Biology Sample Paper - 1

DIRECTIONS for the question: *Mark the best option:*

Question No. : 1

A life cycle of an individual is differentiated into different phases. For example, in animals, juvenile phase is followed by :

A) reproductive phase B) Growth phase phase C) pre-reproductive phase D) vegetative phase.

DIRECTIONS for the question: *Mark the best option:*

Question No. : 2

External fertilization occurs in majority of

A) fungi B) liverworts C) algae D) mosses

DIRECTIONS for the question: *Mark the best option:*

Question No. : 3

An algae that is multicellular and filamentous consists of asexual life cycle during which, the meiotic division occurs after the formation of zygote. It has filament that consists of:

A) Vegetative cells (n) and diploid gametangia (2n) B) Vegetative cells (2n) and haploid gametangia (n)
C) Both diploid vegetative cells and gametangia D) haploid vegetative cells and haploid gametangia

DIRECTIONS for the question: *Mark the best option:*

Question No. : 4

An organism can reproduce by sexual and asexual methods. The type of reproduction adopted by an organism to reproduce depends upon :

A) the habitat and morphological features of an organism B) morphology and anatomy of an organism
C) morphology and physiology of an organism D) the organism's habitat, physiology, and genetic makeup

DIRECTIONS for the question: *Mark the best option:*

Question No. : 5

Formation of a fruit without the process of fertilization is known as :

A) Parthenocarpy B) Apomixis C) Parthenogenesis D) Vegetative propagation

DIRECTIONS for the question: *Mark the best option:*

Question No. : 6

Non-primate mammals like cows and dogs female shows :

A) Menstrual cycle B) External fertilization C) Oestrous D) Both a and b

DIRECTIONS for the question: *Mark the best option:*

Question No. : 7

The process that leads to formation of zygote in angiosperms is :

A) Pre-fertilization B) Syngamy C) Fusion D) Post-fertilization

DIRECTIONS for the question: *Mark the best option:*

Question No. : 8

In oviparous and viviparous animals, whose offsprings are under more threat immediately after birth?

A) Oviparous B) Viviparous C) Both oviparous and viviparous as global warming increasing D) Incomplete information

DIRECTIONS for the question: *Mark the best option:*

Question No. : 9

Find the correct statement that corresponds to the feature that is present in Hydra.

A) formation of asexual gemmules under unfavorable conditions B) formation of unisexual buds
C) It produces multicellular buds D) It is a prokaryotic, multicellular organism

DIRECTIONS for the question: *Mark the best option:*

Question No. : 10

Find the statement that correctly corresponds to the Cucurbita plants ?

A) It is monoecious producing both staminate and pistillate flowers in the same plant.
B) It is monoecious producing staminate and pistillate flowers in two different plants.
C) It is a dioecious plants with staminate and pistillate flowers in the same plant
D) It is a dioecious plant producing staminate and pistillate flowers in two different plants.

DIRECTIONS for the question: *Mark the best option:*

Question No. : 11

The female gametophyte formed after the process of fertilization is also known as :

A) Embryo B) Embryo sac C) Zygote D) Mature seed

DIRECTIONS for the question: *Mark the best option:*

Question No. : 12

The process of pollination in which the pollens from a male flower is transferred to the stigma of another flower on a same plant is known as

A) self fertilization B) geitonogamy C) chasmogamy D) cleistogamy

DIRECTIONS for the question: *Mark the best option:*

Question No. : 13

The process of autogamy pollination can occur in a chasmogamous flower if :

A) pollen matures before maturity of the ovule. B) ovules mature before maturity of pollen.
C) the maturation of pollen and ovule occurs simultaneously. D) both anther and stigma are of equal lengths.

DIRECTIONS for the question: *Mark the best option:*

Question No. : 14

The structures that are visible within embryo sac after triple fusion includes are :

A) Synergid (n) , zygote (2n) and primary endosperm nucleus (3n). B) Synergid (n), antipodal (2n) and polar nuclei (2n).
C) Antipodal (2n), synergid (2n) and primary endosperm nucleus(2n). D) Synergid (2n), polar nuclei (3n) and zygote (2n).

DIRECTIONS for the question: *Mark the best option:*

Question No. : 15

An ovule is attached to the ovary with the help of a structure known as:

A) Fundle B) Funicle C) Peduncle D) Lobe

DIRECTIONS for the question: *Mark the best option:*

Question No. : 16

An endosperm is the nutritional substance substance, formed to be utilized by the developing embryo. The outermost layer of the endosperm in a maize grain is known as :

A) Aleurone layer B) Tunic C) Testa D) Pericarp

DIRECTIONS for the question: *Mark the best option:*

Question No. : 17

In a monocotyledon, a developing root is protected by :

A) Root cap B) Coleoptile C) Radicle D) Coleorhiza

DIRECTIONS for the question: *Mark the best option:*

Question No. : 18

The two conditions, that are essential for the storage of seeds includes :

A) Dehydration and cold temperatures B) Dehydration and Dormancy C) Dehydration and vacuum conditions
D) Dehydration and tight containers

DIRECTIONS for the question: *Mark the best option:*

Question No. : 19

A type of pollination that harbors the following features like :
(a) it ensures genetic recombination.
(b) between different flowers of the different plants.

A) Autogamy B) Geitonogamy C) Xenogamy D) Cleistogamous

DIRECTIONS for the question: *Mark the best option:*

Question No. : 20

A primary spermatocyte and a primary oocyte results in formation of how many mature sperms and ovum respectively?

A) One, One B) 2, 1 C) 4, 1 D) 4, 2

DIRECTIONS for the question: *Mark the best option:*

Question No. : 21

The process that does not involve any cell division includes :

A) gametogenesis B) oogenesis C) embryogenesis D) spermiogenesis

DIRECTIONS for the question: *Mark the best option:*

Question No. : 22

A blastocyst is formed during post-fertilization event. The outermost layer that covered the blastocyst is a :

A) ectoderm in origin B) Epidermis C) mesodermal on origin D) trophoblast

DIRECTIONS for the question: *Mark the best option:*

Question No. : 23

The process of Spermiation refers to the release of sperms from :

A) seminiferous tubules B) rete testis C) epididymis D) genital orifice

DIRECTIONS for the question: *Mark the best option:*

Question No. : 24

Semen consists of sperms and Seminal plasma (a liquid part). The seminal plasma is formed by :

A) seminal vesicle and Cowper's gland. B) Cowper's gland and prostate. C) prostate and seminal vesicle.
D) seminal vesicles, prostate and Cowper's gland.

DIRECTIONS for the question: *Mark the best option:*

Question No. : 25

In the period of nine month pregnancy, the appearance of first movement and appearance of hair on the head of the fetus are observed during :

A) Third month of pregnancy B) Fifth month of pregnancy C) Seventh month of pregnancy
D) Second month of pregnancy

DIRECTIONS for the question: *Mark the best option:*

Question No. : 26

Outermost layer of the uterine wall is known as :

A) Perimetrium B) Endometrium C) Ectoderm D) A and c both

DIRECTIONS for the question: *Mark the best option:*

Question No. : 27

The placenta (connection between mother and the child) is connected to the embryo through ?

A) Fallopian tube B) Umbilical cord C) 2 renal arteries D) 1 vein

DIRECTIONS for the question: *Mark the best option:*

Question No. : 28

Match Column I with Column II.

Column I	Column II
A. Acrosome	1. Associated with the motility of sperm towards the egg.
B. Head	2. Powerhouse of the sperm; contains a number of mitochondria.
C. Tail	3. Site of genetic material.
D. Middle piece	4. Center of enzymes within the sperms

A) A – 4, B – 2, C – 1, D – 3 B) A – 4, B – 2, C – 2, D – 1 C) A – 3, B – 4, C – 1, D – 2 D) A – 4, B – 3, C – 1, D – 2

DIRECTIONS for the question: *Mark the best option:*

Question No. : 29

To prevent fertilization, which among the following is commonly considered as a withdrawal method?

A) Lactational amenorrhoea B) A coitus interruptus C) Periodic abstinence D) Condoms

DIRECTIONS for the question: *Mark the best option:*

Question No. : 30

Emergency contraceptives like pills are effective if used within :

A) 72 hours of sex B) 72 hours after ovulation C) 72 hours after menstruation D) 72 hours of implantation

DIRECTIONS for the question: *Mark the best option:*

Question No. : 31

According to ARTs, the process of transfer of sperm directly into the ovum under laboratory conditions is known as :

A) GIFT B) Artificial insemination C) ICSI D) ET

DIRECTIONS for the question: *Mark the best option:*

Question No. : 32

ZIFT is transfer of

A) zygote into the fallopian tube B) a mixture of sperms and ova into the fallopian tube.
C) 1 sperm into zygote under petri dish D) zygote into the endometrium

DIRECTIONS for the question: *Mark the best option:*

Question No. : 33

The cases of Sexually transmitted diseases are common among the people of age group of :

A) 18-21 years B) 15-24 years C) 22-32 years D) 12-18 years

DIRECTIONS for the question: *Mark the best option:*

Question No. : 34

The contraceptive methods that acts by avoiding the chances of meeting between sperm and ovum are known as :

A) Barrier method B) Condoms C) Copper T D) Both a and b

DIRECTIONS for the question: *Mark the best option:*

Question No. : 35

A fertile period refers to the following days during the menstrual cycle :

A) 14 -15 B) 11- 14 C) 10-17 D) 10-12

DIRECTIONS for the question: *Mark the best option:*

Question No. : 36

Match the items of Column I with those of Column II.

Column 1	Column 11
A. Copper – releasing intrauterine devices	1. The process of sterilization in males.
B. Hormone – releasing intrauterine device	2. A combination of Progesterone- estrogen.
C. Vasectomy	3. Progestasert.
D. Oral contraceptive	4. Multiload 375.

Tick on the correct pair :

A) A – 2, B – 3, C – 2, D – 1 B) A – 4, B – 3, C – 1, D – 2 C) A – 1, B – 3, C – 4, D – 2 D) A – 2, B – 3, C – 1, D – 4

DIRECTIONS for the question: *Mark the best option:*

Question No. : 37

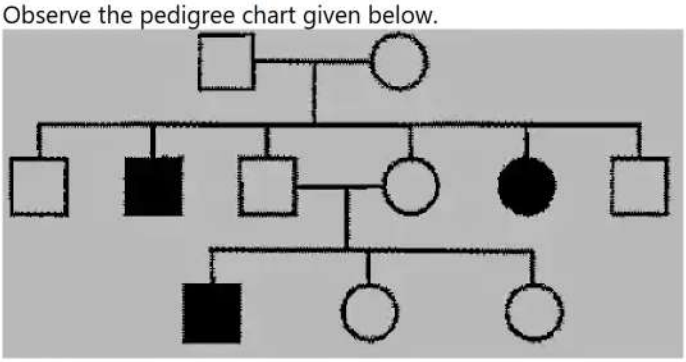
In a dihybrid cross, AABb x aaBb, the genotypes obtained include, AaBB : AaBb : Aabb. The ratio of the following offspring would be:-

A) 3:2:1 B) 1:2:1 C) 1:2:2 D) 2:1:2

DIRECTIONS for the question: *Mark the best option:*

Question No. : 38

Observe the pedigree chart given below.



Find the correct statement.

A) It is a sex-linked recessive trait. B) It is an autosomal recessive trait. C) It is an autosomal dominant trait.
D) It is a sex-linked dominant trait.

DIRECTIONS for the question: *Mark the best option:*

Question No. : 39

The phenomenon of single gene expressing more than one character is known as :

A) Codominance B) mosaicism C) pleiotropy D) polygenic

DIRECTIONS for the question: *Mark the best option:*

Question No. : 40

In a dihybrid cross, the phenotypic ration obtain is- 9:3:3:1. The representation refers to :

A) It is a case of polygenic inheritance. B) It is a multigenic inheritance. C) It is a case of codominance.
D) The alleles of the two genes are segregating independently.

DIRECTIONS for the question: *Mark the best option:*

Question No. : 41

If a woman suffering from hemophilia marries a normal man (without haemophilia),

A) 75% female will be normal while 25% male will be diseased B) all their sons will be haemophilic.
C) all their daughters will be haemophilic. D) 75% male will be normal while 25% female will be diseased

DIRECTIONS for the question: *Mark the best option:*

Question No. : 42

The three siblings within a family have blood groups O, AB and A. The genotype of the parents must be ____ and ___ .

A) I^Ai, I^Bi B) I^Ai, I^Ai C) $I^{AB}i$, I^Bi D) ii, I^Bi

DIRECTIONS for the question: *Mark the best option:*

Question No. : 43

The scientist who observed the first X-chromosome in a few insects was :

A) Darwin B) Morgan C) Mendel D) Henking

DIRECTIONS for the question: *Mark the best option:*

Question No. : 44

The diseases like Cystic fibrosis and hemophilia are examples of disorders.

A) Non -Mendelian disorders B) Mendalian disorders C) Sex- linked abnormality D) None of the above

DIRECTIONS for the question: *Mark the best option:*

Question No. : 45

Match the sex-chromosome complements in Column I with the male/female organisms in Column II.

Column I	Column II
A. XO	1. Human male
B. XX	2. Male bird
C. XY	3. Male grasshopper
D. ZZ	4. Female Drosophila
	5, Female bird

Tick the correct option.

A) A – 3, B – 4, C – 1, D – 5 B) A – 1, B – 4, C – 3, D – 5 C) A – 5, B – 4, C – 1, D – 2 D) A – 3, B – 1, C – 4, D – 5

DIRECTIONS for the question: *Mark the best option:*

Question No. : 46

In prokaryotic organisms, the Operon model for regulation of the process of transcription was proposed by :

A) Griffith B) Jacob and Monod C) Watson and Crick D) Martha and Chase

DIRECTIONS for the question: *Mark the best option:*

Question No. : 47

In the lac operon of E.coli, a gene 'i' codes for :

A) inducer B) repressor C) initiator D) lactase enzyme

DIRECTIONS for the question: *Mark the best option:*

Question No. : 48

The DNA double helix structure consists of Purines and Pyrimidines that bond with each other through hydrogen bonding. The fixed bonding between them is responsible for the :

A) the antiparallel nature of DNA double strands B) the semiconservative nature of DNA
C) uniform width throughout DNA D) uniform length in all DNA

DIRECTIONS for the question: *Mark the best option:*

Question No. : 49

During DNA replication, the synthesis of one strand is discontinuous because :

A) DNA molecule being synthesized is very long and only one strand needs to be synthesized continuously.
B) DNA dependent DNA polymerase catalyses polymerisation only in one direction (5′ → 3′).
C) it is a more efficient process.
D) RNA dependent DNA polymerase catalyzes polymerisation only in one direction (5′ → 3′).

DIRECTIONS for the question: *Mark the best option:*

Question No. : 50

The net electric charge on a DNA molecule and a histone protein are :

A) positive, negative respectively B) negative, positive respectively C) negative, negative respectively
D) positive, positive respectively

QNo:- 1 ,Correct Answer:- *A*

Explanation:-

QNo:- 2 ,Correct Answer:- *C*

Explanation:-

QNo:- 3 ,Correct Answer:- *D*

Explanation:-

QNo:- 4 ,Correct Answer:- *D*

Explanation:-

QNo:- 5 ,Correct Answer:- *C*

Explanation:-

QNo:- 6 ,Correct Answer:- *C*

Explanation:-

QNo:- 7 ,Correct Answer:- *C*

Explanation:-

QNo:- 8 ,Correct Answer:- *A*

Explanation:-

QNo:- 9 ,Correct Answer:- *C*

Explanation:-

QNo:- 10 ,Correct Answer:- *A*

Explanation:-

QNo:- 11 ,Correct Answer:- *B*

Explanation:-

QNo:- 12 ,Correct Answer:- *B*

Explanation:-

QNo:- 13 ,Correct Answer:- *C*

Explanation:-

QNo:- 14 ,Correct Answer:- *A*

Explanation:-

QNo:- 15 ,Correct Answer:- *B*

Explanation:-

QNo:- 16 ,Correct Answer:- *A*

Explanation:-

QNo:- 17 ,Correct Answer:- *D*

Explanation:-

QNo:- 18 ,Correct Answer:- *B*

Explanation:-

QNo:- 19 ,Correct Answer:- *C*

Explanation:-

QNo:- 20 ,Correct Answer:- *C*

Explanation:-

QNo:- 21 ,Correct Answer:- *D*

Explanation:-

QNo:- 22 ,Correct Answer:- *D*

Explanation:-

QNo:- 23 ,Correct Answer:- *A*

Explanation:-

QNo:- 24 ,Correct Answer:- *D*

Explanation:-

QNo:- 25 ,Correct Answer:- *B*

Explanation:-

QNo:- 26 ,Correct Answer:- *A*

Explanation:-

QNo:- 27 ,Correct Answer:- *B*

Explanation:-

QNo:- 28 ,Correct Answer:- *D*

Explanation:-

QNo:- 29 ,Correct Answer:- *B*

Explanation:-

QNo:- 30 ,Correct Answer:- *A*

Explanation:-

QNo:- 31 ,Correct Answer:- *C*

Explanation:-

QNo:- 32 ,Correct Answer:- *A*

Explanation:-

QNo:- 33 ,Correct Answer:- *B*

Explanation:-

QNo:- 34 ,Correct Answer:- *D*

Explanation:-

QNo:- 35 ,Correct Answer:- *C*

Explanation:-

QNo:- 36 ,Correct Answer:- *B*

Explanation:-

QNo:- 37 ,Correct Answer:- *B*

Explanation:-

QNo:- 38 ,Correct Answer:- *B*

Explanation:-

QNo:- 39 ,Correct Answer:- *C*

Explanation:-

QNo:- 40 ,Correct Answer:- *D*

Explanation:-

QNo:- 41 ,Correct Answer:- *B*

Explanation:-

QNo:- 42 ,Correct Answer:- *A*

Explanation:-

QNo:- 43 ,Correct Answer:- *D*

Explanation:-

QNo:- 44 ,Correct Answer:- *B*

Explanation:-

QNo:- 45 ,Correct Answer:- *A*

Explanation:-

QNo:- 46 ,Correct Answer:- *B*

Explanation:-

QNo:- 47 ,Correct Answer:- *B*

Explanation:-

QNo:- 48 ,Correct Answer:- *B*

Explanation:-

QNo:- 49 ,Correct Answer:- *B*

Explanation:-

QNo:- 50 ,Correct Answer:- *B*

Explanation:-