

# Previous Year Question Paper of SET – MAHARASHTRA LIFE SCIENCES: Paper – III State Eligibility Test

# 2017, April

(Original Question Paper with Answer Key) State Eligibility Test



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		tlet Code & Serial No. कोड व क्रमांक C-III	
	LIFE SC	IENCE	
Sigr	ature and Name of Invigilator	Seat No.	
1.(S)	ignature)	(In figures as	in Admit Card)
(N	ame)	Seat No	
2.(S)	ignature)	(In words)	
(N	ame)	OMR Sheet No.	
	PR - 34317	(To be filled by th	
	e Allowed : 2½ Hours]	—	um Marks : 150
Num	ber of Pages in this Booklet : <b>20</b>	Number of Questions in t	
<ol> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> </ol>	Instructions for the Candidates Write your Seat No. and OMR Sheet No. in the space provided on the top of this page. This paper consists of 75 objective type questions. Each question will carry <i>two</i> marks. <i>All</i> questions of Paper-III will be compulsory, covering entire syllabus (including all electives, without options). At the commencement of examination, the question booklet will be given to the student. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as follows: (i) To have access to the Question Booklet, tear off the paper seal on the edge of this cover page. Do not accept a booklet without sticker-seal or open booklet. (ii) Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to missing pages/ questions or questions repeated or not in serial order or any other discrepancy should not be accepted and correct booklet should be obtained from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given. The same may please be noted. (iii) After this verification is over, the OMR Sheet Number should be entered on this Test Booklet. Each question has four alternative responses marked (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item. Example : where (C) is the correct response.	विद्यार्थ्यांसाठी महत्त्वाच्या स 1. परिक्षार्थींनी आपला आसन क्रमांक या पृष्ठाव तसेच आपणांस दिलेल्या उत्तरपत्रिकेचा क्रमां 2. सदर प्रश्नपत्रिकेत 75 बहुपर्यायी प्रश्न आ आहेत. या प्रश्नपत्रिकेतील <b>सर्व</b> प्रश्न सोडवि हे या विषयाच्या संपूर्ण अभ्यासक्रमावर आध 3. परीक्षा सुरू झाल्यावर विद्यार्थ्याला प्रश्नपत्रिक मिनीटांमध्ये आपण सदर प्रश्नपत्रिका उघडून पहाव्यात. (i) प्रश्नपत्रिका उघडण्यासाठी प्रश्नपत्रिक सील नसलेली किंवा सील उघडले (ii) पहिल्या पृष्ठावर नमूद केल्याप्रमा तसेच प्रश्नपत्रिकोतील एकूण प्रश्न पृष्ठे कमी असलेली/कमी प्रश्न फ्रश्वातीच्या 5 मिनिटातच पर्यं प्रश्नपत्रिका मागवृन् घ्यावी. त् मिळणार नाही तसेच वेळही वाढवू विद्यार्थ्यांनी नोंद घ्यावी. (iii) वरीलप्रमाणे सर्व पडताळून प ओ.एम.आर. उत्तरपत्रिकेचा नंबर ति 4. प्रत्येक प्रश्नासाठी (A), (B), (C) आणि (D) आहेत. त्यातील योग्य उत्तराचा रकाना खाल काळा/निळ्य करावा.	सरील वरच्या कोप-यात लिहावा. iक त्याखाली लिहावा. हेत. प्रत्येक प्रश्नास दोन गुण ाणे अनिवार्य आहे. सदरचे प्रश्न ारित आहेत. का दिली जाईल. सुरुवातीच्या 5 ा खालील बाबी अवश्य तपासून वेकेवर लावलेले सील उघडावे. ली प्रश्नपत्रिका स्विकारू नये. ाणे प्रश्नपत्रिका सिवकारू नये. गंची संख्या पडताळून पहावी. असलेली/प्रश्नांचा चूकीचा असलेली सदोष प्रश्नपत्रिका वेक्षकाला परत देऊन दुसरी यानंतर प्रश्नपत्रिका बदलून न मिळणार नाही याची कृपया हिल्यानंतरच प्रश्नपत्रिकेवर लहावा. अशी चार विकल्प उत्तरे दिली
<ol> <li>5.</li> <li>6.</li> <li>7.</li> <li>8.</li> <li>9.</li> </ol>	Your responses to the items are to be indicated in the <b>OMR</b> <b>Sheet given inside the Booklet only</b> . If you mark at any place other than in the circle in the OMR Sheet, it will not be evaluated. Read instructions given inside carefully. Rough Work is to be done at the end of this booklet. If you write your Name, Seat Number, Phone Number or put any mark on any part of the OMR Sheet, except for the space allotted for the relevant entries, which may disclose your identity, or use abusive language or employ any other unfair means, you will render yourself liable to disqualification. You have to return original OMR Sheet to the invigilator at the end of the examination compulsorily and must not carry it with you outside the Examination Hall. You are, however, allowed to carry the Test Booklet and duplicate copy of OMR Sheet on	<ul> <li>उदा. : जर (C) हे योग्य उत्तर असेल तर.</li> <li>A B B</li> <li>5. या प्रश्नपत्रिकेतील प्रश्नांची उत्तरे ओ.एम.आ इतर ठिकाणी लिहीलेली उत्तरे तपासली जाणार न</li> <li>6. आत दिलेल्या स्वचना काठ्यापूर्वक वाचाव्या प्रश्नपत्रिकेच्या शेवटी जोडलेल्या कोऱ्या पा- अ. जर आपण ओ.एम.आर. वर नमूद केलेल्या ' नाव, आसन क्रमांक, फोन नंबर किंवा ओळ केलेली आढळून आल्यास अथवा असभ्य भारं अवलंब केल्यास विद्यार्थ्याला परीक्षेस अपाः अवलंब केल्यास विद्यार्थ्याना पूळ ओ.एम.3 परीक्षा संपल्यानंतर विद्यार्थ्याने मूळ ओ.एम.3 परीक्षा संपल्यानंतर विद्यार्थ्याने मूळ ओ.एम.3 प्रत करणे आवश्यक आहे. तथापी, प्रश्नपत्रिव द्वितीय प्रत आपल्याबरोबर नेण्यास विद्यार्थ्या</li> </ul>	ाहीत. त. नावरच कच्चे काम करावे. ठिकाणा व्यतिरीक्त इतर कोठेही अख पटेल अशी कोणतीही खूण शेचा वापर किंवा इतर गैरमार्गाचा त्र ठरविण्यात येईल. ना र. उत्तरपत्रिका पर्यवेक्षकांकडे त व ओ.एम.आर. उत्तरपत्रिकेची
10. 11. 12.	conclusion of examination. Use only Blue/Black Ball point pen. Use of any calculator or log table, etc., is prohibited. There is no negative marking for incorrect answers.	<ol> <li>फक्त निळ्या किंवा काळ्या बॉल पेनचाच</li> <li>कॅलक्युलेटर किंवा लॉग टेबल वापरण्य</li> <li>चुकीच्या उत्तरासाठी गुण कपात केली ज</li> </ol>	त्र वापर करावा. ास परवानगी नाही.

## Life Science Paper III

#### Time Allowed : 2<sup>1</sup>/<sub>2</sub> Hours]

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[Maximum Marks : 150

Note : This paper contains Seventy Five (75) multiple choice questions. Each question carries Two (2) marks. Attempt All questions.

3			[P.T.O.
	(D) Armen Takhtajan's		(D) Archegonia
	(C) Engler and Prantl's		(C) Antheridia
	(B) APG		
	(A) Bentham and Hooker's		(B) Sporophytes
	classification.		(A) Gametophytes
	outcome of system of		gametes in prothallus are :
	division of flowering plants into monocots and dicots is the major	5.	The structure which produces male
3.	The disappearance of tradition		Isoleucine and Valine residues
	(D) Binary		(D) Carboxyl side of Phenylalanine
	(C) Biphasic		glutamate residues
	(B) Bimodal		(C) Carboxyl side of aspartate and
	(A) Binomial		
	nomenclature called as :		residues
2.	Linnaeus gave a system of		(B) Carboxyl side of methionine
	(D) Bacteriological nomenclature		arginine residues
	(C) Virus nomenclature		(A) Carboxyl side of lysine and
	(B) Zoological nomenclature		The cleavage occurs at :
	(A) Botanical nomenclature		before its amino acid sequencing.
1.	Tautonyms are $not$ accepted in :	4.	Trypsin was used to digest a protein,

- 6. Presence of elators in the sporangium is a characteristic feature of .....
  - $(A) \ Equisetum$
  - (B) Ceratopteris
  - (C) Marsilea
  - (D) Actinopteris
- 7. In mature coconuts the liquid endosperm becomes milky and ......
  - (A) it does not contain free nuclei or cells
  - (B) it contains free nuclei only
  - (C) it contains cells only
  - (D) it contains free nuclei or cells.
- 8. In family *Rutaceae*, fruits are mainly :
  - (A) Schizocarp
  - (B) Capsule
  - (C) Hesperidium
  - (D) Siliqua

- 9. Regeneration of plants avoiding fertilization is known as :
  - (A) Apogamy
  - (B) Apospory
  - (C) Diplospory
  - (D) Syngamy
- 10. A pentacarpellary, pentalocular ovary has 2 ovules per locule. It develops into parthenocarpic fruit. The number of seeds in the fruit will be :
  - $(A) \ 20$
  - (B) 10
  - (C) 40
  - $(D) \ 00$
- 11. Common bread wheat *Triticum aestivum* is :
  - (A) Diploid
  - (B) Tetraploid
  - (C) Hexaploid
  - (D) Octoploid

- 12. In plants stomatal closure is induced by :
  (A) High K<sup>+</sup> concentration
  14. In which of the following photosynthetic pigments, the central photosynthetic photosynthetic pigments, the central photosynthetic photosynthetic

  - $(B) \ Low \ CO_2 \ concentration$
  - $(C) \ Low \ pH$
  - $(D) \ ABA$
- 13. The major ureide compounds that are used to transport nitrogen from sites where their deamination will provide nitrogen for amino acid and nucleoside synthesis are .....
  - (A) oxaloacetic acid, tyrosine and allantoin.
  - (B) allantoic acid, allantoin and citrulline.
  - (C) Citrulline, pyruvic acid and glutamate
  - (D) allantoic acid, methionine and oxaloacetic acid

- 4. In which of the following photosynthetic pigments, the central magnesium has been replaced by two hydrogens ?
  - $(A) \ phycocyanin$
  - $(B) \ chlorophyll-b$
  - (C) phaeophytin
  - (D) chlorophyll-a
- 15. Stomata remains open for  $CO_2$ absorption in CAM plants during :
  - (A) Night time
  - (B) Early morning
  - (C) Day time
  - (D) Noon

16	A flack of light during the		
10.	A flash of light during the	18. Typically the insect leg consists of	
	dark period induces flowering in a	six segments :	
	long-day plant and the effect is	(i) coxa,	
	reversed by a flash of light.		
	(A) red, far-red	( <i>ii</i> ) femur,	
	(B) far-red, red	( <i>iii</i> ) pretarsus,	
17.		( <i>iv</i> ) tarsus,	
	(C) blue, red		
	(D) red, blue	(v) tibia, and	
	Which of the following is	(vi) trochanter.	
	electromagnetic radiations that are	Their <i>correct</i> proximal to distal	
	used in mutation breeding ?	sequence is :	
	(A) y-rays	(A) $(ii) \rightarrow (vi) \rightarrow (i) \rightarrow (v) \rightarrow (iii) \rightarrow (iv)$	
	(B) α-rays	(B) $(ii) \rightarrow (ii) \rightarrow (vi) \rightarrow (iii) \rightarrow (iv) \rightarrow (v)$	
	(C) β-rays	(C) $(i) \rightarrow (vi) \rightarrow (ii) \rightarrow (v) \rightarrow (iv) \rightarrow (iii)$	
	(D) UV-rays	(D) $(i) \rightarrow (ii) \rightarrow (iii) \rightarrow (iv) \rightarrow (v) \rightarrow (vi)$	
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- 19. The coelom of animals belonging to the phyla ..... develops by the process of schizocoele.
  - (A) Porifera, coelenterata,Platyhelminthes
  - (B) Annelida, Arthropoda, Mollusca
  - (C) Pogonophora, Nematoda, Chaetognatha
  - (D) Echinodermata, Chordata
- 20. Urochordates show resemblance to invertebrates like Molluscs *except* in :
  - (A) Presence of cartilage
  - (B) Presence of pericardium and pancreatic tissue
  - (C) Presence of radula
  - (D) Ammonia as excretory product
- 21. Which of the following fishes is *not* a dipnoan ?
  - (A) Neoceratodus
  - $(B) \ \ Notopterus$
  - (C) Lepidosiren
  - $(D) \ \ Protopterus$

- 22. ..... is the outermost connective cover of a skeletal muscle.
  - (A) Myomysium
  - $(B) \ Endomysium$
  - (C) Perimysium
  - (D) Epimysium
- 23. The arteries are thicker-walled as compared to that of the veins. This helps in :
  - (A) increased force of contraction of the veins as compared to by the arteries.
  - (B) the arteries can exert more force of contraction than that of the veins.
  - (C)  $O_2$  diffusion can take place better in the arteries than in the veins.
  - (D) CO<sub>2</sub> diffusion can take place better in the veins than in the arteries.
- 7

[**P.T.O.** 

- 24. In birds and reptiles the primordial germ cells originate in the :
  - (A) Epiblast
  - (B) Hypoblast
  - (C) Germinal crescent
  - (D) Embryonic allantois
- 25. Which of the following are responsible for prevention of polyspermy ?
  - (A) Change in the mambranepotential of egg plasmamembrane
  - (B) Cortical granule exocytosis/ cortical reaction
  - $(C) \ Both \ (A) \ and \ (B)$
  - (D) Molecular changes in the zona pellucida proteins

- 26. Damage of one of the following structure(s) resulted in loss of a Circadian rhythm. The structure is most likely to be :
  - (A) Liver
  - (B) Eyes
  - (C) Pituitary
  - (D) Suprachiasmatic nucleus.
- 27. When birds such as great tit are removed from their territory :
  - (A) they tend to be replaced by the same number of birds.
  - (B) the territories are left vacant
  - (C) they are replaced by the local birds to the exclusion of new members
  - (D) They are replaced by a greater number of birds

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9	)	[ <b>P.T.O.</b>
(D) Lantana weevil		(D) 4 : 1
		(C) 1 : 2
(C) Lantana bug		(B) 2 : 1
(B) Aphid		(A) 3 : 1
÷		in general is :
(A) Shoot fly	32.	The DNA protein ratio in chromatin
weed Lantana camara ?		(D) Adenovirus
used for the prological control of the		(C)
used for the biological control of the		(B) Mu phage
Which one of the following insects is		(A) TMV
(D) T cell-independent response	U	virus obeys Chargaff's rule ?
(c) macosar minune response	31.	The genome of which of the following
(C) Mucosal immune response		<ul><li>(D) power sprayer</li></ul>
(B) TH 2 response		<ul><li>(C) knaspack sprayer</li></ul>
(,, Ferre		<ul><li>(B) foot sprayer</li></ul>
(A) TH 1 response		(A) hand sprayer
preferably mount a :		require the lowest volume of spray solution ?
Leishmania infection host should		sprayers among the following will
T · 1 · · · · · · · · · · · · · · · · ·		agricultural land, which type of
To overcome intracellular	30.	In order to cover one hectare of an
	Leishmania infection host should preferably mount a : (A) TH 1 response (B) TH 2 response (C) Mucosal immune response (D) T cell-independent response Which one of the following insects is used for the biological control of the weed <i>Lantana camara</i> ? (A) Shoot fly (B) Aphid (C) Lantana bug (D) Lantana weevil	<ul> <li>10 overcome intracellular</li> <li>Leishmania infection host should</li> <li>preferably mount a :</li> <li>(A) TH 1 response</li> <li>(B) TH 2 response</li> <li>(C) Mucosal immune response</li> <li>(D) T cell-independent response</li> <li>Which one of the following insects is</li> <li>used for the biological control of the</li> <li>weed <i>Lantana camara</i> ?</li> <li>(A) Shoot fly</li> <li>(B) Aphid</li> <li>(C) Lantana bug</li> </ul>

- 33. Binding of epinephrine to a Gprotein-linked receptor causes adenyl cyclase to produce large amounts of :
  - (A) Inositol triphosphate
  - (B) cAMP
  - $(C) \ cGMP$
  - (D) G Protein
- 34. The limiting factor for productivity in an aquatic ecosystem is :
  - (A) Temperature
  - (B) Wind
  - (C) Light
  - (D) Water mass movement
- 35. Which one of the following groups of fishes is considered to be 'living fossil' ?
  - (A) Holocephali
  - $(B) \ Coelocanths$
  - (C) Elasmobranchs
  - (D) Dipnoi

- 36. Which animal of the following list is also called as white socks ?
  - (A) Rhinoceros
  - (B) Slender Loris
  - (C) Indian Gaur
  - (D) Pangolin
- 37. In the lakes the top consumer must be :
  - (A) fishes that eat phytoplankton
  - (B) fishes that consume detritus
  - (C) fishes that are piscivores
  - (D) fishes that eat zooplankton
- 38. The neuromasts present in the lateral line organ of fish serve as :
  - (A) chemoreceptor
  - (B) rheoreceptor
  - (C) gustoreceptor
  - (D) alfactoreceptor

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- 39. During conjugation, if the F factor is attached to the bacterial genome, the donor is called as :
  - (A) F+
  - (B) F++
  - (C) Hfr
  - (D) F+ super strain
- 40. Epstein-Barr Virus (EBV) is *not* associated with :
  - (A) Infectious Mononucleosis
  - (B) Kaposis Sarcoma
  - (C) Burkitt's Lymphoma
  - (D) Nasopharyngeal carcinoma
- 41. Which of the following is used to remove excess metal ions from molasses for citric acid production by *A. niger* ?
  - (A) Potassium ferrocyanate
  - (B) Potassium permanganate
  - (C) Potassium hydroxide
  - (D) Calcium carbonate

- 42. Staphylococcus aureus is one of the important food-borne pathogen responsible for food-poisoning in India. Which of the following statements is most appropriate regarding this pathogen ?
  - (A) S. aureus is Gram negative
  - (B) Incubation time for staphylococcal food poisoning is very short because the organisms grow in food and produce heatstalle enterotoxin in food
  - (C) Incubation time for staphylococcal food poisoning is
    - 3 to 4 days
  - (D) S. aureus causes food poisoning because it produces endotoxin

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- 43. A living microbe with reduced virulence that is used for vaccination is considered :
  - (A) Dormant
  - (B) Virulent
  - (C) Attenuated
  - (D) Denatured
- 44. The percentage of human peripheral blood T cells bearing a gamma delta T cell receptor is :
  (A) 30-80%
  (B) 1-5%
  (C) 100%
  (D) 0%

- 45. The follwing are some of the characteristic features of enzyme inhibitors. Which of the following are true with respect to competitive inhibitors ?
  - Select the *correct* answer from the options given below it :
  - (i) Competitive inhibition can be overcome by a sufficiently high concentration of substrate.
  - (ii) A competitive inhibitor diminishes the rate of catalysis by reducing the proportion of enzyme molecules bound to a substrate.
  - (*iii*) The competitive inhibitor binds only to the enzyme substrate complex
  - (*iv*) Competitive inhibitor can be used as drugs.
  - (A) (*i*), (*ii*), (*iii*), (*iv*)
  - (B) (*i*), (*ii*), (*iii*)
  - (C) (ii), (iii), (iv)

(D) (*i*), (*ii*), (*iv*)

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46.	Among the following three forms of DNA, which one has deeper major groove ?	48.	In plants and some microorganisms, a metabolic pathway is operated that allows the conversion of acetyl CoA generated from fat stores into	
	(A) A-Form	49.	glucose. Which of the following is that pathway ?	
	(B) B-Form		(A) Citric acid cycle	
	(C) Z-Form		(B) $\beta$ oxidation	
	(D) Both A and Z forms		49.	(C) Glyoxylate cycle
47.	Thylakoid membranes of			<ul><li>(D) Urea cycle</li><li>Maple syrup disease is caused due</li></ul>
	chloroplasts are rich in :		to defect in :	
	(A) gangliosides and cerebrosides			(A) the degradation of Tyrosine
	(B) sphingolipids and galactolipids		(B) urea synthesis	
	(C) sulfolipids and sphingolipids			<ul><li>(C) formation of Tyrosine</li><li>(D) the degradation of branched</li></ul>
	(D) galactolipids and sulfolipids		chain amino acids	
	13		[P.T.O.	

- 50. The amount of energy that must be added to break a bond is exactly equal to the amount that is released upon formation of the bond. Which law of thermodynamics among the following is applicable to this situation ?
  - (A) First
  - $(B) \ Second$
  - (C) Third
  - $(D) \ \ Fourth$
- 51. Dam methylase show strand discrimination by :
  - (A) Methylation of Cytosine
  - (B) Methylation of Thymine
  - (C) Methylation of Guanine
  - (D) Methylation of Adenine

- 52. tRNA having an anticodon AAA will interact with one of the following amino acids during protein synthesis.
  - (A) phenylalanine
  - (B) Lysine
  - (C) Glycine
  - (D) Methionine
- 53. Rapid amplification of cDNA ends (RACE) is used :
  - (A) to obtain full length sequence
    - of a transcript
  - $\left( B\right)$  to detect a gene
  - (C) to detect protein DNA interaction
  - (D) to measure protein RNA interaction

- 54. DNA methylation at CpG island can be detected by :
  - (A) Regular sequencing
  - (B) Bisulphite sequencing
  - (C) Deep sequencing
  - (D) Single nucleotide polymorphism study
- 55. cDNA is used to express mammalian proteins in bacteria rather than genomic DNA. Which one of the following is the best explanation ?
  - (A) It is easier to done cDNA than genomic DNA of comparable size.
  - (B) It is easier to clone RNA than DNA.
  - (C) It is not possible to clone entire coding region of the gene.
  - (D) Most eukaryotic genes have introns that cannot be removed in bacteria.

- 56. The main principle behind Sanger's method of DNA sequencing.
  - (A) use of reverse transcriptase enzyme.
  - (B) use of thymidine dimers
  - (C) use of di-deoxy nucleotide analogues.
  - (D) use of ATP
- 57. Hallmark of Apoptosis is :
  - (A) DNA synthesis
  - (B) Nuclear fragmentation
  - (C) Nuclear division
  - (D) Fat deposition
- 58. Which of the following types of protein could be coded by a tumour-suppressor gene ?
  - (A) A protein that forms part of a growth factor signaling pathway
  - (B) A protein that codes for a DNA repair enzyme
  - (C) A protein that helps prevent apoptosis
  - (D) A protein that controls progression through the cell cycle.

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- 59. A virus that kills its host is said to be :
  - (A) Lysogenic
  - (B) Temperate
  - (C) Lytic
  - (D) Lytic or Lysogenic but not temperate
- 60. The green fluorescent protein reporter construct transfection can be used to monitor :
  - (A) Cell size
  - (B) Intracellular gene expression
  - (C) DNA content
  - (D) Cell granularity
- 61. Somatic embryos obtained from cotyledonary explant of a diploid plant will be :
  - (A) Diploid
  - (B) Haploid
  - (C) Triploid
  - (D) Tetraploid

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- 62. During the growth of animal cells in culture it is noticed that the cells do not look very healthy. After an investigation it was found that there is a lot of lactic acid in the culture medium. What is possibly *wrong* with this culture ?
  - (A) The cells have too much oxygen
  - (B) Ethyl alcohol is being produced in cxcess
  - (C) Glycolysis is being investigated
  - (D) The cells do not have enough oxygen
- 63. Cystic fibrosis is caused by a mutation in the gene for a transporter protein, cystic fibrosis transmembrane conductance regulator (CFTR). CFTR is an ion channel in the plasma membrane of epithelial cells. Which of the following channels does CFTR belong to ?
  - (A) Sodium channel
  - (B) Potassium channel
  - (C) Chloride channel
  - (D) Acetylcholine receptor channel

- 64. The main difference between active transport and facilitated diffusion is :
  - (A) in active transport the molecules move from areas of low concentration to areas of high concentration without spending energy.
  - (B) in diffusion the molecules move from areas of low concentration to areas of high concentration without spending energy.
  - (C) in active transport energy is consumed to move molecules againt a concentration gradient.
  - (D) although a carrier molecule may not be needed in active transport, diffusion cannot take place without a carrier molecule.

- - (A) Green colour
  - (B) White colour
  - (C) Yellow colour
  - (D) Blue colour
- 66. What is the purpose of the fluidics system of a flow cytometer ?
  - (A) To serve as a buffer for cell maintenance.
  - (B) To dilute the concentration for the sample.
  - (C) To deliver sample appropriately to the interrogation point for the measurement.
  - (D) To provide a cushion to prevent cell death following excitation.

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- 67. High performance liquid chromatography achieves better purification because of :
  - (A) High retention time
  - (B) High volumetric phase ratio
  - (C) Increased number of partition plates
  - (D) High pressure
- 68. Free radical content in a sample can be detected using spectroscopic technique :
  - $(A) \ ESR$
  - (B) NMR
  - (C) Fluorescence
  - (D) UV-visible absorption

- 69. One nanometer is equal to :
  - $(A) \ 0.1 \ \mu m$
  - $(B) \ 0.01 \ \mu m$
  - $(C) \ 0.001 \ \mu m$
  - $(D) \ 0.0001 \ \mu m$
- 70. For-UV CD spectra of proteins give infromation on :
  - (A) Primary structure
  - (B) Secondary structure
  - (C) Tertiary structure
  - (D) Quarternary structure
- 71. Half life of radioactive I<sup>131</sup> is 8 days. If you have 200 micromoles of this isotope at one instant, how many micromoles will remain at the end of thirty two days ?
  (A) 12.5
  (B) 25
- - 18

(C) 50

(D) 100

	1	9	[ <b>P.T.O</b> .
	(D) Chromium release assay		(D) square root of <i>np</i>
73.	(C) ELISA		(C) square root of npq
	(B) Chemotaxis assay		(B) square root of pq
	(A) Thymidine uptake assay		(A) square root of $p$
	measured by :		by :
	Cell proliferation is generally		standard deviation is determined
	(D) Fungi	75.	where $n > 10$ and $p$ is $\approx 0.5$ , the
			In binomial distribution of a sample
	(C) Viruses		(D) Positrons
	(B) Spore-forming bacteria		(C) γ-rays
	(A) Thermotolerant bacteria		(B) β-rays
	ionizing radiations ?		(A) α-rays
	following groups is most resistant to		in biology emit :
72.	In general, which among the	74.	Most commonly used radioisotopes

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