23. What is meant by zygotic meiosis ? Give one example.

24. Expalin C vlaue and C value paradox.

25. Draw a neat diagram of Golgi apparatus and label the structural components.

26. Write about the Ribosomal subunits in prokaryotes and eukaryotes. **(6×2=12)**

SECTION – E

Answer **any one**. (Essay type questions. **Each** question carries a weightage of **4**)

27. Explain the various stages through which a plant cell passes before it gives rise to four haploid daughter cells. Name the process.

28. Give a detailed account of chromosome structural aberrations giving explanatory diagrams.

29. Withe the help of labeled diagrams explain the structure of interphase nucleus. Add a note on the components of nucleolus. **(1×4=4)**

M 7282

Reg. No. : .....

Name : .....

V Semester B.Sc. Degree (CCSS – Reg./Supple./Imp.) Examination, November 2014
(2012 Admission)
CORE COURSE IN BOTANY/PLANT SCIENCE
5B09 BOT/PLS : Cell Biology

Time : 3 Hours Total Weightage : 30

Instruction : ***Draw*** *diagrams* ***wherever*** *necessary.*

SECTION – A

Answer **all**.(Questions in bunches of **four**. **Each** bunch carries a weightage of **1**)

1. Choose the correct answer.
   i) In flowering plants, meiosis occurs at the time of
      a) Fertilization b) Seed germination
      c) Pollen grain formation d) Pollination
   ii) A patient with Klinefelter's syndrome will have
      a) 45 chromosomes b) 46 chromosomes
      c) 44 chromosomes d) 47 chromosomes
   iii) When cell organelles are filtered away from cytoplasm, the remaining part is called
      a) Protoplasm b) Hyaloplasm
      c) Ergastoplasm d) Nucleoplasm
   iv) Spot out the pair that contains DNA.
      a) Ribosomes and nucleus
      b) Nucleus and nucleolus
      c) Chloroplasts and ribosomes
      d) Mitochondria and nucleus

2. State **true** or **false** :

   I) The term progenote refers to an ancestral organism.

   ii) Oxysomes are microbodies found in the cells of eukaryotes.

   iii) Triticale is a synthetic cereal produced through allopolyploidy.

   iv) Ribosomes are always attached to the endoplasmic reticulum.

3. Fill in the blanks :

   i) Cell sap is a concentrated solution of substances packed inside the_____

   ii) _____ ploidy result from the multiplication of the same basic set of chromosomes.

   iii) _____ is the best material for observing meiotic divisions in plants.

   iv) The fine cytoplasmic threads traversing the walls of adjacent cells are called _____

4. Answer in **one** word or **one** sentence :

   i) Define chromocenter.

   ii) What is a dictyosome ?

   iii) Name the cell wall material in fungi.

   iv) Which is the best material for studying mitosis ?

5. Select from column **B** and **C** to match Column **A**.

A	B	C
i) Klinefelter's syndrome	2n = 44A + X	Autosomal trisomy
ii) Turner's syndrome	2n = 44A + XY	Allosomal monosomy
iii) Down's syndrome	2n = 44A + XXY	Autosomal deletion
iv) Cri du chat syndrome	2n = 45A + XX	Allosomal trisomy

(5×1=5)

SECTION – B

Distinguish between **any four** of the following. (**Each** question carries a weightage of **1**)

6. Primary constriction and Secondary constriction.
7. Hyperploidy and hypoploidy.
8. Primary lysosomes and secondary lysosomes.
9. Pericentric and Paracentric inversion.
10. Rough endoplasmic reticulum and smooth endoplasmic reticulum.
11. DNA in prokaryotes and eukaryotes. **(4×1=4)**

SECTION – C

Answer **any five**. (Short answer questions. **Each** question carries a weightage of **1**)

12. Define deletion. What is an interstitial deletion ?
13. Why do you call mitosis an equational division ?
14. Where do you find cristae ? What is its function ?
15. If the haploid no. of chromosomes in a particular crop plant is 6, what will be the no. of chromosomes in a monosomic, trisomic and nullisomic formed from this ?
16. What is a SAT chromosome ?
17. What are glyoxisomes ? What is their role ?
18. What do you understand by the term polyadenylation ? Mention its significance. **(5×1=5)**

SECTION – D

Answer **any six**. (Short answer questions. **Each** question carries a weightage of **2**)

19. Give an account of the association of DNA with proteins in eukaryotes.
20. Write an account on microtubules, mentioning their role.
21. Explain the events of mitotic prophase.
22. Write a note on Turner's syndrome.