation to achieve pollination
4. They use external agents to achieve pollination

Which of the following is true about pollination

1. Depending on the source of pollen pollination can be divided into three types
2. Autogamy is a type of pollination which is achieved within the same flower
3. geitonogamy is a type of pollination which is a transfer of pollen grains from the anther to the stigma of another flower of the same plant.
4. Xenogamy is the transfer of pollen grains from anther to the stigma of a different plant this is the only type of pollinations which during pollination brings genetically different types of pollen grains to the stigma.

Which of the statement is true regards to autogamy

1. Pollination is achieved within the same flower
2. Transfer of pollen grains from the anther to the stigma of the same flower
3. In a normal flower which open and exposes the anthers and the stigma complete autogamy is rather rare
4. Autogamy in such flowers requires synchrony in pollen release and stigma receptively and also the anthers and the stigma should lie close to each other so that self pollination can occur

Which of the statement is true regards to autogamy

1. Some plants such as viola(common pansy), oxalis and commelina produce two types of flowers-
2. Chasmogamous flowers which are similar to flowers of other species with exposed anthers and stigma and cleistogamous flowers which do not open at all
3. In cleistogamous flowers the anthers an stigma lie close to each other
4. When anthers dehisce in the flower buds, pollen grains come in contact with the stigma to effect pollination.

Which of the statement is true regards to autogamy

1. Cleistogamous flowers are invariably autogamous.
2. There is no chance of cross pollen landing on the stigma
3. Cleistogamous flowers produce assured seed -set even in the absence of pollinators
4. In cleistogamous flowers the anthers an stigma lie close to each other.

Which of the statement is true regards to xenogamy

1. Transfer of pollen grains from the anther to the stigma of another flower of the same plant.
2. Geitonogamy is functionally cross pollination involving a pollinating agent
3. It is similar to autogamy since the pollen grains come from the same plant.
4. Geitonogamy is a kind of self pollination that is functionally similar to cross pollination. Geitonogamy is a term used to describe monoecious plants that have both male and female flowers on the same plants.

Which of the statement is true regards to agents of pollination

1. Plants use the two abiotic(wind and water) and one biotic(animals) agents to achieve pollination
2. Majority of plants use biotic agents for pollination
3. Only a small proportion of plants use abiotic agents
4. Pollen grains coming in contact with the stigma is a chance factor in both wind and water pollination

Which of the statement is true regards to embryo

1. It develops at the micropylar end of the embryo sac where the zygote is situated.
2. Most zygote divide only after certain amount of endosperm is formed
3. This is an adaptation to provide assured nutrition to the developing embryo
4. Though the seeds differ greatly, the early stages of embryo development(embryogeny) are similar in both monocotyledons and dicotyledons.

Which of this statement is true regards to dicotyledonous embryo.

1. Typical dicotyledonous embryo consists of an embryonal axis and two cotyledons
2. The portion of embryonal axis above the level of cotyledons is the epicotyl, which terminates with the plumule or stemtip

3. The cylindrical portion below the level of cotyledons is hypocotyl that terminates at its lower end in the radicle or root tip.
4. The root tip is covered with a root cap.

Which of the statement is true regards to embryo of monocotyledons

1. Which possess only one cotyledon. Epicotyl has a shoot apex and a few leaf primordia enclosed in a hollow foliar structure the coleoptile.
2. In the grass family the cotyledons is called scutellum that is situated towards on side of the embryonal axis
3. At its lower end the embryonal axis has the radical and root cap enclosed in an undifferentiated sheath called coleorrhiza
4. The portion of the embryonal axis above the level of attachment of scutellum is the epicotyl.

Which of the statement is true about seed.

1. In angiosperm the seed is the final product of sexual reproduction.
2. It is often described as a fertilized ovule
3. Seeds formed inside fruits
4. A seed is typically consist of seed coat(s), cotyledons and an embryo axis

Which of the statement is true about seed

1. The cotyledons of the embryo are simple structures generally thick and swollen due \to storage of food reserves(as in legumes)
2. Mature seeds may be non albuminous or ex-albuminous
3. Non- Albuminous seeds have no residual endosperm as it is completely consumed during embryo development(eg pea, groundnut)
4. Albuminous seeds retain a part of endosperm as it is not completely used up during embryo development(eg wheat, maize, barley, castor)

Which of the statement is true regards to perisperm

1. It is a food storing seed tissue which iss developed from the nucellus
2. Perisperm is a layer of nutritive tissue that surrounds the embryo of a seed
3. An ovule consist of three parts. The integument that forms the outer layer. The nucellus and the female gametophyte in its center
4. Perisperm appears to be reddish and has a paper like composition it is found in some seeds like that of beet and black pepper, coffee etc,.

Which of the statement is true regards to perisperm

1. Perisperm is the remains of the nucellus in seeds and is a diploid tissue. The nucellus develops into the perisperm after the process of fertilization.
2. The nucellus is the inner structure of the of the ovule that may develop into the perisperm that feeds the embryo.

3. It provides nutrition to the developing embryo and is formed at the micropylar end of the ovule. Perisperm is found only in certain families and plants like caryophyllaceae, amaranthaceae, portulacaceae, zingiberaceae. Etc.
4. This perisperm remain persistent after the egg fertilization, surrounding the sac on the outer side of the embryo of a seed of some flowering plants.

Which of the following statement is true regards to seeds

1. Integuments of ovules harden as tough protective seed coats. The micropyl remains as a small pore in the seed coat
2. The micropyle facilitates entry of oxygen and water into the seed during germination
3. As the seed matures its water content is reduced and seeds become relatively dry(10-15 percent moisture by mass)
4. The general metabolic activity of the embryo slows down. The embryo may enter a state of inactivity called dormancy or if favourable conditions(adequate moisture, oxygen and suitable temperature) are available they germinate

Which of the following statement is true regards to seeds

1. Ovule mature into seeds the ovary develops into a fruit ie the transformation of ovules into seeds and ovary into fruit proceeds simultaneously.
2. The wall of the ovary develops into the wall of fruit called pericarp
3. The fruit may be fleshly as in guava, orange, mango etc or may be dry as in groundnut and mustard etc.
4. Many fruits have evolved mechanisms for dispersal of seeds.

Which of the statement is true regards to number of ovules in an ovary and the number of seeds present in a fruit.

1. Ovules after fertilization mature into the seed and the ovary develops into a fruit
2. If all ovules present in an ovary are fertilized. The number of seeds present in the fruit will be equal to the number of ovules present in the ovary
3. The ovules fates turn out to seed when the ovary get ripened
4. There exists an intense relationship between the ovule in an ovary and the number of seeds present in the fruit.

Which of the statement is true regards to fruits

1. In most plants by the time the fruit develops from the ovary other floral parts degenerate and fall off
2. In a few species such as apple, strawberry, cashew etc. the thalamus also contributes to fruit formation such fruits are called false fruits
3. Most fruits however develop only from the ovary and are called true fruits.

4. Although in most of the species fruits are the results of fertilization there are few species in which fruits develop without fertilization. Such fruits are called parthenocarpic fruits. Banana is one such example.

Which of the study is true about parthenocarpy!

1. Parthenocarpy is the production of fruits without the fertilization of ovules.
2. Fruits like bananas and figs are developed without fertilization and do not produce any viable seeds.
3. The condition in which fruits are developed without the formation of seeds iss called parthenocarpy.
4. Parthenocarpy is introduced along with other plant hormones including gibberellic acid.

Which of the statements is true regards with seeds advantage to angiosperm.

1. Initially reproductive processes such as pollination and fertilization are independent of water seed formation and are more dependable.
2. Seeds have better adaptive strategies for dispersal to new habitats and help the species to colonize in other areas.
3. They have sufficient food reserves; young seeding are nourished until they are capable of photosynthesis on their own.
4. The hard seed coat provides protection to the young embryo being products of sexual reproduction; they generate new genetic combinations leading to variations.

Which of the statement is true regards to seeds

1. Seed is the basis of our agriculture. Phoenix dactylifera discovered during the archeological excavation at king herod's palace near the dead sea.
2. Dehydration and dormancy of mature seeds are crucial for storage of seeds which can be used as food throughout the year and also to raise crop in the next season
3. Seeds of a large number of species live for several years. Some seeds can remain alive for hundred of years
4. The oldest is that of lupine. Lupinus arcticus excavated from arctic tundra. The seed germinated and flowered after an estimated record of 10000 years of dormancy. The recent record of 2000 years old viable seed iss of the date palm.

Number of eggs present in the embryo sac is

1. One in each
2. Two in each
3. Four in each
4. Six in each

How many embryo sacs are present in an ovule

1. Each ovule consists of one embryo sac
2. Each ovule has two embryo sac
3. Each ovule has four embryo sac
4. Each ovule has six embryo sac

Which of the statement is true regards to number of ovary present in the typical flower

1. There are four whorls present in a flower one of them is the carpel which represents the female reproductive part of the flower
2. The ovary stigma and style are all parts of the carpel they are part of the female reproductive part of the flower
3. Ovary is the reproductive component that includes quite a lot of ovules
4. The number of ovaries varies from one flower to another it basically depends upon the number of carpels. In monocarpellary flower we have one carpel and one ovary other way bicarpellary flower there are 2 carpels and two ovaries.

How many flowers are present on a tree

1. Flower number is directly proportional to the soil quality, availability of nutrients and the species of the plant
2. Flower number cannot be predicted as such it all depends on the above mentioned parameters.
3. Species of plant is a major element which decides the number of flowers in a plant
4. Some trees are considered flowering trees because they produce inconspicuous flowers that may not be as visually striking as those of other species.

Which of the statement is true regards to apomixis

1. Apomixis refers to the formation of the plant from a seed without fertilization or notmal sexual reproduction
2. It is a reference to asexual process. The plant produced is a clone of the female parent plant
3. Apomixis is very common in higher plants. Plants of more than 35 families are known to be apomictic e.g gramineae, rosaceae, compositae and rutaceae.
4. During sexual reproduction the developmental steps occurring inside the ovule produce the female gametophyte(embryo sac) and following double fertilization event give rise to embryo and endosperm structures.

Which of the statement is true regards to formation of fruit without fertilisation.

1. The formation of fruit from an unfertilised egg is known as parthenocarpy. Either naturally or artificially can be done to obtain it
2. There are two forms of parthenocarpy
3. Pollination is necessary for the stimulative parthenocarpy process to develop fruit. Seedless watermelon is an example of a stimulative parthenocarpy.

4. Pollination is not necessary for the production of fruits through the vegetative parthenocarpy seedless cucumber is an example of vegetative parthenocarpy.

Which of the statement is true regards to polyembryony

1. When two or more than two embryos develop from a single fertilized egg then this phenomenon is know as polyembryony
2. In case of humans it results in forming two identical twins. This phenomenon is found both in plants and animals
3. The best example of polyembryony in the animal kingdom is the nine banded armadillo
4. It is a medium sized mammal found in certain parts of america and this wild species gives birth to identical quadruplets.