A

Test Registration No. _____

The Maharaja Sayajirao University of Baroda
Faculty of Science

M.Sc. ENTRANCE EXAMINATION

SUBJECT: Five Year Integrated M.Sc. in Cell & Molecular Biology
DAY: Friday DATE: 8th July 2022 TIME: 12:00 Pm to 1:30 pm

Important Instructions:

1. This test booklet is to be opened only when instructed by the invigilators to do so.
2. This booklet carries 100 questions on 14 printed pages. All questions carry equal marks.
3. For every correct answer, candidate will earn 1 mark, for every wrong answer 25% mark will be deducted.
4. **Test Registration Number** must be entered correctly in the OMR sheet, as advised by the invigilators. The **Question Booklet code (A, B, C, or D)** must also be mentioned on the OMR sheet (if not printed already) as instructed.
5. Answers must be marked in the OMR sheet using **a black or dark blue ball point pen only**. The circle should be filled in completely, leaving no gaps.
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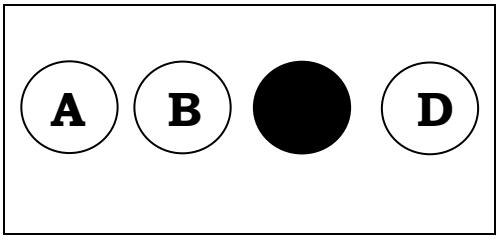
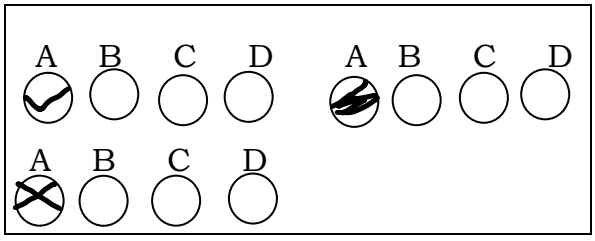
Correct way of marking answer:



Incorrect way of marking answer:



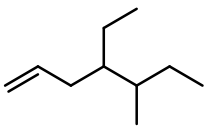
Invigilator's signature_____

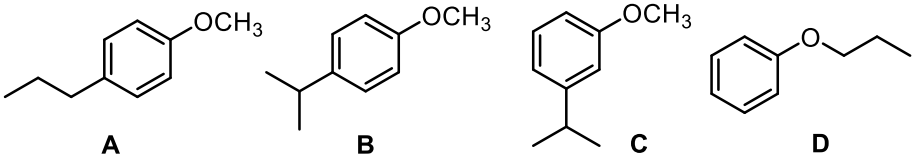
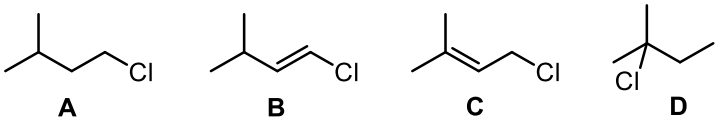
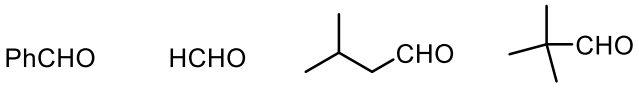
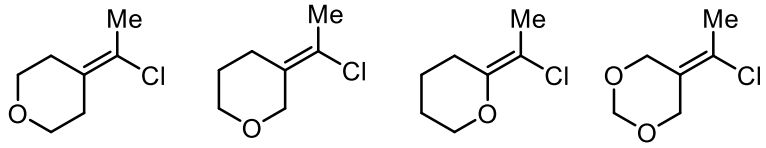
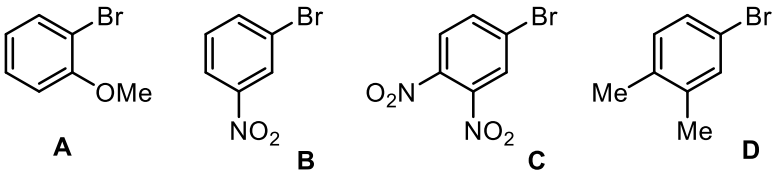
Five Year Integrated M.Sc. in Cell & Molecular Biology
Faculty of Science
The M. S. University of Baroda
Vadodara
Entrance Test - 2022

	Part-A	
	GENERAL APTITUDE &GENERAL KNOWLEDGE QUESTIONS	
No.	Questions	
1	How many different salads can be made from carrot, tomato, onion, cucumber, and capsicum? A. 31 B. 126 C. 15 D. 625	
2	In how many ways you can rearrange word "SCIENCE"? A. 5040 B. 1260 C. 1060 D. 2520	
3	India has won which of the following cup in sports? A. Uber Cup B. Thomas Cup C. Davis Cup D. FIFA world cup	
4	Two candidates are selected randomly with replacements from the list containing 8 boys and 10 girls. What will be the probability of at most one girl being selected? A. 4/9 B. 36/81 C. 20/81 D. 5/9	
5	A, P, R, X, S, and Z are sitting in a row. S and Z are in the centre. A and P are at the ends. R is sitting to the left of A. Who is to the right of S? A. Z B. R C. A D. P	
6	From his house, Rohit went 15 km to the North. Then he turned to his left and covered 10 km. Then he turned south and covered 5 km. Finally, turning to his left, he covered 10 km. In which direction is he from his house? A. East	

	B. North C. North-East D. South-West	
7	"He is the son of the only son of my grandfather," Lauren says, pointing to a photograph. How is the man in the picture related to Lauren? A. Brother B. Father C. Uncle D. Cousin	
8	Two numbers are respectively 20% and 50% more than a third number. The ratio of the two numbers is: A. 2:5 B. 3:5 C. 4:5 D. 5:4	
9	Which was the biggest aircraft that was recently damaged in Ukraine Russia war? A. Boeing 747 Dreamlifter B. Aero Spaceline's Super Guppy C. Antonov An-225 Mriya D. Lockheed C-5 Galaxy	
10	The military operation which annexed Hyderabad into the Indian Union was code named as A. Operation Vijay B. Operation Polo C. Operation Meghdoot D. Operation Virat	
11	The 2022 International Booker Prize for translated fiction was recently awarded to Geetanjali Shree for her novel named, _____. A. Happy Stories B. Cursed Bunny C. Heaven D. Tomb of Sand	
12.	Which of the following countries borders Ukraine? A. Germany B. Czech Republic C. Slovakia D. Croatia	
13	Which of the following organization decides the REPO rate? A. Reserve Bank of India B. Securities Exchange Board of India C. Insurance Regulatory and Development Authority D. State Bank of India	

14	The size of SARS-CoV2 viral genome is approximately A. 22 kb B. 30 kb C. 50 kb D. 67 kb	
15.	Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 5? A. 9/20 B. 8/15 C. 1/2 D. 3/5	
	Part B- CHEMISTRY and PHYSICS	
16	The dissolution of a substance in a solvent is accompanied with A. Change in enthalpy B. Change in entropy C. Change in both a) and b) D. None	
17	Which has the maximum freezing point? A. 6 g CH_3COOH solution in 100 g water B. 6 g NaCl solution in 100 g water C. 6 g Urea solution in 100 g water D. All have equal freezing point	
18	Hardness of water is 200 ppm in presence of CaCO3. Molarity of CaCO3 is A. 2×10^{-3} M B. 1×10^{-3} M C. 2×10^{-2} M D. 2×10^{-4} M	
19	The rate constant of 1st order reaction is 0.0693 min^{-1}. If we start with 20 mol/L, it is reduced to 2.5 mol/L in A. 40 min B. 30 min C. 20 min D. 10 min	
20	The unit of cell constant is_____ A. cm B. cm^{-1} C. cm^{-2} D. mol/L	
21	Smoke generally has a blue tinge. This is due to A. Light Scattering B. Coagulation C. Brownian motion D. Electro-osmosis	

22	After the electrolysis of aqueous solution of NaCl using Pt electrodes, the pH of the solution will _____ A. Remain constant B. Increase C. Decrease D. Cannot be determined	
23	What is the coordination number of Cobalt in the $[Co(H_2O)_4\ (NO_3)_2]^{2-}$ and $[Co(CO)_2Cl_4]^{+}$, respectively? A. 6 and 6 B. 4 and 4 C. 2 and 1 D. 8 and 5	
24	Choose the correct decreasing order of the oxidation state of nitrogen from the following A. HNO_3, NH_3, NO, N_2 B. HNO_3, NO, NH_4Cl, N_2 C. HNO_3, NO, N_2, NH_3 D. NH_3, HNO_3, NO, N_2	
25	Which set of four quantum numbers corresponds to an electron in a 4p orbital? A. n = 4, l = 1, ml = 0, m_s = 1/2 B. n = 4, l = 3, ml = 3, m_s = -1/2 C. n = 4, l = 2, ml = 0, m_s = 1/2 D. n = 4, l = 4, ml = 3, m_s = -1/2	
26	Determine the hybridization of oxygen in CH_3OH A. sp B. sp^2 C. sp^3 D. sp^3d	
27	What is the electron configuration for Fe^{2+}? A. $4s^23d^6$ B. $4s^23d^4$ C. $4s^03d^6$ D. $4s^23d^8$	
28	Calculate the wavelength of an electron traveling with a speed of 2.65 $x10^6$ m/s. A. 2.7 X 10^{-10} m B. 2.7 X 10^{-8} m C. 2.9 X 10^{-21} m D. 2.9 X 10^{-19}m	
29	What is the correct IUPAC name of the following compound?  A. 3-Methyl-4-ethylhex-6-ene B. 2,3-Diethylhex-5-ene	

	C. 4,5-Diethylhex-1-ene D. 4-Ethyl-5-methylhept-1-ene	
30	What major product is obtained when anisole (PhOMe) is treated with n-propylchloride and anhydrous $AlCl_3$?  **A** **B** **C** **D**	
31	Which of the following alkyl halides will undergo nucleophilic substitution reactions by S_N2 mechanism, when treated with aqueous NaOH?  **A** **B** **C** **D**	
32	Which is the most suitable reagent for the conversion of benzamide to aniline? A. Bromine in acetic acid B. Bromine in NaOH C. Iodine in MeOH D. N-Bromosuccinimide	
33	Which of the following compounds will produce sodium carboxylate and an alcohol, when treated with concentrated sodium hydroxide?  **I** **II** **III** **IV** A. I and II B. II and III C. I, II and IV D. I and IV	
34	Which of the following will show geometrical isomerism?  **I** **II** **III** **IV** A. I and II B. II and III C. Only III D. I and IV	
35	Which of the following halides will produce a phenolic compound most easily, when treated with NaOH?  **A** **B** **C** **D**	

36	Which of the following is the most suitable reagent used for converting ArN_2Cl to ArCl? A. Conc. HCl B. Cu(0) + HCl C. $CuCl_2$ D. Cu_2Cl_2	
37	Which of the following is the most adequate reagent for conversion of acetophenone to ethyl benzene? A. $LiAlH_4$ B. $NaBH_4$ C. NH_2NH_2 in NaOH D. H_2, Pd-C (Catal.)	
38	A Na^+ ion and a Cl^- ion are separated from each other by 10 Å. In which medium will the electrostatic force between them be the highest? A. In vacuum B. In water with dielectric constant = 80 C. In polymer with dielectric constant = 210 D. Force will be the same in all the above media	
39	Three charges of –0.15*e* equidistant from the origin at a distance of 1.307 Å, arranged in an equilateral triangle in the *xy* plane. What is the electric field at the origin? A. 0.118×10^{-11} N/C B. 0 C. 0.118×10^{-29} N/C D. 0.118×10^{11} N/C	
40	A TV tube contains two parallel plates 7.5 mm apart. If a potential difference of 150 V is maintained between them. What is the force on an electron in the gap between the plates? A. 3.2×10^{-15} N B. 3.2×10^{-20} N C. 20 N D. None of the above	
41	The dipole moment of a C=O bond is 2.70 D and the bond length is 0.122 nm. What is the effective charges on the two atoms (e represents the electronic charge)? A. 0.461 e B. 7.38×10^{-20} C C. 7.38 e D. Both (a) and (b)	
42	A geosynchronous satellite is one which A. Revolves around the earth in the same speed as that of the earth's revolution around the sun B. Revolves around the earth in the same speed as that of the earth's rotation around its axis	

	C. Its period of revolution matches the period of revolution of the moon D. None of the above	
43	When sound waves travel from air to water, what happens? A. Their frequency changes, but velocity remains constant B. Their velocity changes, but frequency remains constant C. Both velocity and frequency change D. Both velocity and frequency remain unchanged	
44	The ear of some animals can distinguish ultrasonic sound waves, but not human ear. What is the frequency of ultrasonic sound waves? A. They have frequency lower than 10 milli Hz B. They have frequency lower than 10 kilo Hz C. They have frequency higher than 20 kilo Hz D. They have frequency higher than 20 milli Hz	
45	Which optical phenomenon is involved in formation of rainbow? A. Light scattering B. Light reflection C. Light refraction D. Diffraction of light	
46	Which of the following is a magnetic material? A. Carbon B. Cobalt C. Aluminium D. Manganese	
47	Newtonian mechanics failed to explain which concept? A. Motion of rocket B. Features of atomic phenomena C. Falling of objects on the ground D. Motion of planets	
48	What is the coefficient of performance of a refrigerator? Let Q_1 be the heat released to hot reservoir, Q_2 be the heat extracted from a cold reservoir & W be the work done on the refrigerator. A. Q_1/W B. Q_1/Q_2 C. Q_2/W D. Q_2/Q_1	
49	Consider the damped SHM of a spring mass system. If the time taken for the amplitude to become half is 'T', what is the time taken for mechanical energy to become half? A. T B. T/2 C. 2T D. T/4	

50	Which of the following is the mathematical representation of law of conservation of total linear momentum? A. dP/dt = 0 B. dF/dt = 0 C. dP/dt = $F_{internal}$ D. dF/dt = P	
51	Which device is used to measure atmospheric pressure? A. Odometer B. Barometer C. Dynamometer D. Hydrometer	
52	A concave mirror is held in water. What should be the change in the focal length of the mirror? A. Halved B. Doubled C. Remains the same D. Increases exponentially	
53	Which of the following causes refraction of light? A. Change in the density of light from one medium to another B. Change in viscosity of light from one medium to another C. Change in the speed of light from one medium to another D. Change in direction of light from one medium to another	
54	Two beams, one of red light and the other of blue light, of the same intensity are incident on a metallic surface to emit photoelectrons. Which emits electrons of greater frequency? A. Both B. Red light C. Blue light D. Neither	
55	Electric field inside a hollow conducting sphere _____ A. Increases with distance from the center of the sphere B. Decreases with distance from the center of the sphere C. is zero D. May increase or decrease with distance from the center	
	Part C (Biology)	
56	NADPH is generated in which of the following pathway? A. Kreb's cycle B. Photosynthesis C. Glycolysis D. Urea cycle	
57	Which of the following characteristics is common in humans and adult frogs? A. Four-chambered heart B. internal fertilization C. nucleated RBCs D. ureotelic mode of excretion	

58	Which of the following is an X-Chromosome linked genetic disorder? A. sickle cell disease B. Hemophilia C. Thalassemia D. Leukemia	
59	A linear peptide is made up of 6 residues of an amino acid of molecular weight 120Da. The molecular weight of the peptide will be A. 618 B. 630 C. 600 D. 720	
60	Which of the following structures in Pheretima is correctly matched with its function? A. clitellum- secretes cocoon B. gizzard- absorbs digested food C. setae- defence against predators D. typhlosole- storage of extra nutrients	
61	Which of the following is a Sulphur containing amino acid? A. Proline B. Histidine C. Cysteine D. Glycine	
62	Which of the following glucose transporters is insulin-dependent? A. GLUT I B. GLUT II C. GLUT III D. GLUT IV	
63	Which one of the following phyla is correctly matched with its two general characteristics? A. Echinodermata- pentamerous radial symmetry and mostly internal fertilization B. Mollusca- normally oviparous and development through a trochophore or veliger larva C. Arthropoda- body divided into head, thorax and abdomen and respiration by tracheae D. Chordata- notochord at some stage and separate anal and urinary openings to the outside	
64	Mucus is secreted by which cells in the gastro-intestinal tract? A. Chief Cells B. Goblet cells C. Oxyntic cells	

	D. Duodenal cells	
65	Which one of the following is an example of polygenic inheritance? A. skin colour in humans B. flower colour in Mirabilis jalapa C. production of male honey bee D. pod shape in garden pea	
66	Antibody present in tears is A. IgA B. IgG C. IgD D. IgM	
67	Test cross involves: A. crossing between two genotypes with dominant trait B. crossing between two genotypes with recessive trait C. crossing between two F1 hybrids D. crossing the F1 hybrid with a double recessive genotype	
68	Convergent evolution is illustrated by evolution of _____. A. rat and dog B. bacterium and protozoan C. starfish and cuttlefish D. dogfish and whale	
69	Which of the following techniques will be useful for tracing the origin of particular tribe? A. blood grouping. B. mitochondrial DNA analysis. C. DNA fingerprinting. D. karyotyping.	
70	Bacterial infection can be treated by an antibiotic that blocks protein synthesis. why it does not affect human cell? A. Human and bacterial ribosomes are different B. Antibiotic molecules can't enter human cells. C. Antibiotic gets degraded by human cell. D. different genetic code of human and bacteria.	
71	Which of the following is true for Golden rice? A. It is Vitamin A enriched, with a gene from daffodil B. It is pest resistant, with a gene from Bacillus thuringiensis C. It is drought tolerant, developed using Agrobacterium vector D. It has yellow grains, because of a gene introduced from a primitive variety of rice	
72	The upright pyramid of number is absent in _____. A. pond B. lake C. forest D. grassland	

73	A heterozygous colorblind woman marries a color blind man. What is the ratio of carrier daughters, color blind daughters, normal sons and color blind sons in F1 generation? A. 1:2:2:1 B. 1:1:1:1 C. 2:1:1:2 D. 1:1:2:2	
74	Full form of shRNA is A. Small helix Ribonucleic Acid B. Single hairpin Ribonucleic Acid C. Short hairpin Ribonucleic Acid D. Short Ribonucleic Acid	
75	Hormone Releasing Intrauterine Devices release A. synthetic form of the hormone Estrogen B. synthetic form of the hormone progesterone C. synthetic form of the hormone Prolactin D. synthetic form of the hormone Testosterone	
76	The glucose homeostasis is maintained in the body by A. Insulin B. Glucagon C. Insulin & Glucagon D. Somatostatin	
77	What is the site of perception of photoperiod necessary for induction of flowering in plants? A. Lateral buds B. Pulvinus C. Shoot apex D. Leaves	
78	Thermogenin is responsible for A. Uncoupling of oxidative phosphorylation B. Thermal insulation C. Shivering theromogenesis D. Glucose production	
79	Which of the following is NOT an RNA virus A. Hepatitis B virus B. SARS-CoV-2 C. Ebola Virus D. Hepatitis C Virus	
80	Which of the following immune responses is responsible for rejection of kidney graft? A. Auto- immune response B. Humoral immune response	

	C. Inflammatory immune response D. Cell-mediated immune response	
81	Which of the following is a polysaccharide of animal origin A. Pectin B. Cellulose C. Chitin D. Arabinoxylans	
82	At meta phase, chromosomes are attached to the spindle fibres by A. Satellites B. Centromere C. Kinetochore D. None of the above	
83	Hexokinase and Glucokinase are example of A. Apoenyzme B. Holoenzyme C. Co enzyme D. Isoenzyme	
84	Which of the following one is called molecule scissors? A. Ligases B. Restriction endonucleases C. Reverse transcriptase D. Exonucleases	
85	Which of the following hormone is released by the pineal gland? A. FSH B. Melatonin C. ACTH D. MSH	
86	Humoral immunity is mediated by A. T cells B. Dendritic cells C. Plasma cells D. NK cells	

87	Zymogens of pancreatic juice are activated by A. Kinase B. Phosphatase C. Enterokinase D. Trypsinogen	
88	Which enzyme is used for lysis of plant cells during DNA isolation? A. Lysozyme B. Cellulase C. Chitinase D. Hydrolase	
89	Role of parathyroid hormone is to A. regulate thyroid hormone levels B. regulate body temperature C. regulate levels of iodine D. regulate levels of Calcium	
90	Which of the following is an autonomously replicating circular extra-chromosomal DNA, used for rDNA technology A. Callus B. Plasmid C. Protoplast D. Transposon	
91	Cell wall of cyanobacteria is mainly composed of A. Chitin B. Cellulose C. Chitosan D. Peptidoglycan	
92	Which of the following phase is dominant in bryophyte lifecycle? A. Gametophyte B. Sporophyte C. Pteridophyte D. Cryptophyte	
93	Chlorophyll b is found in A. land plants B. green algae C. cyanobacteria D. All of these	
94	Movement of food through the gastrointestinal tract is known A. mastication B. ejection C. emulsification D. peristalsis	
95	The chloroplast evolved from A. Blue-green algae	

	B. Brown algae C. Green algae D. Red algae	
96	When calyx and corolla are fused it is known as? A. Corolla B. Sepals C. Petals D. Perianth	
97	The oxidation state of Fe in Methemoglobin is A. +1 B. +2 C. +3 D. None of the above	
98	Which of the following cytoskeletal elements is not found in plants A. microtubules B. actin filaments C. intermediate filaments D. spindle fiber	
99	Islets of Langerhans are found in A. liver B. gall bladder C. small intestine D. pancreas	
100	Mycorrhizae are mutualistic associations between Fungi and A. Algae B. Bacteria C. Fungi D. Vascular plants	

5 year integrated M.Sc. in Cell and Molecular Biology

Entrance exam 8-7-2022

ANSWER KEY (SET-A)

Q. No.	ANSWER	Q. No.	ANSWER	Q. No.	ANSWER	Q. No.	ANSWER
1.	A	26.	C	51.	B	76.	C
2.	B	27.	C	52.	C	77.	D
3.	B	28.	A	53.	C	78.	A
4.	B	29.	D	54.	C	79.	A
5.	A	30.	B	55.	C	80.	D
6.	B	31.	A	56.	B	81.	C
7.	A	32.	B	57.	D	82.	C
8.	C	33.	C	58.	B	83.	D
9.	C	34.	B	59.	B	84.	B
10.	B	35.	C	60.	A	85.	B
11.	D	36.	D	61.	C	86.	C
12.	C	37.	C	62.	D	87.	C
13.	A	38.	A	63.	C	88.	B
14.	B	39.	B	64.	B	89.	D
15.	A	40.	A	65.	A	90.	B
16.	C	41.	D	66.	A	91.	D
17.	C	42.	B	67.	D	92.	A
18.	A	43.	B	68.	D	93.	D
19.	B	44.	C	69.	B	94.	D
20.	B	45.	C	70.	A	95.	A
21.	A	46.	B	71.	A	96.	D
22.	B	47.	B	72.	C	97.	C
23.	A	48.	C	73.	B	98.	C
24.	C	49.	B	74.	C	99.	D
25.	A	50.	A	75.	B	100	D

B

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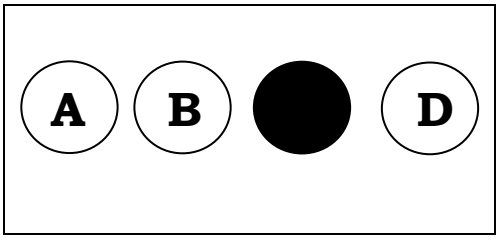

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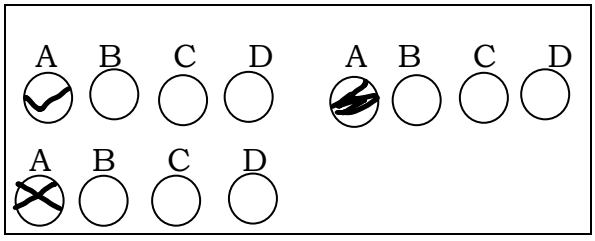

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	Part-A	
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4	Two candidates are selected randomly with replacements from the list containing 8 boys and 10 girls. What will be the probability of at most one girl being selected? A. 4/9 B. 36/81 C. 20/81 D. 5/9	
5	A, P, R, X, S, and Z are sitting in a row. S and Z are in the centre. A and P are at the ends. R is sitting to the left of A. Who is to the right of S? A. Z B. R C. A D. P	
6	From his house, Rohit went 15 km to the North. Then he turned to his left and covered 10 km. Then he turned south and covered 5 km. Finally, turning to his left, he covered 10 km. In which direction is he from his house? A. East B. North	

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7	"He is the son of the only son of my grandfather," Lauren says, pointing to a photograph. How is the man in the picture related to Lauren? A. Brother B. Father C. Uncle D. Cousin	
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9	Which was the biggest aircraft that was recently damaged in Ukraine Russia war? A. Boeing 747 Dreamlifter B. Aero Spaceline's Super Guppy C. Antonov An-225 Mriya D. Lockheed C-5 Galaxy	
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	D. 625	
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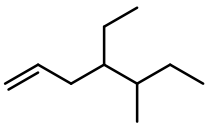
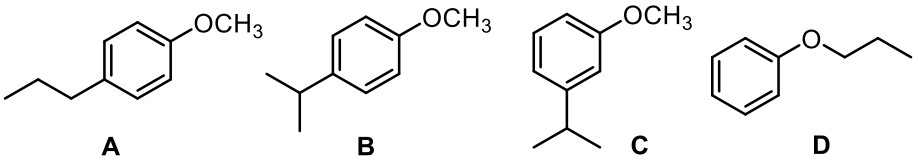
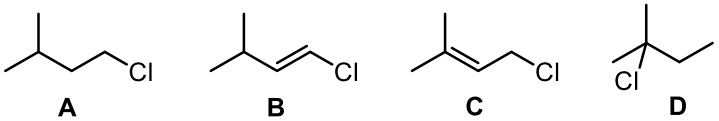
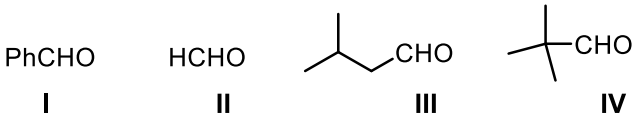
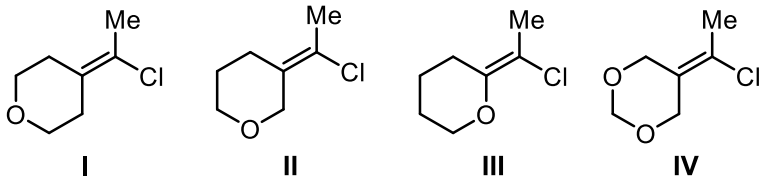
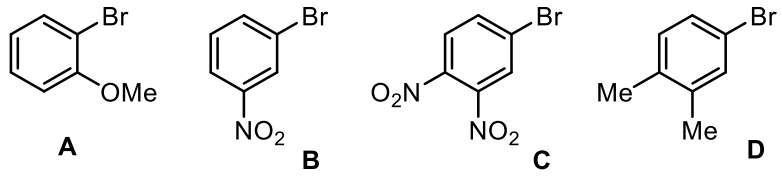
20	Electric field inside a hollow conducting sphere _____ A. Increases with distance from the center of the sphere B. Decreases with distance from the center of the sphere C. is zero D. May increase or decrease with distance from the center	
21	Smoke generally has a blue tinge. This is due to A. Light Scattering B. Coagulation	

	C. Brownian motion D. Electro-osmosis	
22	After the electrolysis of aqueous solution of NaCl using Pt electrodes, the pH of the solution will _____ A. Remain constant B. Increase C. Decrease D. Cannot be determined	
23	What is the coordination number of Cobalt in the $[Co(H_2O)_4\ (NO_3)_2]^{2-}$ and $[Co(CO)_2Cl_4]^{+}$, respectively? A. 6 and 6 B. 4 and 4 C. 2 and 1 D. 8 and 5	
24	Choose the correct decreasing order of the oxidation state of nitrogen from the following A. HNO_3, NH_3, NO, N_2 B. HNO_3, NO, NH_4Cl, N_2 C. HNO_3, NO, N_2, NH_3 D. NH_3, HNO_3, NO, N_2	
25	Which set of four quantum numbers corresponds to an electron in a 4p orbital? A. n = 4, l = 1, ml = 0, m_s = 1/2 B. n = 4, l = 3, ml = 3, m_s = -1/2 C. n = 4, l = 2, ml = 0, m_s = 1/2 D. n = 4, l = 4, ml = 3, m_s = -1/2	
26	Determine the hybridization of oxygen in CH_3OH A. sp B. sp^2 C. sp^3 D. sp^3d	
27	What is the electron configuration for Fe^{2+}? A. $4s^23d^6$ B. $4s^23d^4$ C. $4s^03d^6$ D. $4s^23d^8$	
28	Calculate the wavelength of an electron traveling with a speed of 2.65 $x10^6$ m/s. A. 2.7 X 10^{-10} m B. 2.7 X 10^{-8} m C. 2.9 X 10^{-21} m D. 2.9 X 10^{-19}m	
29	What is the correct IUPAC name of the following compound? 	

	A. 3-Methyl-4-ethylhex-6-ene B. 2,3-Diethylhex-5-ene C. 4,5-Diethylhex-1-ene D. 4-Ethyl-5-methylhept-1-ene	
30	What major product is obtained when anisole (PhOMe) is treated with n-propylchloride and anhydrous $AlCl_3$?  A B C D	
31	Which of the following alkyl halides will undergo nucleophilic substitution reactions by S_N2 mechanism, when treated with aqueous NaOH?  A B C D	
32	Which is the most suitable reagent for the conversion of benzamide to aniline? A. Bromine in acetic acid B. Bromine in NaOH C. Iodine in MeOH D. N-Bromosuccinimide	
33	Which of the following compounds will produce sodium carboxylate and an alcohol, when treated with concentrated sodium hydroxide?  I II III IV A. I and II B. II and III C. I, II and IV D. I and IV	
34	Which of the following will show geometrical isomerism?  I II III IV A. I and II B. II and III C. Only III D. I and IV	
35	Which of the following halides will produce a phenolic compound most easily, when treated with NaOH?	

		
36	Which of the following is the most suitable reagent used for converting ArN_2Cl to ArCl? A. Conc. HCl B. Cu(0) + HCl C. $CuCl_2$ D. Cu_2Cl_2	
37	Which of the following is the most adequate reagent for conversion of acetophenone to ethyl benzene? A. $LiAlH_4$ B. $NaBH_4$ C. NH_2NH_2 in NaOH D. H_2, Pd-C (Catal.)	
38	A Na^+ ion and a Cl^- ion are separated from each other by 10 Å. In which medium will the electrostatic force between them be the highest? A. In vacuum B. In water with dielectric constant = 80 C. In polymer with dielectric constant = 210 D. Force will be the same in all the above media	
39	Three charges of –0.15*e* equidistant from the origin at a distance of 1.307 Å, arranged in an equilateral triangle in the *xy* plane. What is the electric field at the origin? A. 0.118 X 10^{-11} N/C B. 0 C. 0.118 X 10^{-29} N/C D. 0.118 X 10^{11} N/C	
40	A TV tube contains two parallel plates 7.5 mm apart. If a potential difference of 150 V is maintained between them. What is the force on an electron in the gap between the plates? A. 3.2 X 10^{-15} N B. 3.2 X 10^{-20} N C. 20 N D. None of the above	
41	The dipole moment of a C=O bond is 2.70 D and the bond length is 0.122 nm. What is the effective charges on the two atoms (e represents the electronic charge)? A. 0.461 e B. 7.38 X 10^{-20} C C. 7.38 e D. Both (a) and (b)	

42	A geosynchronous satellite is one which A. Revolves around the earth in the same speed as that of the earth's revolution around the sun B. Revolves around the earth in the same speed as that of the earth's rotation around its axis C. Its period of revolution matches the period of revolution of the moon D. None of the above	
43	When sound waves travel from air to water, what happens? A. Their frequency changes, but velocity remains constant B. Their velocity changes, but frequency remains constant C. Both velocity and frequency change D. Both velocity and frequency remain unchanged	
44	The ear of some animals can distinguish ultrasonic sound waves, but not human ear. What is the frequency of ultrasonic sound waves? A. They have frequency lower than 10 milli Hz B. They have frequency lower than 10 kilo Hz C. They have frequency higher than 20 kilo Hz D. They have frequency higher than 20 milli Hz	
45	Which optical phenomenon is involved in formation of rainbow? A. Light scattering B. Light reflection C. Light refraction D. Diffraction of light	
46	Which of the following is a magnetic material? A. Carbon B. Cobalt C. Aluminium D. Manganese	
47	Newtonian mechanics failed to explain which concept? A. Motion of rocket B. Features of atomic phenomena C. Falling of objects on the ground D. Motion of planets	
48	What is the coefficient of performance of a refrigerator? Let Q_1 be the heat released to hot reservoir, Q_2 be the heat extracted from a cold reservoir & W be the work done on the refrigerator. A. Q_1/W B. Q_1/Q_2 C. Q_2/W D. Q_2/Q_1	

49	Consider the damped SHM of a spring mass system. If the time taken for the amplitude to become half is 'T', what is the time taken for mechanical energy to become half? A. T B. T/2 C. 2T D. T/4	
50	Which of the following is the mathematical representation of law of conservation of total linear momentum? A. $dP/dt = 0$ B. $dF/dt = 0$ C. $dP/dt = F_{internal}$ D. $dF/dt = P$	
51	The dissolution of a substance in a solvent is accompanied with A. Change in enthalpy B. Change in entropy C. Change in both a) and b) D. None	
52	Which has the maximum freezing point? A. 6 g CH_3COOH solution in 100 g water B. 6 g NaCl solution in 100 g water C. 6 g Urea solution in 100 g water D. All have equal freezing point	
53	Hardness of water is 200 ppm in presence of CaCO3. Molarity of CaCO3 is A. 2×10^{-3} M B. 1×10^{-3} M C. 2×10^{-2} M D. 2×10^{-4} M	
54	The rate constant of 1^{st} order reaction is 0.0693 min^{-1}. If we start with 20 mol/L, it is reduced to 2.5 mol/L in A. 40 min B. 30 min C. 20 min D. 10 min	
55	The unit of cell constant is_____ A. cm B. cm^{-1} C. cm^{-2} D. mol/L	
	Part C (Biology)	
56	When calyx and corolla are fused it is known as? A. Corolla B. Sepals C. Petals D. Perianth	

57	The oxidation state of Fe in Methemoglobin is A. +1 B. +2 C. +3 D. None of the above	
58	Which of the following cytoskeletal elements is not found in plants A. microtubules B. actin filaments C. intermediate filaments D. spindle fiber	
59	Islets of Langerhans are found in A. liver B. gall bladder C. small intestine D. pancreas	
60	Mycorrhizae are mutualistic associations between Fungi and A. Algae B. Bacteria C. Fungi D. Vascular plants	
61	Which of the following is a Sulphur containing amino acid? A. Proline B. Histidine C. Cysteine D. Glycine	
62	Which of the following glucose transporters is insulin-dependent? A. GLUT I B. GLUT II C. GLUT III D. GLUT IV	
63	Which one of the following phyla is correctly matched with its two general characteristics? A. Echinodermata- pentamerous radial symmetry and mostly internal fertilization B. Mollusca- normally oviparous and development through a trochophore or veliger larva C. Arthropoda- body divided into head, thorax and abdomen and respiration by tracheae D. Chordata- notochord at some stage and separate anal and urinary openings to the outside	

64	Mucus is secreted by which cells in the gastro-intestinal tract? A. Chief Cells B. Goblet cells C. Oxyntic cells D. Duodenal cells	
65	Which one of the following is an example of polygenic inheritance? A. skin colour in humans B. flower colour in Mirabilis jalapa C. production of male honey bee D. pod shape in garden pea	
66	Antibody present in tears is A. IgA B. IgG C. IgD D. IgM	
67	Test cross involves: A. crossing between two genotypes with dominant trait B. crossing between two genotypes with recessive trait C. crossing between two F1 hybrids D. crossing the F1 hybrid with a double recessive genotype	
68	Convergent evolution is illustrated by evolution of _____. A. rat and dog B. bacterium and protozoan C. starfish and cuttlefish D. dogfish and whale	
69	Which of the following techniques will be useful for tracing the origin of particular tribe? A. blood grouping. B. mitochondrial DNA analysis. C. DNA fingerprinting. D. karyotyping.	
70	Bacterial infection can be treated by an antibiotic that blocks protein synthesis. why it does not affect human cell? A. Human and bacterial ribosomes are different B. Antibiotic molecules can't enter human cells. C. Antibiotic gets degraded by human cell. D. different genetic code of human and bacteria.	
71	Which of the following is true for Golden rice? A. It is Vitamin A enriched, with a gene from daffodil B. It is pest resistant, with a gene from Bacillus thuringiensis C. It is drought tolerant, developed using Agrobacterium vector D. It has yellow grains, because of a gene introduced from a primitive variety of rice	

72	The upright pyramid of number is absent in _____. A. pond B. lake C. forest D. grassland	
73	A heterozygous colorblind woman marries a color blind man. What is the ratio of carrier daughters, color blind daughters, normal sons and color blind sons in F1 generation? A. 1:2:2:1 B. 1:1:1:1 C. 2:1:1:2 D. 1:1:2:2	
74	Full form of shRNA is A. Small helix Ribonucleic Acid B. Single hairpin Ribonucleic Acid C. Short hairpin Ribonucleic Acid D. Short Ribonucleic Acid	
75	Hormone Releasing Intrauterine Devices release A. synthetic form of the hormone Estrogen B. synthetic form of the hormone progesterone C. synthetic form of the hormone Prolactin D. synthetic form of the hormone Testosterone	
76	The glucose homeostasis is maintained in the body by A. Insulin B. Glucagon C. Insulin & Glucagon D. Somatostatin	
77	What is the site of perception of photoperiod necessary for induction of flowering in plants? A. Lateral buds B. Pulvinus C. Shoot apex D. Leaves	
78	Thermogenin is responsible for A. Uncoupling of oxidative phosphorylation B. Thermal insulation C. Shivering theromogenesis D. Glucose production	
79	Which of the following is NOT an RNA virus A. Hepatitis B virus B. SARS-CoV-2 C. Ebola Virus	

	D. Hepatitis C Virus	
80	Which of the following immune responses is responsible for rejection of kidney graft? A. Auto- immune response B. Humoral immune response C. Inflammatory immune response D. Cell-mediated immune response	
81	Which of the following is a polysaccharide of animal origin A. Pectin B. Cellulose C. Chitin D. Arabinoxylans	
82	At meta phase, chromosomes are attached to the spindle fibres by A. Satellites B. Centromere C. Kinetochore D. None of the above	
83	Hexokinase and Glucokinase are example of A. Apoenyzme B. Holoenzyme C. Co enzyme D. Isoenzyme	
84	Which of the following one is called molecule scissors? A. Ligases B. Restriction endonucleases C. Reverse transcriptase D. Exonucleases	
85	Which of the following hormone is released by the pineal gland? A. FSH B. Melatonin C. ACTH D. MSH	
86	Humoral immunity is mediated by A. T cells B. Dendritic cells C. Plasma cells	

	D. NK cells	
87	Zymogens of pancreatic juice are activated by A. Kinase B. Phosphatase C. Enterokinase D. Trypsinogen	
88	Which enzyme is used for lysis of plant cells during DNA isolation? A. Lysozyme B. Cellulase C. Chitinase D. Hydrolase	
89	Role of parathyroid hormone is to A. regulate thyroid hormone levels B. regulate body temperature C. regulate levels of iodine D. regulate levels of Calcium	
90	Which of the following is an autonomously replicating circular extra-chromosomal DNA, used for rDNA technology A. Callus B. Plasmid C. Protoplast D. Transposon	
91	Cell wall of cyanobacteria is mainly composed of A. Chitin B. Cellulose C. Chitosan D. Peptidoglycan	
92	Which of the following phase is dominant in bryophyte lifecycle? A. Gametophyte B. Sporophyte C. Pteridophyte D. Cryptophyte	
93	Chlorophyll b is found in A. land plants B. green algae C. cyanobacteria D. All of these	
94	Movement of food through the gastrointestinal tract is known A. mastication B. ejection C. emulsification D. peristalsis	
95	The chloroplast evolved from	

	A. Blue-green algae B. Brown algae C. Green algae D. Red algae	
96	NADPH is generated in which of the following pathway? A. Kreb's cycle B. Photosynthesis C. Glycolysis D. Urea cycle	
97	Which of the following characteristics is common in humans and adult frogs? A. Four-chambered heart B. internal fertilization C. nucleated RBCs D. ureotelic mode of excretion	
98	Which of the following is an X-Chromosome linked genetic disorder? A. sickle cell disease B. Hemophilia C. Thalassemia D. Leukemia	
99	A linear peptide is made up of 6 residues of an amino acid of molecular weight 120Da. The molecular weight of the peptide will be A. 618 B. 630 C. 600 D. 720	
100	Which of the following structures in Pheretima is correctly matched with its function? A. clitellum- secretes cocoon B. gizzard- absorbs digested food C. setae- defence against predators D. typhlosole- storage of extra nutrients	

5 year integrated M.Sc. in Cell and Molecular Biology

Entrance exam 8-7-2022

ANSWER KEY (SET-B)

Q. No.	ANSWER	Q. No.	ANSWER	Q. No.	ANSWER	Q. No.	ANSWER
1.	A	26.	C	51.	C	76.	C
2.	B	27.	C	52.	C	77.	D
3.	A	28.	A	53.	A	78.	A
4.	B	29.	D	54.	B	79.	A
5.	A	30.	B	55.	B	80.	D
6.	B	31.	A	56.	D	81.	C
7.	A	32.	B	57.	C	82.	C
8.	C	33.	C	58.	C	83.	D
9.	C	34.	B	59.	D	84.	B
10.	B	35.	C	60.	D	85.	B
11.	D	36.	D	61.	C	86.	C
12.	C	37.	C	62.	D	87.	C
13.	A	38.	A	63.	C	88.	B
14.	B	39.	B	64.	B	89.	D
15.	B	40.	A	65.	A	90.	B
16.	B	41.	D	66.	A	91.	D
17.	C	42.	B	67.	D	92.	A
18.	C	43.	B	68.	D	93.	D
19.	C	44.	C	69.	B	94.	D
20.	C	45.	C	70.	A	95.	A
21.	A	46.	B	71.	A	96.	B
22.	B	47.	B	72.	C	97.	D
23.	A	48.	C	73.	B	98.	B
24.	C	49.	B	74.	C	99.	B
25.	A	50.	A	75.	B	100.	A

C

Test Registration No. _____

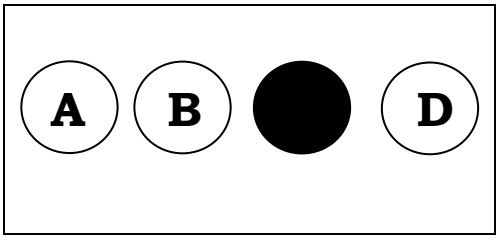
The Maharaja Sayajirao University of Baroda
Faculty of Science
M.Sc. ENTRANCE EXAMINATION

SUBJECT: Five Year Integrated M.Sc. in Cell & Molecular Biology
DAY: Friday DATE: 8th July 2022 TIME: 12:00 Pm to 1:30 pm

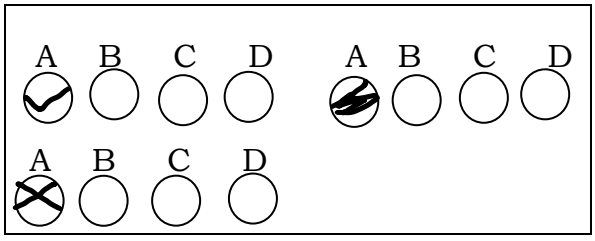
Important Instructions:

1. This test booklet is to be opened only when instructed by the invigilators to do so.
2. This booklet carries 100 questions on 14 printed pages. All questions carry equal marks.
3. For every correct answer, candidate will earn 1 mark, for every wrong answer 25% mark will be deducted.
4. **Test Registration Number** must be entered correctly in the OMR sheet, as advised by the invigilators. The **Question Booklet code (A, B, C, or D)** must also be mentioned on the OMR sheet (if not printed already) as instructed.
5. Answers must be marked in the OMR sheet using **a black or dark blue ball point pen only**. The circle should be filled in completely, leaving no gaps.
6. Gadgets (Mobile phones, pagers, ear phones, music players, calculators, smart watches etc.) are strictly prohibited in the exam hall. If any candidate is found in possession of any of these at his/her exam seat, he/she is liable to be disqualified.
7. In case of tie in the marks the merit will be considered based on total marks in qualifying examination.

Correct way of marking answer:



Incorrect way of marking answer:



Invigilator's signature_____

Five Year Integrated M.Sc. in Cell & Molecular Biology
Faculty of Science
The M. S. University of Baroda
Vadodara
Entrance Test - 2022

	Part-A	
	GENERAL APTITUDE &GENERAL KNOWLEDGE QUESTIONS	
No.	Questions	
1	Which of the following organization decides the REPO rate? A. Reserve Bank of India B. Securities Exchange Board of India C. Insurance Regulatory and Development Authority D. State Bank of India	
2	The size of SARS-CoV2 viral genome is approximately A. 22 kb B. 30 kb C. 50 kb D. 67 kb	
3	Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 5? A. 9/20 B. 8/15 C. 1/2 D. 3/5	
4	How many different salads can be made from carrot, tomato, onion, cucumber, and capsicum? A. 31 B. 126 C. 15 D. 625	
5	In how many ways you can rearrange word “SCIENCE”? A. 5040 B. 1260 C. 1060 D. 2520	
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	A. Brother B. Father C. Uncle D. Cousin	
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11	The 2022 International Booker Prize for translated fiction was recently awarded to Geetanjali Shree for her novel named, _____. A. Happy Stories B. Cursed Bunny C. Heaven D. Tomb of Sand	
12.	Which of the following countries borders Ukraine? A. Germany B. Czech Republic C. Slovakia D. Croatia	
13	Two candidates are selected randomly with replacements from the list containing 8 boys and 10 girls. What will be the probability of at most one girl being selected? A. 4/9 B. 36/81 C. 20/81 D. 5/9	
14	A, P, R, X, S, and Z are sitting in a row. S and Z are in the centre. A and P are at the ends. R is sitting to the left of A. Who is to the right of S? A. Z B. R C. A	

	D. P	
15.	From his house, Rohit went 15 km to the North. Then he turned to his left and covered 10 km. Then he turned south and covered 5 km. Finally, turning to his left, he covered 10 km. In which direction is he from his house? A. East B. North C. North-East D. South-West	
	Part B- CHEMISTRY and PHYSICS	
16	Which device is used to measure atmospheric pressure? A. Odometer B. Barometer C. Dynamometer D. Hydrometer	
17	A concave mirror is held in water. What should be the change in the focal length of the mirror? A. Halved B. Doubled C. Remains the same D. Increases exponentially	
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	B. 6 g NaCl solution in 100 g water C. 6 g Urea solution in 100 g water D. All have equal freezing point	
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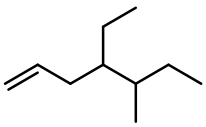
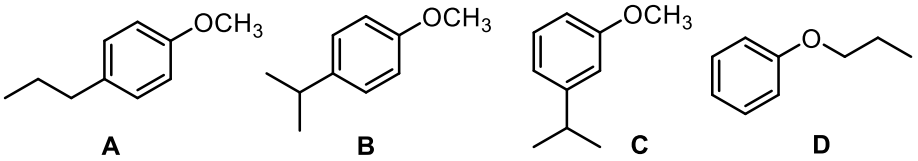
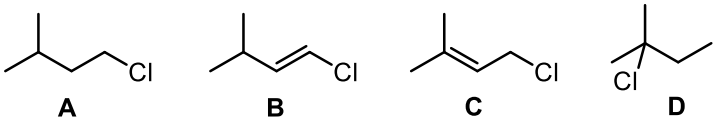
24	The rate constant of 1st order reaction is 0.0693 min^{-1}. If we start with 20 mol/L, it is reduced to 2.5 mol/L in A. 40 min B. 30 min C. 20 min D. 10 min	
25	The unit of cell constant is_____ A. cm B. cm^{-1} C. cm^{-2} D. mol/L	
26	Determine the hybridization of oxygen in CH_3OH A. sp B. sp^2 C. sp^3 D. sp^3d	
27	What is the electron configuration for Fe^{2+}? A. $4s^23d^6$ B. $4s^23d^4$ C. $4s^03d^6$ D. $4s^23d^8$	
28	Calculate the wavelength of an electron traveling with a speed of 2.65 x10^6 m/s. A. 2.7 X 10^{-10} m B. 2.7 X 10^{-8} m C. 2.9 X 10^{-21} m D. 2.9 X 10^{-19}m	
29	What is the correct IUPAC name of the following compound?  A. 3-Methyl-4-ethylhex-6-ene B. 2,3-Diethylhex-5-ene C. 4,5-Diethylhex-1-ene D. 4-Ethyl-5-methylhept-1-ene	

30	What major product is obtained when anisole (PhOMe) is treated with n-propylchloride and anhydrous $AlCl_3$?  A B C D	
31	Which of the following alkyl halides will undergo nucleophilic substitution reactions by S_N2 mechanism, when treated with aqueous NaOH?  A B C D	
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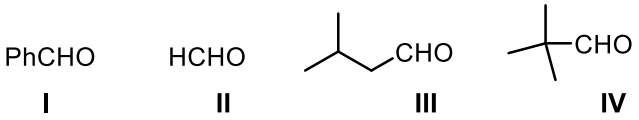
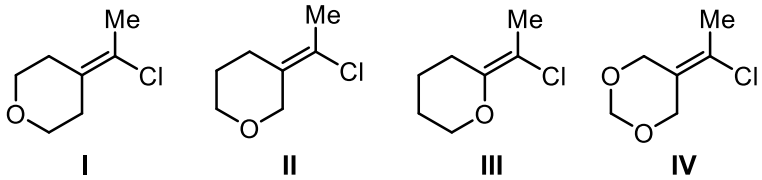
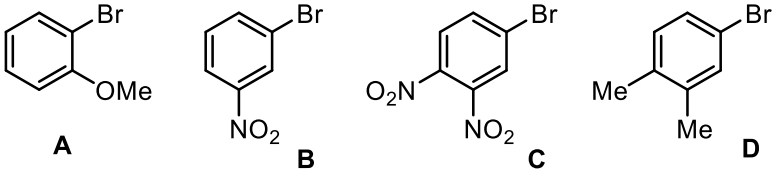
33	Which of the following compounds will produce sodium carboxylate and an alcohol, when treated with concentrated sodium hydroxide?  I II III IV A. I and II B. II and III C. I, II and IV D. I and IV	
34	Which of the following will show geometrical isomerism?  I II III IV A. I and II B. II and III C. Only III D. I and IV	
35	Which of the following halides will produce a phenolic compound most easily, when treated with NaOH?  A B C D	
36	Which of the following is the most suitable reagent used for converting ArN_2Cl to ArCl?	

	A. Conc. HCl B. Cu(0) + HCl C. $CuCl_2$ D. Cu_2Cl_2	
37	Which of the following is the most adequate reagent for conversion of acetophenone to ethyl benzene? A. $LiAlH_4$ B. $NaBH_4$ C. NH_2NH_2 in NaOH D. H_2, Pd-C (Catal.)	
38	A Na^+ ion and a Cl^- ion are separated from each other by 10 Å. In which medium will the electrostatic force between them be the highest? A. In vacuum B. In water with dielectric constant = 80 C. In polymer with dielectric constant = 210 D. Force will be the same in all the above media	
39	Three charges of –0.15*e* equidistant from the origin at a distance of 1.307 Å, arranged in an equilateral triangle in the *xy* plane. What is the electric field at the origin? A. 0.118 X 10^{-11} N/C B. 0 C. 0.118 X 10^{-29} N/C D. 0.118 X 10^{11} N/C	
40	A TV tube contains two parallel plates 7.5 mm apart. If a potential difference of 150 V is maintained between them. What is the force on an electron in the gap between the plates? A. 3.2 X 10^{-15} N B. 3.2 X 10^{-20} N C. 20 N D. None of the above	
41	The dipole moment of a C=O bond is 2.70 D and the bond length is 0.122 nm. What is the effective charges on the two atoms (e represents the electronic charge)? A. 0.461 e B. 7.38 X 10^{-20} C C. 7.38 e D. Both (a) and (b)	
42	A geosynchronous satellite is one which A. Revolves around the earth in the same speed as that of the earth's revolution around the sun B. Revolves around the earth in the same speed as that of the earth's rotation around its axis C. Its period of revolution matches the period of revolution of the moon D. None of the above	

43	When sound waves travel from air to water, what happens? A. Their frequency changes, but velocity remains constant B. Their velocity changes, but frequency remains constant C. Both velocity and frequency change D. Both velocity and frequency remain unchanged	
44	The ear of some animals can distinguish ultrasonic sound waves, but not human ear. What is the frequency of ultrasonic sound waves? A. They have frequency lower than 10 milli Hz B. They have frequency lower than 10 kilo Hz C. They have frequency higher than 20 kilo Hz D. They have frequency higher than 20 milli Hz	
45	Which optical phenomenon is involved in formation of rainbow? A. Light scattering B. Light reflection C. Light refraction D. Diffraction of light	
46	Which of the following is a magnetic material? A. Carbon B. Cobalt C. Aluminium D. Manganese	
47	Newtonian mechanics failed to explain which concept? A. Motion of rocket B. Features of atomic phenomena C. Falling of objects on the ground D. Motion of planets	
48	What is the coefficient of performance of a refrigerator? Let Q_1 be the heat released to hot reservoir, Q_2 be the heat extracted from a cold reservoir & W be the work done on the refrigerator. A. Q_1/W B. Q_1/Q_2 C. Q_2/W D. Q_2/Q_1	
49	Consider the damped SHM of a spring mass system. If the time taken for the amplitude to become half is 'T', what is the time taken for mechanical energy to become half? A. T B. T/2 C. 2T D. T/4	
50	Which of the following is the mathematical representation of law of conservation of total linear momentum?	

	A. dP/dt = 0 B. dF/dt = 0 C. dP/dt = $F_{internal}$ D. dF/dt = P	
51	Smoke generally has a blue tinge. This is due to A. Light Scattering B. Coagulation C. Brownian motion D. Electro-osmosis	
52	After the electrolysis of aqueous solution of NaCl using Pt electrodes, the pH of the solution will _____ A. Remain constant B. Increase C. Decrease D. Cannot be determined	
53	What is the coordination number of Cobalt in the $[Co(H_2O)_4\ (NO_3)_2]^{2-}$ and $[Co(CO)_2Cl_4]^{+}$, respectively? A. 6 and 6 B. 4 and 4 C. 2 and 1 D. 8 and 5	
54	Choose the correct decreasing order of the oxidation state of nitrogen from the following A. HNO_3, NH_3, NO, N_2 B. HNO_3, NO, NH_4Cl, N_2 C. HNO_3, NO, N_2, NH_3 D. NH_3, HNO_3, NO, N_2	
55	Which set of four quantum numbers corresponds to an electron in a 4p orbital? A. n = 4, l = 1, ml = 0, m_s = 1/2 B. n = 4, l = 3, ml = 3, m_s = -1/2 C. n = 4, l = 2, ml = 0, m_s = 1/2 D. n = 4, l = 4, ml = 3, m_s = -1/2	
	Part C (Biology)	
56	When calyx and corolla are fused it is known as? A. Corolla B. Sepals C. Petals D. Perianth	
57	The oxidation state of Fe in Methemoglobin is A. +1 B. +2 C. +3 D. None of the above	
58	Which of the following cytoskeletal elements is not found in plants A. microtubules B. actin filaments	

	C. intermediate filaments D. spindle fiber	
59	Islets of Langerhans are found in A. liver B. gall bladder C. small intestine D. pancreas	
60	Mycorrhizae are mutualistic associations between Fungi and A. Algae B. Bacteria C. Fungi D. Vascular plants	
61	NADPH is generated in which of the following pathway? A. Kreb's cycle B. Photosynthesis C. Glycolysis D. Urea cycle	
62	Which of the following characteristics is common in humans and adult frogs? A. Four-chambered heart B. internal fertilization C. nucleated RBCs D. ureotelic mode of excretion	
63	Which of the following is an X-Chromosome linked genetic disorder? A. sickle cell disease B. Hemophilia C. Thalassemia D. Leukemia	
64	A linear peptide is made up of 6 residues of an amino acid of molecular weight 120Da. The molecular weight of the peptide will be A. 618 B. 630 C. 600 D. 720	
65	Which of the following structures in Pheretima is correctly matched with its function? A. clitellum- secretes cocoon B. gizzard- absorbs digested food C. setae- defence against predators D. typhlosole- storage of extra nutrients	
66	Antibody present in tears is A. IgA B. IgG C. IgD D. IgM	
67	Test cross involves:	

	A. crossing between two genotypes with dominant trait B. crossing between two genotypes with recessive trait C. crossing between two F1 hybrids D. crossing the F1 hybrid with a double recessive genotype	
68	Convergent evolution is illustrated by evolution of _____. A. rat and dog B. bacterium and protozoan C. starfish and cuttlefish D. dogfish and whale	
69	Which of the following techniques will be useful for tracing the origin of particular tribe? A. blood grouping. B. mitochondrial DNA analysis. C. DNA fingerprinting. D. karyotyping.	
70	Bacterial infection can be treated by an antibiotic that blocks protein synthesis. why it does not affect human cell? A. Human and bacterial ribosomes are different B. Antibiotic molecules can't enter human cells. C. Antibiotic gets degraded by human cell. D. different genetic code of human and bacteria.	
71	Which of the following is true for Golden rice? A. It is Vitamin A enriched, with a gene from daffodil B. It is pest resistant, with a gene from Bacillus thuringiensis C. It is drought tolerant, developed using Agrobacterium vector D. It has yellow grains, because of a gene introduced from a primitive variety of rice	
72	The upright pyramid of number is absent in _____. A. pond B. lake C. forest D. grassland	
73	A heterozygous colorblind woman marries a color blind man. What is the ratio of carrier daughters, color blind daughters, normal sons and color blind sons in F1 generation? A. 1:2:2:1 B. 1:1:1:1 C. 2:1:1:2 D. 1:1:2:2	
74	Full form of shRNA is A. Small helix Ribonucleic Acid B. Single hairpin Ribonucleic Acid C. Short hairpin Ribonucleic Acid D. Short Ribonucleic Acid	
75	Hormone Releasing Intrauterine Devices release	

	A. synthetic form of the hormone Estrogen B. synthetic form of the hormone progesterone C. synthetic form of the hormone Prolactin D. synthetic form of the hormone Testosterone	
76	The glucose homeostasis is maintained in the body by A. Insulin B. Glucagon C. Insulin & Glucagon D. Somatostatin	
77	What is the site of perception of photoperiod necessary for induction of flowering in plants? A. Lateral buds B. Pulvinus C. Shoot apex D. Leaves	
78	Thermogenin is responsible for A. Uncoupling of oxidative phosphorylation B. Thermal insulation C. Shivering theromogenesis D. Glucose production	
79	Which of the following is NOT an RNA virus A. Hepatitis B virus B. SARS-CoV-2 C. Ebola Virus D. Hepatitis C Virus	
80	Which of the following immune responses is responsible for rejection of kidney graft? A. Auto- immune response B. Humoral immune response C. Inflammatory immune response D. Cell-mediated immune response	
81	Which of the following is a polysaccharide of animal origin A. Pectin B. Cellulose C. Chitin D. Arabinoxylans	
82	At meta phase, chromosomes are attached to the spindle fibres by A. Satellites B. Centromere	

	C. Kinetochore D. None of the above	
83	Hexokinase and Glucokinase are example of A. Apoenyzme B. Holoenzyme C. Co enzyme D. Isoenzyme	
84	Which of the following one is called molecule scissors? A. Ligases B. Restriction endonucleases C. Reverse transcriptase D. Exonucleases	
85	Which of the following hormone is released by the pineal gland? A. FSH B. Melatonin C. ACTH D. MSH	
86	Humoral immunity is mediated by A. T cells B. Dendritic cells C. Plasma cells D. NK cells	
87	Zymogens of pancreatic juice are activated by A. Kinase B. Phosphatase C. Enterokinase D. Trypsinogen	
88	Which enzyme is used for lysis of plant cells during DNA isolation? A. Lysozyme B. Cellulase C. Chitinase D. Hydrolase	
89	Role of parathyroid hormone is to A. regulate thyroid hormone levels B. regulate body temperature C. regulate levels of iodine D. regulate levels of Calcium	

90	Which of the following is an autonomously replicating circular extra-chromosomal DNA, used for rDNA technology A. Callus B. Plasmid C. Protoplast D. Transposon	
91	Cell wall of cyanobacteria is mainly composed of A. Chitin B. Cellulose C. Chitosan D. Peptidoglycan	
92	Which of the following phase is dominant in bryophyte lifecycle? A. Gametophyte B. Sporophyte C. Pteridophyte D. Cryptophyte	
93	Chlorophyll b is found in A. land plants B. green algae C. cyanobacteria D. All of these	
94	Movement of food through the gastrointestinal tract is known A. mastication B. ejection C. emulsification D. peristalsis	
95	The chloroplast evolved from A. Blue-green algae B. Brown algae C. Green algae D. Red algae	
96	Which of the following is a Sulphur containing amino acid? A. Proline B. Histidine C. Cysteine D. Glycine	
97	Which of the following glucose transporters is insulin-dependent? A. GLUT I B. GLUT II C. GLUT III D. GLUT IV	
98	Which one of the following phyla is correctly matched with its two general characteristics?	

	A. Echinodermata- pentamerous radial symmetry and mostly internal fertilization B. Mollusca- normally oviparous and development through a trochophore or veliger larva C. Arthropoda- body divided into head, thorax and abdomen and respiration by tracheae D. Chordata- notochord at some stage and separate anal and urinary openings to the outside	
99	Mucus is secreted by which cells in the gastro-intestinal tract? A. Chief Cells B. Goblet cells C. Oxyntic cells D. Duodenal cells	
100	Which one of the following is an example of polygenic inheritance? A. skin colour in humans B. flower colour in Mirabilis jalapa C. production of male honey bee D. pod shape in garden pea	

5 year integrated M.Sc. in Cell and Molecular Biology

Entrance exam 8-7-2022

ANSWER KEY (SET-C)

Q. No.	ANSWER	Q. No.	ANSWER	Q. No.	ANSWER	Q. No.	ANSWER
1.	A	26.	C	51.	A	76.	C
2.	B	27.	C	52.	B	77.	D
3.	A	28.	A	53.	A	78.	A
4.	A	29.	D	54.	C	79.	A
5.	B	30.	B	55.	A	80.	D
6.	B	31.	A	56.	D	81.	C
7.	A	32.	B	57.	C	82.	C
8.	C	33.	C	58.	C	83.	D
9.	C	34.	B	59.	D	84.	B
10.	B	35.	C	60.	D	85.	B
11.	D	36.	D	61.	B	86.	C
12.	C	37.	C	62.	D	87.	C
13.	B	38.	A	63.	B	88.	B
14.	A	39.	B	64.	B	89.	D
15.	B	40.	A	65.	A	90.	B
16.	B	41.	D	66.	A	91.	D
17.	C	42.	B	67.	D	92.	A
18.	C	43.	B	68.	D	93.	D
19.	C	44.	C	69.	B	94.	D
20.	C	45.	C	70.	A	95.	A
21.	C	46.	B	71.	A	96.	C
22.	C	47.	B	72.	C	97.	D
23.	A	48.	C	73.	B	98.	C
24.	B	49.	B	74.	C	99.	B
25.	B	50.	A	75.	B	100.	A

D

Test Registration No. _____

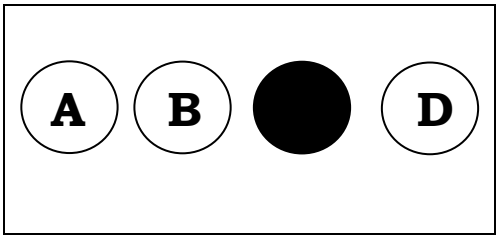
The Maharaja Sayajirao University of Baroda
Faculty of Science
M.Sc. ENTRANCE EXAMINATION

SUBJECT: Five Year Integrated M.Sc. in Cell & Molecular Biology
DAY: Friday DATE: 8th July 2022 TIME: 12:00 Pm to 1:30 pm

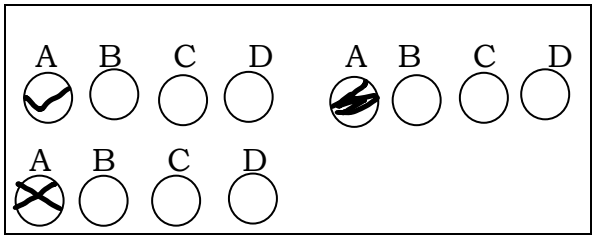
Important Instructions:

1. This test booklet is to be opened only when instructed by the invigilators to do so.
2. This booklet carries 100 questions on 14 printed pages. All questions carry equal marks.
3. For every correct answer, candidate will earn 1 mark, for every wrong answer 25% mark will be deducted.
4. **Test Registration Number** must be entered correctly in the OMR sheet, as advised by the invigilators. The **Question Booklet code (A, B, C, or D)** must also be mentioned on the OMR sheet (if not printed already) as instructed.
5. Answers must be marked in the OMR sheet using **a black or dark blue ball point pen only**. The circle should be filled in completely, leaving no gaps.
6. Gadgets (Mobile phones, pagers, ear phones, music players, calculators, smart watches etc.) are strictly prohibited in the exam hall. If any candidate is found in possession of any of these at his/her exam seat, he/she is liable to be disqualified.
7. In case of tie in the marks the merit will be considered based on total marks in qualifying examination.

Correct way of marking answer:



Incorrect way of marking answer:



Invigilator's signature_____

Five Year Integrated M.Sc. in Cell & Molecular Biology
Faculty of Science
The M. S. University of Baroda
Vadodara
Entrance Test - 2022

	Part-A	
	GENERAL APTITUDE &GENERAL KNOWLEDGE QUESTIONS	
No.	Questions	
1	Two numbers are respectively 20% and 50% more than a third number. The ratio of the two numbers is: A. 2:5 B. 3:5 C. 4:5 D. 5:4	
2	Which was the biggest aircraft that was recently damaged in Ukraine Russia war? A. Boeing 747 Dreamlifter B. Aero Spaceline's Super Guppy C. Antonov An-225 Mriya D. Lockheed C-5 Galaxy	
3	The military operation which annexed Hyderabad into the Indian Union was code named as A. Operation Vijay B. Operation Polo C. Operation Meghdoot D. Operation Virat	
4	The 2022 International Booker Prize for translated fiction was recently awarded to Geetanjali Shree for her novel named, _____. A. Happy Stories B. Cursed Bunny C. Heaven D. Tomb of Sand	
5	Which of the following countries borders Ukraine? A. Germany B. Czech Republic C. Slovakia D. Croatia	
6	Which of the following organization decides the REPO rate? A. Reserve Bank of India B. Securities Exchange Board of India C. Insurance Regulatory and Development Authority	

	D. State Bank of India	
7	The size of SARS-CoV2 viral genome is approximately A. 22 kb B. 30 kb C. 50 kb D. 67 kb	
8	How many different salads can be made from carrot, tomato, onion, cucumber, and capsicum? A. 31 B. 126 C. 15 D. 625	
9	In how many ways you can rearrange word "SCIENCE"? A. 5040 B. 1260 C. 1060 D. 2520	
10	India has won which of the following cup in sports? A. Uber Cup B. Thomas Cup C. Davis Cup D. FIFA world cup	
11	Two candidates are selected randomly with replacements from the list containing 8 boys and 10 girls. What will be the probability of at most one girl being selected? A. 4/9 B. 36/81 C. 20/81 D. 5/9	
12.	A, P, R, X, S, and Z are sitting in a row. S and Z are in the centre. A and P are at the ends. R is sitting to the left of A. Who is to the right of S? A. Z B. R C. A D. P	
13	From his house, Rohit went 15 km to the North. Then he turned to his left and covered 10 km. Then he turned south and covered 5 km. Finally, turning to his left, he covered 10 km. In which direction is he from his house? A. East B. North C. North-East D. South-West	

14	"He is the son of the only son of my grandfather," Lauren says, pointing to a photograph. How is the man in the picture related to Lauren? A. Brother B. Father C. Uncle D. Cousin	
15.	Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 5? A. 9/20 B. 8/15 C. 1/2 D. 3/5	
	Part B- CHEMISTRY and PHYSICS	
16	Determine the hybridization of oxygen in CH_3OH A. sp B. sp^2 C. sp^3 D. sp^3d	
17	What is the electron configuration for Fe^{2+}? A. $4s^23d^6$ B. $4s^23d^4$ C. $4s^03d^6$ D. $4s^23d^8$	
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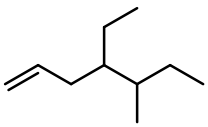
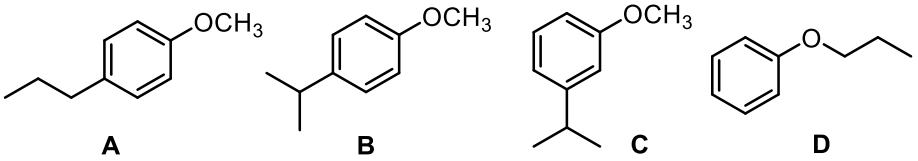
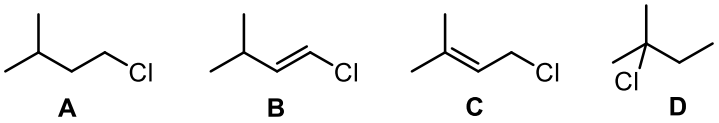
19	What is the correct IUPAC name of the following compound?  A. 3-Methyl-4-ethylhex-6-ene B. 2,3-Diethylhex-5-ene C. 4,5-Diethylhex-1-ene D. 4-Ethyl-5-methylhept-1-ene	
20	What major product is obtained when anisole (PhOMe) is treated with n-propylchloride and anhydrous $AlCl_3$?  	

21	Which of the following alkyl halides will undergo nucleophilic substitution reactions by S_N2 mechanism, when treated with aqueous NaOH?  A B C D	
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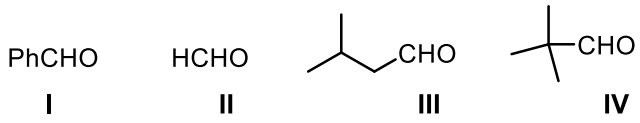
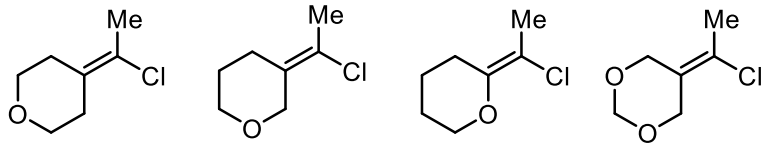
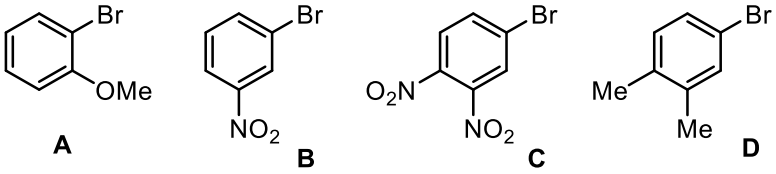
23	Which of the following compounds will produce sodium carboxylate and an alcohol, when treated with concentrated sodium hydroxide?  I II III IV A. I and II B. II and III C. I, II and IV D. I and IV	
24	Which of the following will show geometrical isomerism?  I II III IV A. I and II B. II and III C. Only III D. I and IV	
25	Which of the following halides will produce a phenolic compound most easily, when treated with NaOH?  A B C D	
26	The dissolution of a substance in a solvent is accompanied with A. Change in enthalpy B. Change in entropy C. Change in both a) and b) D. None	
27	Which has the maximum freezing point? A. 6 g CH_3COOH solution in 100 g water B. 6 g NaCl solution in 100 g water C. 6 g Urea solution in 100 g water	

	D. All have equal freezing point	
28	Hardness of water is 200 ppm in presence of CaCO3. Molarity of CaCO3 is A. 2×10^{-3} M B. 1×10^{-3} M C. 2×10^{-2} M D. 2×10^{-4} M	
29	The rate constant of 1^{st} order reaction is 0.0693 min^{-1}. If we start with 20 mol/L, it is reduced to 2.5 mol/L in A. 40 min B. 30 min C. 20 min D. 10 min	
30	The unit of cell constant is_____ A. cm B. cm^{-1} C. cm^{-2} D. mol/L	
31	Smoke generally has a blue tinge. This is due to A. Light Scattering B. Coagulation C. Brownian motion D. Electro-osmosis	
32	After the electrolysis of aqueous solution of NaCl using Pt electrodes, the pH of the solution will _____ A. Remain constant B. Increase C. Decrease D. Cannot be determined	
33	What is the coordination number of Cobalt in the $[Co(H_2O)_4 (NO_3)_2]^{2-}$ and $[Co(CO)_2Cl_4]^{+}$, respectively? A. 6 and 6 B. 4 and 4 C. 2 and 1 D. 8 and 5	
34	Choose the correct decreasing order of the oxidation state of nitrogen from the following A. HNO_3, NH_3, NO, N_2 B. HNO_3, NO, NH_4Cl, N_2 C. HNO_3, NO, N_2, NH_3 D. NH_3, HNO_3, NO, N_2	
35	Which set of four quantum numbers corresponds to an electron in a 4p orbital? A. n = 4, l = 1, ml = 0, m_s = 1/2 B. n = 4, l = 3, ml = 3, m_s = -1/2 C. n = 4, l = 2, ml = 0, m_s = 1/2 D. n = 4, l = 4, ml = 3, m_s = -1/2	

36	Which of the following is the most suitable reagent used for converting ArN_2Cl to ArCl? A. Conc. HCl B. Cu(0) + HCl C. $CuCl_2$ D. Cu_2Cl_2	
37	Which of the following is the most adequate reagent for conversion of acetophenone to ethyl benzene? A. $LiAlH_4$ B. $NaBH_4$ C. NH_2NH_2 in NaOH D. H_2, Pd-C (Catal.)	
38	A Na^+ ion and a Cl^- ion are separated from each other by 10 Å. In which medium will the electrostatic force between them be the highest? A. In vacuum B. In water with dielectric constant = 80 C. In polymer with dielectric constant = 210 D. Force will be the same in all the above media	
39	Three charges of –0.15*e* equidistant from the origin at a distance of 1.307 Å, arranged in an equilateral triangle in the *xy* plane. What is the electric field at the origin? A. 0.118×10^{-11} N/C B. 0 C. 0.118×10^{-29} N/C D. 0.118×10^{11} N/C	
40	A TV tube contains two parallel plates 7.5 mm apart. If a potential difference of 150 V is maintained between them. What is the force on an electron in the gap between the plates? A. 3.2×10^{-15} N B. 3.2×10^{-20} N C. 20 N D. None of the above	
41	The dipole moment of a C=O bond is 2.70 D and the bond length is 0.122 nm. What is the effective charges on the two atoms (e represents the electronic charge)? A. 0.461 e B. 7.38×10^{-20} C C. 7.38 e D. Both (a) and (b)	
42	A geosynchronous satellite is one which A. Revolves around the earth in the same speed as that of the earth's revolution around the sun B. Revolves around the earth in the same speed as that of the earth's rotation around its axis	

	C. Its period of revolution matches the period of revolution of the moon D. None of the above	
43	When sound waves travel from air to water, what happens? A. Their frequency changes, but velocity remains constant B. Their velocity changes, but frequency remains constant C. Both velocity and frequency change D. Both velocity and frequency remain unchanged	
44	The ear of some animals can distinguish ultrasonic sound waves, but not human ear. What is the frequency of ultrasonic sound waves? A. They have frequency lower than 10 milli Hz B. They have frequency lower than 10 kilo Hz C. They have frequency higher than 20 kilo Hz D. They have frequency higher than 20 milli Hz	
45	Which optical phenomenon is involved in formation of rainbow? A. Light scattering B. Light reflection C. Light refraction D. Diffraction of light	
46	Which of the following is a magnetic material? A. Carbon B. Cobalt C. Aluminium D. Manganese	
47	Newtonian mechanics failed to explain which concept? A. Motion of rocket B. Features of atomic phenomena C. Falling of objects on the ground D. Motion of planets	
48	What is the coefficient of performance of a refrigerator? Let Q_1 be the heat released to hot reservoir, Q_2 be the heat extracted from a cold reservoir & W be the work done on the refrigerator. A. Q_1/W B. Q_1/Q_2 C. Q_2/W D. Q_2/Q_1	
49	Consider the damped SHM of a spring mass system. If the time taken for the amplitude to become half is 'T', what is the time taken for mechanical energy to become half? A. T B. T/2 C. 2T D. T/4	

50	Which of the following is the mathematical representation of law of conservation of total linear momentum? A. dP/dt = 0 B. dF/dt = 0 C. $dP/dt = F_{internal}$ D. dF/dt = P	
51	Which device is used to measure atmospheric pressure? A. Odometer B. Barometer C. Dynamometer D. Hydrometer	
52	A concave mirror is held in water. What should be the change in the focal length of the mirror? A. Halved B. Doubled C. Remains the same D. Increases exponentially	
53	Which of the following causes refraction of light? A. Change in the density of light from one medium to another B. Change in viscosity of light from one medium to another C. Change in the speed of light from one medium to another D. Change in direction of light from one medium to another	
54	Two beams, one of red light and the other of blue light, of the same intensity are incident on a metallic surface to emit photoelectrons. Which emits electrons of greater frequency? A. Both B. Red light C. Blue light D. Neither	
55	Electric field inside a hollow conducting sphere _____ A. Increases with distance from the center of the sphere B. Decreases with distance from the center of the sphere C. is zero D. May increase or decrease with distance from the center	
	Part C (Biology)	
56	Humoral immunity is mediated by A. T cells B. Dendritic cells C. Plasma cells D. NK cells	
57	Zymogens of pancreatic juice are activated by A. Kinase	

	B. Phosphatase C. Enterokinase D. Trypsinogen	
58	Which enzyme is used for lysis of plant cells during DNA isolation? A. Lysozyme B. Cellulase C. Chitinase D. Hydrolase	
59	Role of parathyroid hormone is to A. regulate thyroid hormone levels B. regulate body temperature C. regulate levels of iodine D. regulate levels of Calcium	
60	Which of the following is an autonomously replicating circular extra-chromosomal DNA, used for rDNA technology A. Callus B. Plasmid C. Protoplast D. Transposon	
61	Cell wall of cyanobacteria is mainly composed of A. Chitin B. Cellulose C. Chitosan D. Peptidoglycan	
62	Which of the following phase is dominant in bryophyte lifecycle? A. Gametophyte B. Sporophyte C. Pteridophyte D. Cryptophyte	
63	Chlorophyll b is found in A. land plants B. green algae C. cyanobacteria D. All of these	
64	Movement of food through the gastrointestinal tract is known A. mastication B. ejection C. emulsification D. peristalsis	
65	The chloroplast evolved from A. Blue-green algae B. Brown algae C. Green algae D. Red algae	

66	When calyx and corolla are fused it is known as? A. Corolla B. Sepals C. Petals D. Perianth	
67	The oxidation state of Fe in Methemoglobin is A. +1 B. +2 C. +3 D. None of the above	
68	Which of the following cytoskeletal elements is not found in plants A. microtubules B. actin filaments C. intermediate filaments D. spindle fiber	
69	Islets of Langerhans are found in A. liver B. gall bladder C. small intestine D. pancreas	
70	Mycorrhizae are mutualistic associations between Fungi and A. Algae B. Bacteria C. Fungi D. Vascular plants	
71	Which of the following is true for Golden rice? A. It is Vitamin A enriched, with a gene from daffodil B. It is pest resistant, with a gene from Bacillus thuringiensis C. It is drought tolerant, developed using Agrobacterium vector D. It has yellow grains, because of a gene introduced from a primitive variety of rice	
72	The upright pyramid of number is absent in _____. A. pond B. lake C. forest D. grassland	
73	A heterozygous colorblind woman marries a color blind man. What is the ratio of carrier daughters, color blind daughters, normal sons and color blind sons in F1 generation? A. 1:2:2:1 B. 1:1:1:1 C. 2:1:1:2 D. 1:1:2:2	
74	Full form of shRNA is A. Small helix Ribonucleic Acid	

	B. Single hairpin Ribonucleic Acid C. Short hairpin Ribonucleic Acid D. Short Ribonucleic Acid	
75	Hormone Releasing Intrauterine Devices release A. synthetic form of the hormone Estrogen B. synthetic form of the hormone progesterone C. synthetic form of the hormone Prolactin D. synthetic form of the hormone Testosterone	
76	The glucose homeostasis is maintained in the body by A. Insulin B. Glucagon C. Insulin & Glucagon D. Somatostatin	
77	What is the site of perception of photoperiod necessary for induction of flowering in plants? A. Lateral buds B. Pulvinus C. Shoot apex D. Leaves	
78	Thermogenin is responsible for A. Uncoupling of oxidative phosphorylation B. Thermal insulation C. Shivering theromogenesis D. Glucose production	
79	Which of the following is NOT an RNA virus A. Hepatitis B virus B. SARS-CoV-2 C. Ebola Virus D. Hepatitis C Virus	
80	Which of the following immune responses is responsible for rejection of kidney graft? A. Auto- immune response B. Humoral immune response C. Inflammatory immune response D. Cell-mediated immune response	
81	Which of the following is a polysaccharide of animal origin A. Pectin B. Cellulose C. Chitin	

	D. Arabinoxylans	
82	At meta phase, chromosomes are attached to the spindle fibres by A. Satellites B. Centromere C. Kinetochore D. None of the above	
83	Hexokinase and Glucokinase are example of A. Apoenyzme B. Holoenzyme C. Co enzyme D. Isoenzyme	
84	Which of the following one is called molecule scissors? A. Ligases B. Restriction endonucleases C. Reverse transcriptase D. Exonucleases	
85	Which of the following hormone is released by the pineal gland? A. FSH B. Melatonin C. ACTH D. MSH	
86	NADPH is generated in which of the following pathway? A. Kreb's cycle B. Photosynthesis C. Glycolysis D. Urea cycle	
87	Which of the following characteristics is common in humans and adult frogs? A. Four-chambered heart B. internal fertilization C. nucleated RBCs D. ureotelic mode of excretion	
88	Which of the following is an X-Chromosome linked genetic disorder? A. sickle cell disease B. Hemophilia C. Thalassemia D. Leukemia	
89	A linear peptide is made up of 6 residues of an amino acid of molecular weight 120Da. The molecular weight of the peptide will be A. 618	

	B. 630 C. 600 D. 720	
90	Which of the following structures in Pheretima is correctly matched with its function? A. clitellum- secretes cocoon B. gizzard- absorbs digested food C. setae- defence against predators D. typhlosole- storage of extra nutrients	
91	Which of the following is a Sulphur containing amino acid? A. Proline B. Histidine C. Cysteine D. Glycine	
92	Which of the following glucose transporters is insulin-dependent? A. GLUT I B. GLUT II C. GLUT III D. GLUT IV	
93	Which one of the following phyla is correctly matched with its two general characteristics? A. Echinodermata- pentamerous radial symmetry and mostly internal fertilization B. Mollusca- normally oviparous and development through a trochophore or veliger larva C. Arthropoda- body divided into head, thorax and abdomen and respiration by tracheae D. Chordata- notochord at some stage and separate anal and urinary openings to the outside	
94	Mucus is secreted by which cells in the gastro-intestinal tract? A. Chief Cells B. Goblet cells C. Oxyntic cells D. Duodenal cells	
95	Which one of the following is an example of polygenic inheritance? A. skin colour in humans B. flower colour in Mirabilis jalapa C. production of male honey bee D. pod shape in garden pea	

96	Antibody present in tears is A. IgA B. IgG C. IgD D. IgM	
97	Test cross involves: A. crossing between two genotypes with dominant trait B. crossing between two genotypes with recessive trait C. crossing between two F1 hybrids D. crossing the F1 hybrid with a double recessive genotype	
98	Convergent evolution is illustrated by evolution of _____. A. rat and dog B. bacterium and protozoan C. starfish and cuttlefish D. dogfish and whale	
99	Which of the following techniques will be useful for tracing the origin of particular tribe? A. blood grouping. B. mitochondrial DNA analysis. C. DNA fingerprinting. D. karyotyping.	
100	Bacterial infection can be treated by an antibiotic that blocks protein synthesis. why it does not affect human cell? A. Human and bacterial ribosomes are different B. Antibiotic molecules can't enter human cells. C. Antibiotic gets degraded by human cell. D. different genetic code of human and bacteria.	

5 year integrated M.Sc. in Cell and Molecular Biology

Entrance Exam 8-7-2022

ANSWER KEY (SET-D)

Q. No.	ANSWER	Q. No.	ANSWER	Q. No.	ANSWER	Q. No.	ANSWER
1.	C	26.	C	51.	B	76.	C
2.	C	27.	C	52.	C	77.	D
3.	B	28.	A	53.	C	78.	A
4.	D	29.	B	54.	C	79.	A
5.	C	30.	B	55.	C	80.	D
6.	A	31.	A	56.	C	81.	C
7.	B	32.	B	57.	C	82.	C
8.	A	33.	A	58.	B	83.	D
9.	B	34.	C	59.	D	84.	B
10.	B	35.	A	60.	B	85.	B
11.	B	36.	D	61.	D	86.	B
12.	A	37.	C	62.	A	87.	D
13.	B	38.	A	63.	D	88.	B
14.	A	39.	C	64.	D	89.	B
15.	A	40.	A	65.	A	90.	A
16.	C	41.	D	66.	D	91.	C
17.	C	42.	B	67.	C	92.	D
18.	A	43.	B	68.	C	93.	C
19.	D	44.	C	69.	D	94.	B
20.	B	45.	C	70.	D	95.	A
21.	A	46.	B	71.	A	96.	A
22.	B	47.	B	72.	C	97.	D
23.	C	48.	C	73.	B	98.	D
24.	B	49.	B	74.	C	99.	B
25.	C	50.	A	75.	B	100.	A