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(ii) What are the targets of Cdk1/Cyclin B complex. (6)

(iii) Describe the salient features of stem cells. (6)

(200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 4065

H

Unique Paper Code : 2532012401

Name of the Paper : Advances in Cell Biology

Name of the Course : Microbiology

Semester : IV Part II

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any 5 questions in all.
3. All questions carry equal marks.

1. (i) What are proto-oncogenes? (2)

(ii) Briefly describe, how proto-oncogenes are converted to oncogenes? (6)

P.T.O.

- (iii) What are Receptor Protein Tyrosine Kinases in cell signalling? (4)
- (iv) Briefly write about the role of caspases. (6)
2. Define the following terms : (6×3=18)
- (i) Signal transduction
- (ii) Necrosis
- (iii) Mitosis
- (iv) Angiogenesis
- (v) Pluripotency
- (vi) Synaptonemal complex
- (vii) Contact inhibition
3. (i) Describe in detail about the MAP Kinase pathway. (6)
- (ii) Compare between the modern and traditional approaches to cancer diagnosis. (6)

- (iii) Discuss the extrinsic and intrinsic pathways of apoptosis. (6)
4. (i) Discuss the contributions of following scientists (any 5) :
- Brian Druker, Peyton Rous, K.Takahashi. Tim Hunt, Bert Vogelstein, Gail Martin. (5×3=15)
- (ii) Differentiate between autocrine and paracrine signalling mechanisms. (3)
5. (i) Describe the salient features of cancer cells. (8)
- (ii) What is the role of ATM and ATR checkpoint kinases in eukaryotic cell cycle? (8)
- (iii) What is the role of MPF in eukaryotic cell cycle? (2)
6. (i) Expand the terms : VEGF, APC, CRE, TNF, PDGF, CKI. (6)