

ADMISSION CUM SCHOLARSHIP TEST

SAMPLE TEST PAPER

(For Students Going to Class 12TH IN 2022)

STREAM : MEDICAL | **COURSE OFFERED** : MEDICAL COUNTDOWN

Time : 2 hours

Maximum Marks: 240

		INSTRUCTIONS			
OR.	(A)	General :			
FRUCTIONS FROM THE INVIGILA	1.	This Question paper contains THREE parts (Physics, Chemistry and Biology).			
	2.	This Question Paper contains 14 pages, other than the OMR.			
	3.	This Question Paper contains total 60 questions, 20 questions each in Physics, Chemistry and Biology .			
	4.	The Question Paper has blank spaces at the bottom of each page for rough work.No additional sheets will be provided for rough work.			
	5.	Blank papers, clip boards, log tables, slide rule, calculators, cellular phones, pagers and electronic gadgets, in any form, are NOT allowed.			
NSTI	6.	This booklet also contains the OMR answer sheet (i.e., A machine gradable Response Sheet).			
ON THIS BOOKLET, AWAIT I	(B)	Answering on the OMR:	V		
	7.	Each question will have 4 choices in both the Sections, out of which only one choice is correct .			
	8.	Fill the bubble with Ball Pen (Blue or Black) ONLY.			
	(C)	Filling – Name and Registration No.	S		
	9.	On the OMR sheet , write your Name and Registration No. using ball pen. Also, put your signature in the appropriate box using ball pen.			
TS 0	(D)	Marking Scheme:			
HE SEAL	9.	(a) For each question, you will be awarded 4 marks if you have darkened only one bubble corresponding to the right answer.			
ΝТΙ		(b) In case you have not darkened any bubble, you will be awarded 0 mark for that question.			
SRE/		(c) In all other cases, you will be awarded –1 mark .			
DO NOT B	Nam	e :			
	Reg	gistration No.:			

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SAMPLE PAPER (Medical Count Down)

14. Two spheres each of mass M and radius R/2 are connected with a massless rod of length R as shown in the figure. The moment of inertia of the system about an axis passing through the centre of one of the spheres and perpendicular to the rod is



(A)
$$\frac{21}{5}$$
MR² (B) $\frac{2}{5}$ MR² (C) $\frac{5}{2}$ MR² (D) $\frac{5}{21}$ MR²

15. Two water pipes of diameters 2 cm and 4 cm are connected with the main supply line in sereis. The velocity of flow of water in the pipe of 2 cm diameter is

(A) 4 times that in the other pipe (B) $\frac{1}{4}$ times that in the other pipe (C) 2 times that in the other pipe (D) $\frac{1}{2}$ times that in the other pipe

16. Work done in splitting a drop of water of 1 mm radius into 64 droplets is (Surface tension of water is $72 \times 10^{-3} \text{ J/m}^2$)

 $(A) \ 2.0 \times 10^{-6} \ J \qquad (B) \ 2.7 \times 10^{-6} \ J \qquad (C) \ 4 \times 10^{-6} \ J \qquad (D) \ 5.4 \times 10^{-6} \ J$

Space for rough work



[5]

[6]			SAM	PLE PAPER (Medical Count Down)			
17.	On a smooth inclined plane a body of mass <i>M</i> is attached between two springs. The other ends of the springs are fixed to firm supports. If each spring has a force constant <i>k</i> , the period of accillation of the body is (accuming the spring of page).						
	of oscillation of the body is (assuming the spring as massless)						
			ų,				
			k f k				
			1 Con				
		k s	MY				
		1 Color					
		<u>М ө</u>					
	(A) $2\pi\sqrt{\frac{M}{2k}}$	(B) $2\pi\sqrt{\frac{2M}{k}}$	(C) $2\pi \sqrt{\frac{M\sin\theta}{2k}}$	(D) $2\pi \sqrt{\frac{2M\sin\theta}{k}}$			
18.	A whistle giving o heard by the obs	ut 450 Hz, approaches a erver in Hz is (speed of	stationary observer at a sp sound = 330 m/s)	beed of 33 m/s. The frequency			
	(A) 409	(B) 429	(C) 517	(D) 500			
19.	If the temperatu ratio of the radia	re of the sun is increase int energy received on e	ed from <i>T</i> to 2 <i>T</i> and its ra earth to what it was previo	adius from <i>R</i> to 2 <i>R</i> , then the ously will be			
	(A) 4	(B) 16	(C) 32	(D) 64			
20.	D. The root mean square velocity of the gas molecules is 300 m/s. What will be the root mean square speed of the molecules if the atomic weight is double and absolute temperature is halved?						
	(A) 300 m/s	(B) 150 m/s	(C) 600 m/s	(D) 75 m/s			
	Space for rough work						



of XeF ₆ can yield a maximum (D) 245 to produce 11.2 litre oxygen at (D) $\frac{2}{3}$ mol of chlorine atom is						
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to produce 11.2 litre oxygen at (D) $\frac{2}{3}$ mol of chlorine atom is						
(D) $\frac{2}{3}$ mol of chlorine atom is						
of chlorine atom is						
(C) Deflected by electric and magnetic field						
inetic energy of He gas is :						
(D) None of these						
I by a very small tube having a jas while bulb B was empty. On lume of the bulb B is .						
(D) 400 cm ³						

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[8]			SA	MPLE PAPER (Medical Count Down)			
27.	The magnitude of work done in ergs for the reversible expansion of one mole of an ideal gas from a volume of 10 L to 20 L at 25° C is						
	(A) $2.303 \times 298 \times 0$.082 log 2	(B) $298 \times 10^7 \times 8$	(B) $298 \times 10^7 \times 8.31 \times 2.303 \log 2$			
	(C) $2.303 \times 298 \times 0$.082 log 0.5	(D) 2.303 × 298 >	< 2 log 2			
28.	One mole of an idea from a volume of 10	al gas expands isother 0 dm ³ to a volume of 3	naly against a constant external pressure of 1 atm) dm ³ . Calculate the work by the gas in joules				
	(A) – 3039 J	(B) <i>—</i> 4052 J	(C) –1013 J	(D) –2026 J			
29.	consider a gas pha	se reaction $2SO_2 + O_2$	\Rightarrow 2SO ₃ . If P _{SO2} ; P _{O2} a	and P _{so3} represent Equilibrium			
	partial pressue of re	espective substance.	What will be expression	on of K_p for above reaction?			
	(A) $\frac{P_{SO_3}^2}{P_{SO_2}^2.P_{O_2}}$	(B) $\frac{P_{SO_2}^2.P_{O_2}}{P_{SO_3}^2}$	(C) $\frac{P_{_{\mathrm{SO}_2}}.P_{_{\mathrm{O}_2}}^2}{P_{_{\mathrm{SO}_3}}}$	(D) $\frac{P_{SO_2}^2 \cdot P_{SO_3}^2}{P_{O_2}}$			
30.	The equilibrium co What is the equilibr	nstant (K _c) for the rea ium constant for the re	action $2HCI(g) \rightleftharpoons H_2(g)$ eaction ?	$(g) + Cl_2(g)$ is 4×10^{-34} at 25°C.			
	$\frac{1}{2}H_{2}(g) + \frac{1}{2}CI_{2}(g) \rightleftharpoons HCI(g)$						
	(A) 2 × 10 ⁻¹⁷	(B) 2.5 × 10 ³³	(C) 5 × 10 ⁶	(D) None of these			
31.	1. When 0.4 g of NaOH is dissolved in one litre of solution, the pH of the solution is –						
	(A) 12	(B) 2	(C) 6	(D) 10			
32.	The hydrogen ion concentration and pH of the solution made by mixing 100 mL of 1.0 M HNO with 100 mL of 0.8 M KOH, are –						
	(A) [H⁺] = 0.1 M, pH	= 1	(B) [H ⁺] = 0.01 M, pH = 2				
	(C) [H ⁺] = 1 × 10 ⁻¹²	M, pH = 12	(D) [H⁺] = 1 × 10 ⁻⁷ M, pH = 7				
		~ *					
		Space fo	or rough work				





















[14]				SAMPLE PAPER (Medical Count Down)		
54.	NAD and NADP act	as1	and are	2 attached to aponenzyme.		
	1		2			
	(A) Coenzymes		Firmly			
	(B) Coenzymes		Loosely			
	(C) Prosthetic grou	ps	Firmly			
	(D) Prosthetic grou	ps	Loosely			
55.	Human heart is :					
	(A) Myogenic and Endodermal		(B) Myoger	nic and Mesodermal		
	(C) Neurogenic and	l Endodermal	(D) Neurog	enic and Mesodermal		
56.	Activation of sympa	athetic nervous syste	em has following ef	ffect on given characters :		
	Heart Rate	Power of Vent	tricular contaraction	n Cardiac output		
	(A) Increase	Inc	rease	Decrease		
	(B) Increase	De	crease	Decrease		
	(C) Decrease	Inc	rease	Increase		
	(D) Increase	Inc	rease	Increase		
57.	Human kidneys are	located between the	e levels of following	g vertebra :		
	(A) T ₁₀ – L ₁	(B) $T_{12} - L_3$	(C) $T_2 - L_5$	(D) $T_4 - L_1$		
5 8.	8. Cell bodies of neurons can be observed in :					
	(A) Grey matter	(B) White matter	(C) Nerves	(D) None of these		
59 .	59. Which part of brain is located between thalamus and hindbrain?			brain?		
	(A) Cerebellum	(B) Midbrain	(C) Cerebr	um (D) pineal gland		
60.	30. Which of the following is not the function of androgens in human?			human?		
	(A) Synthesis of proteins and carbohydrates					
	(B) Stimulation of spermatogenesis					
	(C) Influence the lib	ido				
	(D) Support of preg	nancy				
	Space for rough work					

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SAM	IPLE PAPER (M	edical Count Down)				[15]	
	ANSWER KEYS (MEDICAL)							
		SA	AMPLE TEST	PAPER				
	(For Students Going to Class 12 [™] IN 2022)							
	<u>STREAM</u>	: MEDICAL	COURSE OFFE	<u>RED</u> : MEDICAL	CO	UNTDOWN		
			PHYSICS	5				
1.	(A)	2.	(D) 3.	(B)	4.	(B)		
5.	(C)	6.	(D) 7.	(B)	8.	(A)		
9.	(C)	10.	(C) 11	. (C)	12.	(A)		
13	. (A)	14.	(A) 15	5. (A)	16.	(B)		
17	. (A)	18.	(D) 19). (D)	20.	(B)		
			CHEMIST	RY				
21	. (B)	22.	(B) 23	3. (C)	24.	(C)		
25	. (C)	26.	(D) 27	′. (B)	28.	(D)		
29	. (A)	30.	(D) 31	I. (A)	32.	(A)		
33	. (A)	34.	(D) 35	5. (C)	36.	(B)		
37	. (A)	38.	(D) 39). (B)	40.	(A)		
			BIOLOG	Y				
41	. (B)	42.	(A) 43	B. (B)	44.	(D)		
45	. (B)	46.	(D) 47	7. (C)	48.	(C)		
49	. (A)	50.	(A) 51	l. (D)	52.	(B)		
53	. (C)	54.	(B) 55	5. (B)	56.	(D)		
57	. (B)	58.	(A) 59). (B)	60.	(D)		

