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Roll No. | | | | | | | | | | |

S. No. of Question Paper : **5838**

Unique Paper Code : **6792013503**

Name of the Paper : **Growth and Reproduction**

Name of the Course : **B.Sc. Hons. Biological Science (NEP)**

Semester : **V**

Duration : **2 Hours** Maximum Marks : **60**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt *four* questions in all.

All questions carry equal marks.

Q. No. **1** is compulsory.

1. (*a*) Define the following terms : 5×1=5

(*i*) Primitive streak

(*ii*) Somatopluere

(*iii*) Connective

(*iv*) Phellogen

(*v*) Xenogamy.

(*b*) Fill in the blanks with suitable words : 10×1=10

(*i*) ..... are basic nuclear proteins that replace histones during the final stages of sperm development.

P.T.O.

(*ii*) In humans, Hensen's node is essential for establishing the ..... during early embryogenesis.

(*iii*) Harmful compounds formed by non-enzymatic reactions between sugars and proteins that accumulate during aging are called .....

(*iv*) The outer cell layer of the blastocyst that contributes to placenta formation is the ..... .

(*v*) Poricidal anther dehiscence can be seen in family ..... .

(*vi*) ..... is an example of a nuclear endosperm.

(*vii*) Seed dispersal by water is known as ..... .

(*viii*) The entry of the pollen tube in the ovule through the integuments is known as ..... .

(*ix*) ..... is the natural process by which plants shed various parts, such as leaves, fruits, flowers, or seeds.

(*x*) In ..... embryo sac, all the four megaspore nuclei take part in the development of the female gametophyte.

2. (*a*) Distinguish between the following (any *three*) : 3×2=6

(*i*) Bilaminar and trilaminar disc

(*ii*) Spermatogenesis and Oogenesis

(*iii*) Free Radical theory and Mutation accumulation theory

(*iv*) Radial Cleavage and Discoidal Cleavage.

(*b*) Write short notes on any *two* of the following : 2×4.5=9

(*i*) Teratogens

(*ii*) Infertility

(*iii*) Capacitation.

3. (*a*) Draw well labelled diagrams of the following (any *two*) : 2×2.5=5

(*i*) L. S. Anatropous Ovule

(*ii*) Polygonum type of Embryo sac

(*iii*) T.S. young anther showing microspore mother cell.

(*b*) Describe the ABC model of floral organ identity with the help of suitable diagram. 5

(*c*) Discuss the various stages involved in Anther dehiscence with the help of well labelled diagrams. 5

4. (*a*) Explain how placentas are classified, describe the essential functions of the placenta during pregnancy and enumerate the hormones synthesized by the placenta. 8

(*b*) Describe the different modes of implantation across species and discuss in detail the process of blastocyst implantation in humans. 7

5. (*a*) With the help of well labelled diagrams, compare and contrast the apical and lateral meristems, detailing their location, function, and the types of growth they enable. 8

(*b*) Trace the sequence of developmental stages in dicot embryogenesis, from the zygote to the mature embryo. Support your answer with labelled diagrams. 7

6. Differentiate any *five* : 5×3=15

(*a*) Amoeboid and Secretory tapetum

(*b*) Crassinucellate and Tenuinucellate Ovules

(*c*) Self and Cross Pollination

(*d*) Capacitation and Acrosome reaction

(*e*) Discoblastic cleavage and Superficial cleavage

(*f*) Estrus and Menstrual cycle.