

"Dissemination of Education for Knowledge, Science and Culture" - Shikshanmaharshi Dr. Bapuji Salunkhe Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur

(Autonomous) **Department of Physics** Value Added Course on **Basic Instrumentation in Physics** 1st August 2018 to **30 October 2018**

Course Duration : 3 Months

Course Coordinator

Head

Principal

Dr. G. J. Navathe

Dr. M. M. Karanjkar

Dr. S. Y. Hongekar

"Education for Knowledge, Science and Culture" -Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's Vivekanand College (Autonomous), Kolhapur.

Notice

All the B.Sc/ B.Com. / B. A. (I, II and III) students are here by informed that department of Physics is organizing Add On course entitled "*Basic Instrumentation Course.*" The duration of this course will be of 90 days. Interested students should register their name in the department of Physics on or before 16 July 2018 (Time 10:30 am to 4:30 pm). The time table of the course will be displayed on notice board soon.

Note: Fee for the course: 500/- per student

Gugal th forHead, Department of Physics

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"Education for Knowledge, Science and Culture" -Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's Vivekanand College (Autonomous), Kolhapur. Department of Physics (2018-19)

Syllabus for Add On Course (Basic Instrumentation Course)

Unit: I

Least Count of Instruments:

Vernier caliper, Micrometer screw gauge, Sperometer, Meter scale, Spectrometer, Travelling microscope, Optical bench, Volt meter, Current meter, Galvanometer

Unit: II

Study of Instruments:

Traveling microscope, Spectrometer, Optical bench, Ballistic Galvanometer, Sextant instrument, Telescope,

Unit: III

Study of electronics and electricity:

Use of multimeter, Testing of Components, Use of CRO, Use of Audio frequency generator, To check the fuse, Continuity of wire

Unit: IV Field Visit



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Shri Swami Vivekanand Shikshan Sanstha's Vivekanand College (Autonomous), Kolhapur.

BASIC INSTRUMENTATION COURSE IN PHYSICS

	1	Name Li	st		
Sr. No.	Name of the student	Roll no.	Mobile No.	Fee	Sign
1	Mr. Chile Aniket N.	10001	7304728359	500	ACC
2	Miss. Chougule Ankita J.	10002	7875630725	500	ALS
3	Miss. Karale Prajakta M.	10003	7350130213	500	ante
4	Miss. Ghulanwarkar Pooja L.	10004	8805676137	500	eig
5	Miss. Patil Sanyogita S.	10005	7775852671	500	Sepadid
6	Miss. Chougule Priyanka M.	10006	7447345498	500	PAR.
7	Miss. Nirmalkar Mayuri C.	10007	8888445162	500	MEN.
8	Miss. Nadaf Anisa A.	10008	9657991926	500	A.
9	Miss. Kumbhar Aishwarya S.	10009	9130589236	500	GAK
10	Miss. Mohite Shamal V.	10010	8308587851	500	SVM
11	Mr. Patil Pratik R.	10011	8888752121	500	PPP
12	Miss. Patil Sheral S.	10012	8975868730	500	SSP
13	Miss. Musale Tejasvini T.	10013	8830035093	500	ITM.
14	Mr. Wadeyar Anirudha K.	10014	7448225966	500	Atuates
15	Mr. Kumbhar Swarup S.	10015	7709881996	500	Elle
16	Mr. Yadhav Vaibhav V.	10016	9975625383	500	WY
17	Miss. Digraje Ankita R.	10017	8308480080	500	APD .
18	Miss. More Aishwarya A.	10018	8999076570	500	Agatett-
19	Mr. Gulavni Prasad R.	10019	91308217017	500	PRG
20	Miss. Powar Mayuri P.	10020	7264006404	500	mpp
21	Miss. Bendke Mukta V.	10021	7447800400	500	UJP
22	Mr. Patil Omkar I.	10022	7887925545	500	Re-
23	Mr. Chavan Ramchandra A.	10023	8552012837	500	DR.
24	Miss. Patil Snehal V.	10024	8605992259	500	Grehal
25	Mr. Bhatale Sachin S.	10025	7038935539	500	Sadun
26	Miss. Patil Samrudhi Y.	10026	9420263433	500	Spatil
27	Miss. Londhe Pradnya A.	10027	9545946235	500	24K
28	Mr. Patil Satish S.	10028	7709760257	500	Falit
9	Mr. Patil Sourabh S.	10029	7038821198	500	Falit
0	Mr. Mote Ramesh A.	10030	7767803282	500	Famesh
1	Mr. Ustad Ruhan E.	10031	9156755880	500	Ruham
2	Miss. Suryawanshi Smital J.	10032	9766755495	500	Sig-
3	Mr. Kesarkar Vinayak B.	10033	9764410395	500	16
4	Miss. Desai Ashwini A.	10034	9130186961	500	Ashwim
5	Miss. Kamble Shivani S.	10035	9067758949	500	SSL
6	Miss. Kanade Priyanka S.	10036	9370649886	500	Piste
7	Miss. Patil Shivani D.	10037	8806695144	500	Fally
8	Miss. Shinde Manasi L.	10038	7420087778	500	Missinde
9	Miss. Shinde Manisha A.	10039	9923848709	500	MAS



40	Mr. Chodankar Shubham N.	10040	9665432520	500	10.
41	Mr. Patil Pramod D.			500	.pa
42		10041	9922757858	500	Patis
	Miss. Patil Rutuja B.	10042	7447286901	500	R.P.
43	Mr. Jangam Shivkrupa P.	10043	9325797142	500	
44	Mr. Sonkamble Rohan R.	10044	9422280300	500	EPJ
45	Mr. Kamble Ashish S.	10045	7030893630		Rohan
46	Mr. Nerelkar Somesh K.	10045		500	Pramble
47	Miss.Ramsing Bhagyashri s		7057929914	500	Smaech
	Thiss Rainsing Dhagyashri s	10047	9975251422	500	Gaming.



Education for Knowledge, Science and Culture" -Shikshanmaharshi Dr. Bapuji Salunkhe Shri Swani Vivekanand Shikshan Sansha's Vivekanand College (Autonomous), Kolhapur. Department of Physics Add On Course (2018-2019)

Sr No	Name of the student	06/08	17/08	13/08	14/08	120108	1108	07/08	28/08	22/09	02/09	10/09	11/09	17/09	24/09	25/0
1	Mr. Chile Aniket N.	MC	ANC	ANC	- ANC	erk	anc	ANC	ACK	ANG	ANK	ANC	BAC	ANC	ONG	ANS
2	Miss. Chougule Ankita J.	ANC	AR	DIC	A	ASC	ATE	PTC	A	ATC	ATC	ALC	ATT	A	DEC	HE C
3	Miss. Karale Prajakta M.	FMK	-	Frik	Igmik		FORK	Fink	protik	A	FML	Fork	A	Amk	A	[m
4	Miss. Ghulanwarkar Pooja L.	PLG	Rig	PIG	PIG	PLG	A	PLG	PLG	PLA	PIG	PLG	PIG	A	199	PUS
5	Miss. Patil Sanyogita S.	Spale	- · ·	spali	Stall	Spall	Sil	Fall	Stal	A	514	41	AU	900	Salit	500
6	Miss. Chougule Priyanka M.	PMC	DOC	-A	OmC	A	PMC	Ene	- poe	POX	PIC	FINC	A	Pm	Prov	A
7	Miss. Nirmalkar Mayuri C.	PICT	mut	med	MUN	MA	MCM	-	-	mat	A	men	ma	men	MCM	Inc
8	Miss. Nadaf Anisa A.	ANN	AND	RYA	AND	ANN		ANA	-AHH	ANN	pud	ANN	ANH.	AHA	ON	AN
9	Miss. Kumbhar Aishwarya S.	SAL	SAK	SK	SAL.	9K	A	9K	SAL	SIX	SAK	A	SAL	A	Ste	As
10	Miss. Mohite Shamal V.	Sm	A	SIM	SUD	SVM	SID	SUD	A	SM	SYM	SYM	Spr	SVA	SVI	1.A
11	Mr. Patil Pratik R.	PRC	PRP	PRP	PRE	PRP	PRP	PRP	PKP	PRE	PRE	A	PRP	PRP	PRP	FR
12	Miss. Patil Sheral S.	SER	SSP	SSP	SSP	SSP	SSP	922	982	SSP	SP	SIP	SSP	A	SSP	SS
13	Miss. Musale Tejasvini T.	TID	TIM	A	A	TTM	TIPA	tim	TIM.	TTM	A	TIM	TIM	TIM	A	T
14	Mr. Wadeyar Anirudha K.	Shi	SKK	AKYA	SKHA	Atul	A	skk	About	Akni	AKIN	A	A	AKN	Ach	AK
15	Mr. Kumbhar Swarup S.	A.	A	St	SSK	St	A	555	3C	SK	SK	GK	55/	54	411	S
16	Mr. Yadhav Vaibhav V.	VXX	m	M	INT	-WY-	YIN	M	M	JAY.	-WY	JAN	-VW	VOM	VV	N
17	Miss. Digraje Ankita R.	RD.	AD	ALD	APD	AD	APP	APP	ARD	APD	APD	APD	APT	APD,	APO	AP
18	Miss. More Aishwarya A.	ABRIT	Agout	Agast	Agent	A-	ABOUT	Aget	Agent	A	Agast	Agent	Agenti	ARCUIT	Acut	ARC
19	Mr. Gulavni Prasad R.	PBG	A	PRG	PRG	-PRF	PRG	- PRF	PR	HRG	BG	PKF	PK	PRG	HKG	QR
20	Miss. Powar Mayuri P.	CAR	mpp	MER	A	MPY	MPP-	MPP	MPF-	mer	MA	mil	A	mer	MPP.	m
21	Miss. Bendke Mukta V.	MAD	A	MB	MUB	DUB	MB	-mB	MUB	MB	A	IMB	INE	NU	me	m
22	Mr. Patil Omkar I.	OTP	OF]	otte	OTP	A	CIP	里	OF	OFF	LIP	A	CIP	OIP	OP	A
23	Mr. Chavan Ramchandra A.	RA	RA	RA	A	RA	RA	A	RA	A	RD	RA	RA	A	RA	R



Education for Knowledge, Science and Culture" -Shikshanmaharshi Dr. Bapuji Salunkhe Shri Swami Vivekanand Shikshan Sansiha's Vivekanand College (Autonomous), Kolhapur. Department of Physics Add On Course (2018-2019)

Sr No	Name of the student	\$108	02108	08108	09108	16109	0310	Ralo	8/00/0	8-00	9/26/0	1 00 10	9 1910	3 2610	127/0	9311
24	Miss. Patil Snehal V.	Sectur	frehel	Solut	achel	she	I Sal	51	1 CL	1 41	1000	1	117/14	n ny	910	Sne
25	Mr. Bhatale Sachin S.	Southin	Sidu	Sachi	A	Kalija	Sechi	Enthi	At Lach	r Kuhl	Sul	hi Su	w Such	a Soul	A	Se
26	Miss. Patil Samrudhi Y.				+11		Spat			Gnit	1 and	I Gai	4 Gpt	ti spat		A H
27	Miss. Londhe Pradnya A.	Dar	TAI.	DH	Pal	Y	gran	SM	DAI	St.	Spa		191	PAL	A	PAL
28	Mr. Patil Satish S.	Fall	tabl	Fatil	TA	40W	Tris	EF.	IMIL	FIL.	py	11 m	EL	5d	Enli	st
29	Mr. Patil Sourabh S.	Selu	Stal	Sailt	Edy	GIJ	fall tal	Lat	Lani	9 del	Fai	130	A	810	Edd	for
30	Mr. Mote Ramesh A.	and the second s	hamet			goven			Apon	Bunch	pare	a pou	Barnet	Barro	14 Sont	Gar
31	Mr. Ustad Ruhan E.	Ruhan		0.	b.	A			to			1	0	n	Ruba	Ruh
32	Miss. Suryawanshi Smital J.	S.S-	Kuham	Ruhy	KUNDER	58	Ruhan	Kun	ne Ruha	Kuno	Ruha	1.44	Kaha	- 55	SX	- 55
33	Mr. Kesarkar Vinayak B.	WK	Vie	A	ik	1	145-	12	11	12	10	14	12	V	A	16
34	Miss. Desai Ashwini A.	Administra		1 duer	Ashushi	A LIVENA	ed unit	1.D	Astroki	H	Hum	Aluen	Alus	N La La	Acho	Adui
35	Miss. Kamble Shivani S.		4	-	SSK	SSK	A	A	Abur	59	+24 -	SSK	-		100	SSK
36	Miss. Kanade Priyanka S.		25k	PSK	Pok	Pet	A	ask	A	Del	Pale	A	Pole	-St Pok	Por Por	DA
37	Miss. Patil Shivani D.		Bill		1	Pat 1	Dali	Stal	Fall	DI	Rill	A		Shi	DC	0L
38	Miss. Shinde Manasi L.	Minde	-				Mounde	plan	A	+ +	THY AT	Saul	Sed!	1 1 1	Mahind	gal
39	Miss. Shinde Manisha A.	MAG			MER	MAS	MAS	NAS	MAS	Mag	Mshin	MAS	MAS		Mas	A
40	Mr. Chodankar Shubham N.	SC	SIC	A	AC	-DC	AC	AC	AC	IN/DE)	A	AC	-	NAK	AC	A
41	Mr. Patil Pramod D.			Retur	Petil	Retil	A	Patil	Bil	Putit	Patil	-	AC	-		P
42	Miss. Patil Rutuja B.		Rep	RO	RO	Rep	Bo	BP		1		Batil	-	Patil	Ibil	1 Ball
43	Mr. Jangam Shivkrupa P.		SA	A	SPI	eni	en	The	Rp	Rop	PD auf	Pop	BP	Rop	PP	Rp
44	Mr. Sonkamble Rohan R.		7	Roman	Robar	AL '	Rono	Polar	Ponel	150g	- PL	19	573	A	91	4)
45	Mr. Kamble Ashish S.	Kamble			Themat	5Kmtle				Rona	Roha		Room	hona	Rohan	Kow
46	Mr. Nerelkar Somesh K.		Smorth	1			Smert	A	Smeth	Lin	Spreh	A	Gren	Acouste	11	Brand
17	Miss.Ramsing Bhagyashri s		St. anor		A samuely	suans I	Hermon	A	Wanthey	P	1		-	Goots	bret	Sm
				7		Y	¥	A	Manuel	Mar .	A	Y	Praama .	A	Hans	Hismu
	Mr. Abhijeet V. Shinde	8	8	8	8	8	8	8	8	9	A	8	8	0	1	-1
	Mr. I. M. Mulla	the s	and	ante	com	im	AM	ant	min	ant	am	and the	0	0	8	8



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Roll	No.	

Shri S	-Shi Swami Vivekan	ge, Science and Cultur kshanmaharshi Dr. B and Shikshan Sanstha, hapur (Autono)	a <mark>puji Salunkhe</mark> Kolhapur	
D	epartment	t of Physics		
		e Examination on course in p	hysics	
Date: 19/02/2018 Time:10:30 am to 11:30 am Student's Name :			Total Marks: 20	
Student's Sign :				
Jr. Supervisor Sign:				
Q.1) Select correct alternati	ve		(20)	
1)By Newton's formula, if X_1 are	nd X ₂ are re	sp. the object and	image distances from the	
respective focal points for an optica				
a) $X_1X_2 = f_1f_2$		b) X1	$X_2 = f_1 / f_2$	
c) $X_1 X_2 = f_1 / f_2$		d) X1.	$X_2 = f_1 f_2$	
2) If the total force acting on a part	icle or system	n is zero, then o	of the particle or system of	
particles is conserved.				
a) linear momentum		b) angu	lar momentum	
c) energy			d)force	
3) The maimum horizontal distance	covered by	a projectile is called	theof the projectile	
a) displacement			b)range	
c) flight			d)trajectory	
4) Rigid body consist of de	egrees of free	edom		
a) 3	b) 1	c) 6	d) 9	
5) A rigid body in motion can be co	mpletely spe	cified if its	and are given	
a) position, orientation		b)position, velocity		
c) position, centre of mass		prientation, centre	of mass	
5) The principle of work is express	ed by the equ	uation		
a) $\sum F_i \cdot \delta r_i = 0$	b) 2	$\sum F_i^{(a)} \cdot \delta r_i = 0$		
c) $\sum F_i \cdot \delta v = 0$,	$F_i.\delta r_i = 0$		
7) A constraint is on the f	reedom of m	otion of a system o	fparticles	
a) restriction	b)c	ondition		



c) information		d) none of the	se
8) Hamilton's principle is	pri	nciple	
a) differential		b) integral	
c) an algebraic		d) summation	
9) The shortest distance be	etween two poir	nts in a plane is along a	passing through th
two points			
a) curve		b) normal to p	olane
c) straight line		d) circle	
10) of a particle	e is same in the	fixed and the rotating sy	stem
a) velocity		b) linear accel	eration
c) angular acceleration	tion	d) momentum	
11) The frequency of antis	ymmetric mode	is frequency of	f symmetric mode.
a) higher than		b)lower than	
c) lowest than		d)zero	
12)The trajectory of a part	icle entering an	electric field in a direction	on perpendicular to \vec{E} is
a) straight line para	llel to \vec{E}	b) parabola	
c)hyperbola		d)circle	
13) If Ø is scalar potentia	l function then		sent Laplace's equation
a) $\nabla^2 \phi = 0$		ψ_{ϵ_0} c) $\nabla \phi = 0$	d) $\nabla \phi = \rho/\epsilon_0$
14) Mathematical formula		,	<i>2</i>
a) Lagrangian's equ		b) Maxwell's equation	
c) Lorent'sz equatio	ons	d) Newton's equation	
15)The equation of continu			
a) energy		b) momentur	
c) charge		d)angular mo	
16) Electric dipole moment	per unit volum		
a) Displacement ver		b) Polarizatio	
c) Magnetization M			tensity vector E
17) According to Ampere'	's circuital law		
closed path is equal to			
a) twice			times
c) $\mu_0/2$ times	1	d) $\mu_0/4$ times	5

- 18) The electromagnetic energy crossing unit area in unit time is called -----
 - a) Poynting vector

b)polarization vectord) current density

- c)energy density
- 19) In electromagnetic fields ------
- b)total momentum is conserved
- c) both a and b

a) total energy is conserved

d) neither a nor b

20) The trajectory of charged particle in a constant ,uniform magnetic field is ------

- a) straight line
- c)hyperbola

b) parabolad)circle



Roll No. 10031 "Education for Knowledge, Science and Culture" -Shikshanmaharshi Dr. Bapuji Salunkhe Shri Swami Vivekanand Shikshan Sanstha, Kolhapur Vivekanand College, Kolhapur (Autonomous) **Department of Physics** Add On Course Examination **Basic Instrumentation course in physics** Date: 19/02/2018 **Total Marks: 20** Time:10:30 am to 11:30 am Ruhan E Student's Name : ---- UStad Student's Sign : --- Uzahan Jr. Supervisor Sign: -----Q.1) Select correct alternative (20)1)By Newton's formula, if X_1 and X_2 are resp. the object and image distances from the respective focal points for an optical system then..... $\frac{b}{X_1} \frac{X_2 = f_1}{f_2}$ a) $X_1X_2 = f_1f_2$ c) $X_1 X_2 = f_1 / f_2$ d) $X_1 X_2 = f_1 f_2$ 2) If the total force acting on a particle or system is zero, then ---- of the particle or system of particles is conserved. a) tinear momentum b) angular momentum c) energy d)force 3) The maimum horizontal distance covered by a projectile is called the ------of the projectile a) displacement b)range c) flight d)trajectory 4) Rigid body consist of ----- degrees of freedom a) 3 b) 1 eto d) 9 5) A rigid body in motion can be completely specified if its ------ and ----- are given a) position, orientation b)position, velocity c) position, centre of mass d) orientation, centre of mass 6) The principle of work is expressed by the equation ------(a) $\sum F_i \cdot \delta r_i = 0$ b) $\sum F_i^{(a)} \cdot \delta r_i = 0$ c) $\sum F_{i} \delta v = 0$ d) $F_i \cdot \delta r_i = 0$ 7) A constraint is ----- on the freedom of motion of a system of particles a) restriction b)condition

c) inform	ation		d) none of these	
8) Hamilton's pr	inciple is	principle		
a) differe	ntial		b) integral	
c) an algo	braic		d) summation	
9) The shortest d	istance between two p	oints in a pl	ane is along a	passing through the
two points				
a) curve			b) normal to plan	с
(c) straigh	t line		d) circle	
(10) 0	f a particle is same in	the fixed an	d the rotating system	n
a) veloci	ty	ii.	b) linear accelerati	ion
(e) angula	r acceleration		d) momentum	
11) The frequence	ey of antisymmetric mo	de is	frequency of syr	nmetric mode.
(a) higher			er than	
ottowes	t than	d)zero	•	
12)The trajectory	of a particle entering			erpendicular to \vec{E} is -
	, and the second s		ford in a uncotion p	
a) straigh	t line parallel to \vec{E}	a b) 55	arabola	
c)hyperbo				
		d)cire		
r = 100000000000000000000000000000000000	ar potential function the $1 + 2^2 d$			
	0,10	= ρ/ε ₀		d) $\nabla \phi = \rho/\epsilon_0$
				netism are known as
	igian's equations	/	axwell's equations	
	'sz equations		ewton's equations	
	of continuity is in acco	ordance with		tion of
a) energy			b) momentum	
e) charge			d)angular momen	
/	le moment per unit vol	ume of pola		
and the second s	cement vector D		b) Polarization ve	
	tization M		DElectric intensi	
	o Ampere's circuital la			
	ual to the to	otal current l		
a) twice			b) μ ₀ time	es
<u></u>	nes	ESTD	d) $\mu_0/4$ times	
		JUNE 1964		
	12	Autonomous!		



Roll No. 10022

"Education		lge, Science and Cu iikshanmaharshi Di	lture'' r. Bapuji Salunkhe
	wami Viveka	nand Shikshan Sanst	ha, Kolhapur
Vivekanand Co		olhapur (Autor t of Physics	nomous)
		e Examination	n
Basic Instru			
Date: 19/02/2018			Total Marks: 20
Time:10:30 am to 11:30 am Student's Name :p-dill	a sel es	1 F	
Student's Name : pewill	amka	X	
Student's Sign : Patil			
Jr. Supervisor Sign:			
Q.1) Select correct alternativ	ve		(20)
1) By Newton's formula, if X_1 and	d X ₂ are re	esp. the object an	nd image distances from the
respective focal points for an optical			
a) $X_1X_2=f_1f_2$			$X_1/X_2 = f_1/f_2$
c) $X_1 X_2 = f_1 / f_2$			$X_1X_2 = f_1f_2$
2) If the total force acting on a partic	cle or syste	m is zero, then	of the particle or system of
particles is conserved.			
(a) tinear momentum		b) an	gular momentum
c) energy			d)force
3) The maimum horizontal distance	covered by	a projectile is call	-
a) displacement			b)range
(e) flight			d)trajectory
4) Rigid body consist of deg	grees of free	edom	
a) 3	b) 1	10)6	d) 9
5) A rigid body in motion can be con	npletely spe	ecified if its	and are given
a) position, orientation		b)position, v	
c) position, centre of mass	d) (prientation, centre	e of mass
6) The principle of work is expressed			
$(a) \sum F_{i} \delta r_{i} = 0$		$\sum F_i^{(a)} \cdot \delta r_i = 0$	
c) $\sum F_{i}.\delta v = 0$	d) I	$F_i \cdot \delta r_i = 0$	
7) A constraint is on the fro	eedom of m	otion of a system	of particles
a) restriction	LEGERO b)c	ondition	
	STD HAPUP		

c) information d) none of these 8) Hamilton's principle is ----- principle a) differential b) integral c) an algebraic d) summation 9) The shortest distance between two points in a plane is along a ------ passing through the two points a) curve b) normal to plane c) straight line d) circle of a particle is same in the fixed and the rotating system a) velocity b) tinear acceleration c) angular acceleration d) momentum 14) The frequency of antisymmetric mode is ------ frequency of symmetric mode. a) higher than b)lower than 1 e) Towest than d)zero 12)The trajectory of a particle entering an electric field in a direction perpendicular to \vec{E} is a) straight line parallel to \vec{E} b) parabola 1 chtyperbola d)circle 13) If ϕ is scalar potential function then following equation represent Laplace's equation $\sqrt{a}V^2 0 = 0$ b) $\nabla^2 \phi = \rho/\epsilon_0$ c) $\nabla \phi = 0$ d) $\nabla \phi = \rho/\epsilon_0$ 14) Mathematical formulation of empirical laws in electricity and magnetism are known as -a) Lagrangian's equations b) Maxwell's equations A) Newton's equations c) Lorent'sz equations 15) The equation of continuity is in accordance with the law of conservation of -----a) energy b) momentum c) charge d)angular momentum (6) Electric dipole moment per unit volume of polarized medium is called -----a) Displacement vector D b) Polarization vector P c) Magnetization M d) Electric intensity vector E According to Ampere's circuital law the line integral of magnetic induction B around closed path is equal to ----- the total current I enclosed by the closed path. a) twice b) µ0 times et uo/2 times d) $\mu_0/4$ times

18) The electromagnetic energy crossing unit area in unit time is called ------

a) Poynting vector

b)polarization vectord) current density

e)energy density

19) In electromagnetic fields ------

a) total energy is conserved

b)total momentum is conserved

cerboth a and b

d) neither a nor b

20) The trajectory of charged particle in a constant , uniform magnetic field is ------

a) straight line

c)hyperbola

b) parabola d)circle



	$\begin{pmatrix} 12 \\ 20 \end{pmatrix}$
Roll No. 10018	20
Shri Swami Vivekanand Colleg Depa	Knowledge, Science and Culture" -Shikshanmaharshi Dr. Bapuji Salunkhe i Vivekanand Shikshan Sanstha, Kolhapur ge, Kolhapur (Autonomous) rtment of Physics Course Examination
Date: 19/02/2018 Time: 10:30 am to 11:30 am	entation course in physics Total Marks: 20 TShwarya A
Student's Sign :	
Q.1) Select correct alternative	(20)
HBy Newton's formula, if X_1 and X	2 are resp. the object and image distances from the
respective focal points for an optical sys	stem then
a) $X_1X_2 = f_1f_2$	$\sqrt{5}X_1/X_2=f_1/f_2$
c) $X_1 X_2 = f_1 / f_2$	d) $X_1 X_2 = f_1 f_2$
(2) If the total force acting on a particle	or system is zero, then of the particle or system of
particles is conserved.	
(a) tinear momentum	b) angular momentum
c) energy	d)force
3) The maimum horizontal distance cov	vered by a projectile is called theof the projectile
a) displacement	b)range
() flight	d)trajectory
Arigid body consist of degree	es of freedom
a) 3 b)	1 100 d) 9
5) A rigid body in motion can be comple	etely specified if its and are given
a) position, orientation	(b)position, velocity
c) position, centre of mass	d) orientation, centre of mass
6) The principle of work is expressed by	y the equation
a) $\sum F_i \cdot \delta r_i = 0$	$J \rightarrow \Sigma F_i^{(a)} \delta r_i = 0$
c) $\sum F_{i} \cdot \delta v = 0$	d) $F_i \cdot \delta r_i = 0$
7) A constraint is on the freed	lom of motion of a system of particles
a) restriction	b)condition

c) information d) none of these 8) Hamilton's principle is ----- principle a) differential b) integral c) an algebraic d) summation 9) The shortest distance between two points in a plane is along a ----- passing through the two points a) curve b) normal to plane e) straight line d) circle 10) ----- of a particle is same in the fixed and the rotating system a) velocity b) linear acceleration . c) angular acceleration d) momentum 11) The frequency of antisymmetric mode is ----- frequency of symmetric mode. b) tower than a) higher than c) lowest than d)zero H2)The trajectory of a particle entering an electric field in a direction perpendicular to \vec{E} is -(b) parabola a) straight line parallel to \vec{E} c)hyperbola d)circle 13) If \emptyset is scalar potential function then following equation represent Laplace's equation $a)\nabla^2 \phi = 0$ b) $\nabla^2 \phi = \rho/\epsilon_0$ c) $\nabla \phi = 0$ d) $\nabla \phi = \rho/\epsilon_0$ 14) Mathematical formulation of empirical laws in electricity and magnetism are known as -a) Lagrangian's equations b) Maxwell's equations c) Lorent'sz equations d) Newton's equations 15)The equation of continuity is in accordance with the law of conservation of ----a) energy b) momentum c) charge dangular momentum 16) Electric dipole moment per unit volume of polarized medium is called ------(a) Displacement vector D b) Polarization vector P c) Magnetization M d) Electric intensity vector E According to Ampere's circuital law the line integral of magnetic induction B around closed path is equal to ------ the total current I enclosed by the closed path. a) twice b) μ_0 times c) µ0/2 times d) $\mu_0/4$ times NINF

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18) The electromagnetic energy crossing unit area in unit time is called ------

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20) The trajectory of charged particle in a constant , uniform magnetic field is ------(a) straight line

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b) parabola d)circle



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Roll No. 1007				U	
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		irse Exam		husiog	
Basic Instru Date: 19/02/2018	menta	ation cou	rse m		larks: 20
Time:10:30 am to 11:30 am	1000	Manula			
Student's Name : Nirmal Student's Sign :			<i>L</i>		
Student's Sign :					
Jr. Supervisor Sign:					
Q.1) Select correct alternativ	e				(20)
1)By Newton's formula, if X1 and	d X ₂ are	e resp. the	object an	d image di	istances from th
respective focal points for an optical	system	then			
a) $X_1X_2 = f_1f_2$			LOTA	$x_1/X_2 = f_1/f_2$	2
c) $X_1X_2 = f_1/f_2$			d) X	$X_1X_2 = f_1f_2$	
2) If the total force acting on a parti	cle or sy	stem is zero	, then	- of the par	ticle or system o
particles is conserved.					
a) linear momentum			1b) ang	gular mome	entum
c) energy				d)force	
3) The maimum horizontal distance	covered	by a project	tile is calle	ed the	of the projectil
a) displacement				b)range	
() flight				d)trajecto	ory
A) Rigid body consist of de	grees of	freedom			
Lat 3	b) 1		c) 6	d) 9
5) A rigid body in motion can be con	npletely	specified it	f its	and	are given
a) position, orientation			osition, v		
c) position, centre of mass		d) orientati	on, centre	e of mass	
6) The principle of work is expressed	ed by the	e equation			
$(1 a) \sum F_i \cdot \delta r_i = 0$		b) $\sum F_i^{(a)}.\delta I$	$r_i = 0$		
c) $\sum F_{i} \delta v = 0$		d) $F_i \cdot \delta r_i = 0$)		
7) A constraint is on the fi	reedom	of motion o	f a system	of particle	es
X varrestriction		b)condition			
	OLLEGE	to			



c) information d) none of these 8) Hamilton's principle is ----- principle a) differential b) integral c) an algebraic d) summation 9) The shortest distance between two points in a plane is along a ------ passing through the two points a) curve b) normal to plane Le) straight line d) circle of a particle is same in the fixed and the rotating system a) velocity b) linear acceleration (c) angular acceleration d) momentum) The frequency of antisymmetric mode is ------ frequency of symmetric mode. a) higher than Lollower than c) lowest than d)zero (2) The trajectory of a particle entering an electric field in a direction perpendicular to \vec{E} is a) straight line parallel to \vec{E} b) parabola c)hyperbola d)circle 3) If \emptyset is scalar potential function then following equation represent Laplace's equation a) \$ 0 = 0 b) $\nabla^2 \phi = \rho/\epsilon_0$ c) $\nabla \phi = 0$ d) $\nabla \phi = \rho/\epsilon_0$ 14) Mathematical formulation of empirical laws in electricity and magnetism are known as -a) Lagrangian's equations b) Maxwell's equations (c) Lorent'sz equations d) Newton's equations 15)The equation of continuity is in accordance with the law of conservation of -----a) energy b) momentum (e) charge d)angular momentum (6) Electric dipole moment per unit volume of polarized medium is called -----a) Displacement vector D b) Polarization vector P c) Magnetization M d) Electric intensity vector E 17) According to Ampere's circuital law the line integral of magnetic induction B around closed path is equal to ----- the total current I enclosed by the closed path. a) twice b) μ_0 times , et uo/2 times d) $\mu_0/4$ times

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Vivekanand College (Autonomous), Kolhapur.

BASIC INSTRUMENTATION COURSE IN PHYSICS

1	Result (2018-19)
Batch	I (Monday, Tuesday)
	(B.Sc.1, 111)

Sr.No.	Roll No.	Name of the student	Obtained marks out off (20)	Result
1	10001	Mr. Chile Aniket N.	18	Pass
2	10002	Miss. Chougule Ankita J.	19	Pass
3	10003	Miss. Karale Prajakta M.	20	Pass
4	10004	Miss. Ghulanwarkar Pooja L.	20	Pass
5	10005	Miss. Patil Sanyogita S.	20	Pass
6	10006	Miss. Chougule Priyanka M.	17	Pass
7	10007	Miss. Nirmalkar Mayuri C.	16	Pass
8	10008	Miss. Nadaf Anisa A.	14	Pass
9	10009	Miss. Kumbhar Aishwarya S.	15	Pass
10	10010	Miss. Mohite Shamal V.	18	Pass
11	10011	Mr. Patil Pratik R.	18	Pass
12	10012	Miss. Patil Sheral S.	19	Pass
13	10013	Miss. Musale Tejasvini T.	19	Pass
14	10014	Mr. Wadeyar Anirudha K.	16	Pass
15	10015	Mr. Kumbhar Swarup S.	16	Pass
16	10016	Mr. Yadhav Vaibhav V.	20	Pass
17	10017	Miss. Digraje Ankita R.	20	Pass
18	10018	Miss. More Aishwarya A.	12	Pass
19	10019	Mr. Gulavni Prasad R.	15	Pass
20	10020	Miss. Powar Mayuri P.	20	Pass
21	10021	Miss. Bendke Mukta V.	20	Pass
22	10022	Mr. Patil Omkar I.	18	Pass
23	10023	Mr. Chavan Ramchandra A.	13	Pass



Head Department of Physics evel D DEPARTINENT OF PHYSICS VIVERANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

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BASIC INSTRUMENTATION COURSE IN PHYSICS

	Result (2018-19)
Batch	II (Wednesday and Thursday)
	(B.Sc.1, 111)

Sr.No.	Roll No.	Name of the student	Obtained marks out off (20)	Result
1.	10024	Miss. Patil Snehal V.	19	Pass
2.	10025	Mr. Bhatale Sachin S.	19	Pass
3.	10026	Miss. Patil Samrudhi Y.	20	Pass
4.	10027	Miss. Londhe Pradnya A.	18	Pass
5.	10028	Mr. Patil Satish S.	20	Pass
6.	10029	Mr. Patil Sourabh S.	18	Pass
7.	10030	Mr. Mote Ramesh A.	17	Pass
8.	10031	Mr. Ustad Ruhan E.	14	Pass
9.	10032	Miss. Suryawanshi Smital J.	15	Pass
10.	10033	Mr. Kesarkar Vinayak B.	18	Pass
11.	10034	Miss. Desai Ashwini A.	18	Pass
12.	10035	Miss. Kamble Shivani S.	19	Pass
13.	10036	Miss. Kanade Priyanka S.	19	Pass
14.	10037	Miss. Patil Shivani D.	17	Pass
15.	10038	Miss. Shinde Manasi L.	16	Pass
16.	10039	Miss. Shinde Manisha A.	20	Pass
17.	10040	Mr. Chodankar Shubham N.	20	Pass
18.	10041	Mr. Patil Pramod D.	12	Pass
19.	10042	Miss. Patil Rutuja B.	15	Pass
20.	10043	Miss. Jangam Shivkrupa P.	20	Pass
21.	10044	Mr. Sonkamble Rohan R.	20	Pass
22.	10045	Mr. Kamble Ashish S.	18	Pass
23.	10046	Mr. Nerelkar Somesh K.	13	Pass
24.	10047	Miss.Ramsing Bhagyashri s	15	



Head

Department of Physics EAD DEPARTMENT OF PHYSICS WIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)





This to certify that Mr/Mrs/Miss Manasi L. Shindle of class B. Sc III has completed the add on/COC course in "Basic Instrumentation in Physics" conducted by Department of Physics, Vivekanand College, Kolhapur (Autonomous), Maharashtra, India during 2018 — 2019 academic year.

Course to-ordinator (Dr. G. J. Navathe)



(Dr. M. M. Karanjkar) Guralic



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