TOOLS & TECHNIQUE IN CYTOLOGY EXERCISE - II

1. The part of cell that can be seen with an electron microscope, but can't with a light microscope is/are the
(1) nucleus
(2) Golgi bodies
(3) chloroplasts
(4) membrane separating the nucleus from the cytoplasm

2. The organic compound present in traces in living cells can be detected and isolated by
(1) centrifugation (2)tracer technique
(3) chromatography (4) microscopy

3. Which technique used for separation of immuno globulins, cellular enzymes and m-RNA :
(1) Ion exchange chromatography
(2) Affinity chromatography
(3) Paper chromatography
(4) None of these

4. 1 A0 is equal to
(1) 10^{-8} cm (2) 10^{-4} cm
(3) 10^{-6} cm (4) 10^{-3} cm

5. Electron microscope was invented by
(1) Knoll and Ruska
(2) Rudolph and Killiker
(3) C. P. Swanson
(4) None of above

6. Phase contrast microscope is
(1) base on the scattering of light and using a dark field condenser
(2) used for the study of living cells
(3) related to retardation and thickness of object
(4) the best method for studying non-living ultra structure

7. The smallest size of a cell which can be seen with unaided eye is
(1) 1 micron (2) 10 micron
(3) 100 micron (4) 1000 micron

8. A fluorescent microscope is used
(1) for increasing revolving power
(2) for obtaining X-ray diffraction pattern of DNA
(3) to study cell and their components in a living state
(4) To localise cell structure stained with flurochrome dyes

9. Fuelgen reaction of DNA is due to
(1) aldehyde produced by acid hydrolysis
(2) removal of RNA but not DNA
(3)phosphoric acid carbohydrate and trogen bases
(4) phosporic acid

10. The resolving power of an electron icroscope is
(1) 0. 0000005 nm (2) 0. 0000005 μm
(3) 2 μm (4) 0. 025 Å

11. Which cell organelle is detected with the help of sudan black :
(1) Peroxisome (2) Glyoxysome
(3) Sphaerosome (4) Rough E. R.

12. Magnification power of a light compound microscope depends on :
(1) Power of eye piece lens
(2) Power of objective lens
(3) Source of light
(4)(1) and(2) both

13. Feulgen reaction is used to stain :
(1) DNA
(2) RNA - polymerase
(3) DNA - polymerase
(4)(1) and(3) both

14. Microsomes are obtained by :
(1) Vital staining
(2) Sonography
(3) Fractionation of cell by ultrasonic sound waves
(4) X-ray crytallography

15. Which dye is used to stain chromosomes
(1) Acetocarmine (2) Haematoxylin
(3) Feulgen (4) All the above

16. Toluddene blue specifically stains :
(1) DNA (2) RNA (3) Chitin (4) Lignin

17. Which stain is used for electron microscopy :
(1) PS
(2) Aurantia
(3) Para rosailin (4)Osmium tetraoxide

18. Which stain is commonly used is study of cell division
(1) Feulgen reaction (2) Acetocarmine
(3) Eosine (4) Sffranine

19. Which one is a vital stain :
(1) Jajus green (2) methylene blue
(3) Neutral red (4) All the above

20. Which of the following are nuclear stains :
(1) Aceto Carmine (2) Haematoxylene
(3) Saffranine (4)(1) and(2) both

21. Cell organelles can be separated by method of :
(1) Autoradiography
(2) Microtomy
(3) Differential centrifugatioin
(4) X-ray differaction

22. Strucure of RNA can be studied by :
(1) Feulgen
(2) Toludence blue
(3) X-ray crystallography
(4) Chromatography

23. Chlor - zinc iodide (schultz solution) stains :
(1) Cellulsoe (2) Protein
(3) Chitin (4) Lipid

24. Light compound microscope with 15 x eye piece lense and 45 x objective lense will have a magnification of -
(1) 2000 (2) 675 (3) 1000 (4) 500

25. Calvin isolated the different chemical of calvin cycle by :
(1) Autoradiography
(2) Chromatography
(3) Cell fractionation
(4) x-ray diffraction

26. In feulgen techique, schiff reagent reacts with -
(1) Phosphate group
(2) CHO group of dexyribose
(3) Nitrogen bases
(4) Only purine nitrogen base

27. In electron microscope source of light is :
(1) White light (2) U. V. ray
(3) Electron beam (4) Green light

28. Ultra sonic sound waves are used in which technique of cytology :
(1) X-ray diffraction
(2) Chromatography
(3) Cell fractionation
(4) Autoradiography

29. In light compound microscope the power of oil immersion lens is :
(1) 10 X (2) 20 X (3) 45 X (4) 100 X

30. The best microscope to study ultra structure of cell is :
(1) Phase contrast microscope
(2) Electron microscope (EM)
(3) Scanning electron microscope (SEM)
(4) Fluorescent microscope

31. Which microscope is used to study the dynamic aspects of a cell :
(1) Electron microscope
(2) Scanning microscope
(3) Light compound microscope
(4) Phase contrast microscope

32. To study the living cells without staining which of the following microscopes can be used ? **[PB PMT 2002]**
(1) SEM (2)Fluorescent
(3) Phase contrast (4) TEM

33. Molecular biology is the study of
(1) Structure function and cell reproduction
(2)physio biochemical studies of biomolecules
(3) studying tissues under microscope
(4) metabolid activity of life

34. The subcellular components can be separated by
(1) paper chromatography
(2) autoradiography
(3) gell electrophoresis
(4)differential and density gradient centrifugation

35. The chromosome separation during metaphase can be besdt studies by **[CET Chd. 2002, 2003]**
(1) phase contrast microscope
(2) TEM
(3) X-ray technique
(4) Scanning electron microscope

36. The technique of chromatohraphy was evelopment by **[BVP Pune 2002]**
(1) **Wilkins** (2) **George Gey**
(3) **Tswett** (4) **Zernicke**

37. Which of the following dye is used for staining cell organelle mitochondria ? **[PB PMT 2003]**
(1) Janus Green (2) Saffranin
(3) Azure B (4) Crystal violet

38. A student wishes to study the cell structure under a light microscope having **10X** eye piece and **45X** objective. He should illuminate the object by which one of the following colours of light so as to get the best possible resolution ?

[CBSE 2005]

(1) Yellow (2) Green (3) Blue (4) Red

39. A major breakthrough in the studies of cells came with the development of electron microscope. This is because

[CBSE 2006]

(1) electron beam can pass through thick materials, whereas light microscopy requires thin sections.

(2) The electron microscope is more powerful than the light microscope as it uses a beam of electrons which s wavelength much longer than that the photons.

(3) The resolution power of the electron microscope is much higher than that of the light microscope

(4) the resolving power of the electron microscope is 200-350 nm as compared to 0. 1-0. 2 nm for the light microscope

ANSWER KEY

EXERCISE - I

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	**4**	**1**	**3**	**4**	**2**	**3**	**1**	**3**	**3**	**3**	**4**	**4**	**4**	**1**	**1**	**4**	**3**	**3**	**3**	**4**
Que.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ans.	**4**	**2**	**2**	**2**	**3**	**3**	**2**	**3**	**3**	**1**	**4**	**3**	**4**	**3**	**3**	**1**	**4**	**4**	**4**	**2**
Que.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans.	**3**	**3**	**2**	**2**	**4**	**2**	**1**	**2**	**2**	**1**	**1**	**4**	**4**	**3**	**2**	**3**	**3**	**2**	**2**	**2**

EXERCISE – II

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	**3**	**1**	**4**	**2**	**1**	**3**	**1**	**1**	**2**	**2**	**4**	**2**	**4**	**1**	**1**

EXERCISE – III

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**1**	**4**	**3**	**4**	**1**	**3**	**4**
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	**2**	**4**	**2**	**4**	**4**	**3**	**3**	**1**	**2**	**2**	**2**	**3**	**3**	**4**	**2**
Que.	31	32	33	34	35	36	37	38	39						
Ans.	**4**	**3**	**2**	**4**	**1**	**3**	**1**	**3**	**3**						