Vivekanand College, Kolhapur. (Autonomous)
Department of Physics
Internal Examination Notice
2019-20

Date:11 September 2019

All students of class B.Sc. I, B.Sc. II and B.Sc. III are hereby noticed that the first term internal evaluation examination is scheduled as per following time table.

Nature of question paper:

For B.Sc. I : Long answer question (Any one from given two questions) for 10 marks

Short answer question (Any two from given four questions) for 10 marks

For B.Sc. II : Long answer question (Any one from given two questions) for 10 marks

Short answer question (Any two from given four questions) for 10 marks

For B.Sc. II (Astro) : Long answer question (Any one from given two questions) for 10 marks

Short answer question (Any two from given four questions) for 10 marks

For B.Sc. III : Long answer question (Any one from given two questions) for 10 marks

Short answer question (Any two from given four questions) for 10 marks

Internal Evaluation Examination 2019-20.
SEM I, SEM III and SEM V
Time Table

Sr. No.	Class	Paper	Date	Time
1.	B.Sc. I	Paper I	23/09/2019	11:00 am to 12:00 pm
2.	B.Sc. II	Paper III	23/09/2019	11:00 am to 12:00 pm
3.	B.Sc. II (Astrophysics)	Paper I	25/09/2019	11:00 am to 12:00 pm
4.	B.Sc. III	Paper V (section I)	26/09/2019	11:00 am to 12:00 pm
		Paper V (section II)		01:00 am to 2:00 pm
		Paper VI (section I)	27/09/2019	11:00 am to 12:00 pm
		Paper VI (section II)		01:00 am to 2:00 pm

VIVEKANAND COLLEGE ESTD JUNE 1964 KOLHAPUR - 416003

HOD
Head of the
Department of Physics
Vivekanand College, Kolhapur.

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur (Autonomous)

Internal Examination 2019-20

B.Sc. II SEM III

General Physics, Sound and Acoustics and Electronics and Semiconductor Devices

Time: 30 Minutes | Marks: 20

Q. 1. Long Answer Questions (Any one) **(20)**

1) What is gyrostatic pendulum? Obtain an expression for its period.
2) Explain construction and working of cathode ray tube.

Q. 1. Long Answer Questions (Any one) **(20)**

1) Write a note on riding on bicycle.
2) Write a note on a rifling of Barrel of Gun.
3) Write a note on Lissjous figure with examples.

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur

(Autonomous)

Department of Physics

Internal exam

B.Sc.II Sem III

Date:- 23/09/2019

Attendance Sheet

Roll No.	Name Of The Student	Signature
7550	Bachche Aomkar Prakash	
7551	Banasavade Omkar Devadas	
7552	Bhatale Sachin Sakharam	
7553	Gole Gaurav Rajaram	
7554	Gurav Rutuja Ravindra	
7556	Khandekar Pooja Sanjay	
7557	Khatangale Shubhangi Prakash	
7558	Khatkale Prashant Prakash	
7559	Kudalkar Prajakta Shivaji	
7560	Mali Rohit Maruti	
7561	More Shubham Laxman	
7562	Padaval Vaibhav Sadashiv	
7563	Parab Vinayak Sumant	
7564	Patil Aakansha Bhimarao	
7565	Patil Akshay Dhanaji	
7566	Patil Aniket Ananda	
7567	Patil Anuja Dattajirao	
7568	Patil Prajkta Krushnat	
7569	Patil Shivani Vishnu	
7570	Pawar Aakash Anandrao	
7571	Pirai Omkar Baban	
7572	Rane Rohit Ramdas	
7573	Salokhe Atish Pundlik	
7574	Satbige Shivanand Sanjeev	
7575	Sayyad Alsaba Javed	
7576	Shelar Avinash Sanjay	
7691	Chavan Satish Rangrao	
7692	Chokakkar Viraj Vijay	
7693	Chougale Tejaswini Bajirao	
7694	Chougule Snehal Anil	
7695	Chougule Abhinandan Mahaveer	

VIVEKANAND COLLEGE ESTD JUNE 1964 (Autonomous)

7696	Dalavi Pandurang Narayan	
7697	Desai Vikram Jayaram	
7698	Desai Ashwini Amarsinh	
7699	Gaikwad Amrita Prakash	
7700	Gawade Vinayak Arjun	
7701	Ghorpade Dattatray Vishnu	
7702	Gotkhinde Shrutika Bharat	
7703	Josef Susen Livis	
7704	Kadam Sainath Subhash	
7705	Kamble Digvijay Pandurang	
7706	Kamble Mrunali Ramesh	
7707	Kamble Pratiraj Prakash	
7708	Kamble Shivani Shankar	
7709	Karade Yogesh Nitin	
7710	Khambe Manisha Madhukar	
7711	Khandekar Sandip Sukumar	
7712	Khot Akash Balaso	
7713	Khude Gouri Angad	
7714	Koli Sayali Santosh	
7715	Kumbhar Pratiksha Appaso	
7716	Latthe Sammed Rajendra	
7717	Lohar Neha Shankar	
7718	Mali Anurag Pundlik	
7719	Mardane Pratiksha Shrikant	
7720	Methe Kishori Prakash	
7721	Mote Ramesh Annappa	
7722	Mudekar Rutuja Ramachandra	
7723	Mulani Subiha Husen	
7724	Paladiya Priyanka Shantilal	
7725	Patil Akanksha A	
7726	Patil Nishigandha Shahaji	
7727	Patil Omkar Sanjay	
7728	Patil Prakash Ananda	
7729	Patil Rutuja Bhanudas	
7730	Patil Shilpa Shivaji	
7731	Patil Sunita Ashok	
7733	Phonde Vaishnavi Dinkar	
7734	Sarate Prasad Dileep	
7735	Sardesai Rutuja Rahul	
7736	Savant Komal Anil	
7737	Sharma Ankita Raviraj	
7784	Gavali Santosh Vasudev	
7785	Ghorpade Sunil Uttam	
7786	Kamble Ashish Sunil	
7787	Magar Shwetali Subhash	
7788	Mankapure Parveen Mehamud	
7789	Patil Deepali Mahavir	

VIVEKANAND EDUCATION SOCIETY'S COLLEGE OF ARTS, SCIENCE & COMMERCE (Autonomous) ESTD JUNE 1964

7790	Patil Divya Ramesh	
7791	Patil Mandar Dnyandeo	
7792	Patil Rajat Jaywant	
7793	Patil Rutuja Bharat	
7794	Patil Sanyogita Sanjay	
7795	Patil Snehal Namdev	
7796	Powar Mayuri Pandurang	
7797	Sasawade Shivani Bhikaji	
7798	Sawant Swati Ajit	
7799	Sharbidre Pranav Sunil	
7800	Shinagare Bharat Shivaji	
7801	Sonkamble Rohan Raju	
7802	Sutar Deepak Vishvanath	
7803	Valunj Amarja Digambar	
7732	Patil Vijayraj Maruti	
7804	Amate Punam Vitthal	
7805	Bendke Mukta Vikas	
7806	Bhandari Pratiksha Kiran	
7807	Carvalho Alex Motes	
7808	Choudhary Ruchita Pralhadray	
7809	Chougale Priyanka Bajirao	
7810	Devardekar Unmesha Sunil	
7811	Ekal Prathamesh Shivanand	
7812	Jadhav Digvijay Suresh	
7813	Jangam Shivkrupa Pramod	
7814	Karale Shubham Mansing	
7815	Kasar Siddhant Shashikant	
7816	Kashidkar Kishor Balaso	
7817	Kasture Yashdeep Anand	
7818	Kodag Sneha Shivaji	
7819	Kumbhar Akshay Dadaso	
7820	Marathe Kunal Sandeep	
7821	Mullani Kashish Sameer	
7823	Nikam Sneha Bajarang	
7824	Nirmalkar Mayuri Chandrakant	
7825	Patil Afanan Ashafak	
7826	Patil Akanksha Dhanaji	
7827	Patil Akshata Ravindra	
7828	Patil Mayuri Tukaram	
7829	Patil Nandini Sunil	
7830	Patil Rushikesh Eknath	
7831	Patil Saurabh Dinkar	
7832	Patil Shivali Balaso	
7833	Patil Sourabh Suhas	
7834	Pawar Pratiksha Ramesh	
7835	Powar Supriya Madhukar	
7836	Powar Vaishnavi Shankar	

VIVEKANAND COLLEGE KOLHAPUR ESTD JUNE 1964 (Autonomous)

7837	Raghani Rutik Dinesh	
7838	Ramsing Bhagyashri Shamrao	
7839	Sabale Abhishek Dattatray	
7840	Sajnikar Divya Netaji	
7841	Sankpal Prajakta Bajirao	
7842	Shinde Dhanashri Dadaso	
7843	Shinde Manisha Appasaheb	
7844	Shinde Neha Dattatray	
7845	Shinde Prajakta Ramchandra	
7846	Shinde Rutuja Sunil	
7847	Shirale Sayali Rajendra	
7848	Tandale Purva Shirish	
7849	Ubale Akanksha Kumar	
7850	Vadgave Sakshi Shamsundar	
7851	Suryvanshi Smital Jaysingrao	
7852	Bedagkar Gauri Rahul	
7853	Chavan Ramchandra Ashok	
7854	Dayama Abhishek Ashok	
7855	Hiremath Seema Sharanayya	
7856	Jadhav Nikhil Sandeep	
7857	Kalgutkar Aakash Rajendra	
7858	Kore Jyoti Vinayak	
7859	Mane Malhar Uday	
7860	Patil Omkar Dhanaji	
7861	Patil Omkar Janaba	
7862	Sarnaik Kunal Ketan	
7863	Shaikh Soufeen Shahmahmad	
7864	Shetke Pushkraj Umesh	
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7866	Waghmode Kiran Bhimrao	
7867	Yadav Durga Vaijanath	
7868	Gharale Karan Manohar	
7555	Kanade Priyanka Swatantryakumar	
7870	Kalugade Sourabh Ravindra	
7871	Sawant Arati Ashok	
7872	Shetke Atharav Sanjay	
7873	Punekar Dipali Anil	
7874	Kharase Rushikesh Dayanand	

Internal Examinar.. Dr.:....Trupti....V. Vruntar

VIVEKANAND COLLEGE KOLH ESTD JUNE 1964 (AUTONOMY)

।। ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ।।
– शिक्षणमहर्षी डॉ. बापूजी साळुंखे
34062
Shri Swami Vivekanand Shikshan Sanstha Kolhapur's
VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT

Signature of Supervisor :

Suppliment No. : (10)/20

Roll No. : 7561

Class : BSc-II

Subject : Sound and Acoustic

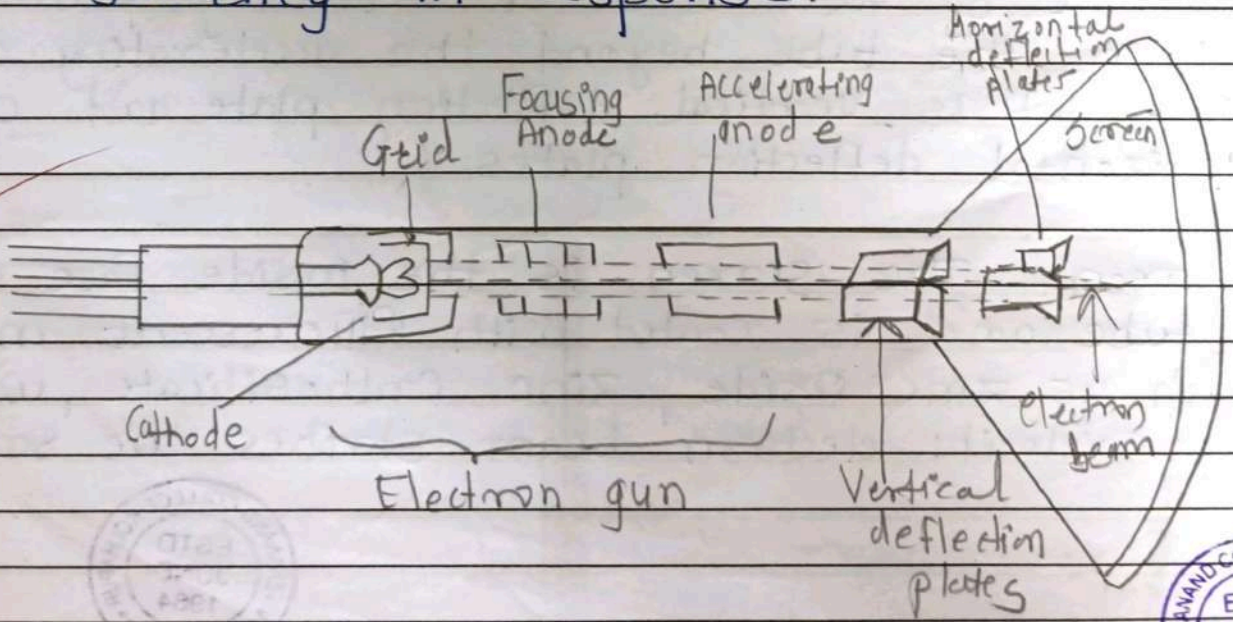
Test / Tutorial No. :

Div. :

Q1.

2. Construction and working of CRT

Cathode ray tube is heart of Oscilloscope Vacuum tube of Specral geometrical Shape and Converts an electrical Signal into visual form. Electron gun produces beam of electron The electron beam is deflected on its journey in response.



i Glass envelope

It is conical highly evacuated glass housing which contains vacuum inside and support various electrodes. the inner walls of CRT between neck and screen are coated with conducting material

ii Electron gun assembly -

The arrangement of electrodes which produce focussed beam of electrons is called electron gun. It essentially consists of an indirectly heated cathode, control grid, focussing anode and an accelerating anode.

The cathode consists of nickel cylinder coated with oxide coating and provide plenty of electrons.

iii Deflection plate assembly -

The deflection of the electron beam is achieved by two sets of deflecting plates placed within the tube beyond the accelerating anode. One set is vertical deflection plate and other is Horizontal deflection plates.

iv. Screen - The screen is the inside face of the tube and is coated with fluorescent material such as zinc oxide, zinc orthosilicate, when high velocity electron beam strikes the screen

8. Working of CRT

When Cathode is heated, it emits plenty of electrons, these electrons pass through Control grid on their journey. The control grid has negative potential. If negative potential on Control grid is high, few electrons will pass through it and the electron beam strikes on the screen will produce a dim spot of light. If negative potential on control grid is reduced. the spot of light will be bright

(10)

।। ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ।।
– शिक्षणमहर्षी डॉ. बापूजी साळुंखे 34063
Shri Swami Vivekanand Shikshan Sanstha Kolhapur's
VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT

15

Signature of Supervisor

Suppliment No. :

Roll No. : 7575

Class : B.Sc - II

Subject : Sound and Acoustic

Test / Tutorial No. :

Div. :

Q.1

2. Construction :-

i) Glass envelope :-

It is a conical highly evacuated glass housing which contains vacuum inside and support the various electrodes. The inner walls of CRT between neck and screen are coated with a conducting material, called aquadag. This coating is electrically connected to the accelerating anode so that electrons which accidently strike the walls ar returned to the anode. This prevents the walls of the tube from charging to a high negative potential.

ii) Electron gun assembly :-

The arrangment of electrodes which produce a focused beam of electrons is called the electron gun. It essentially consist of an indirectly heated cathode, a control grid, a focusing anode and an accelerating anode. The control grid is held at

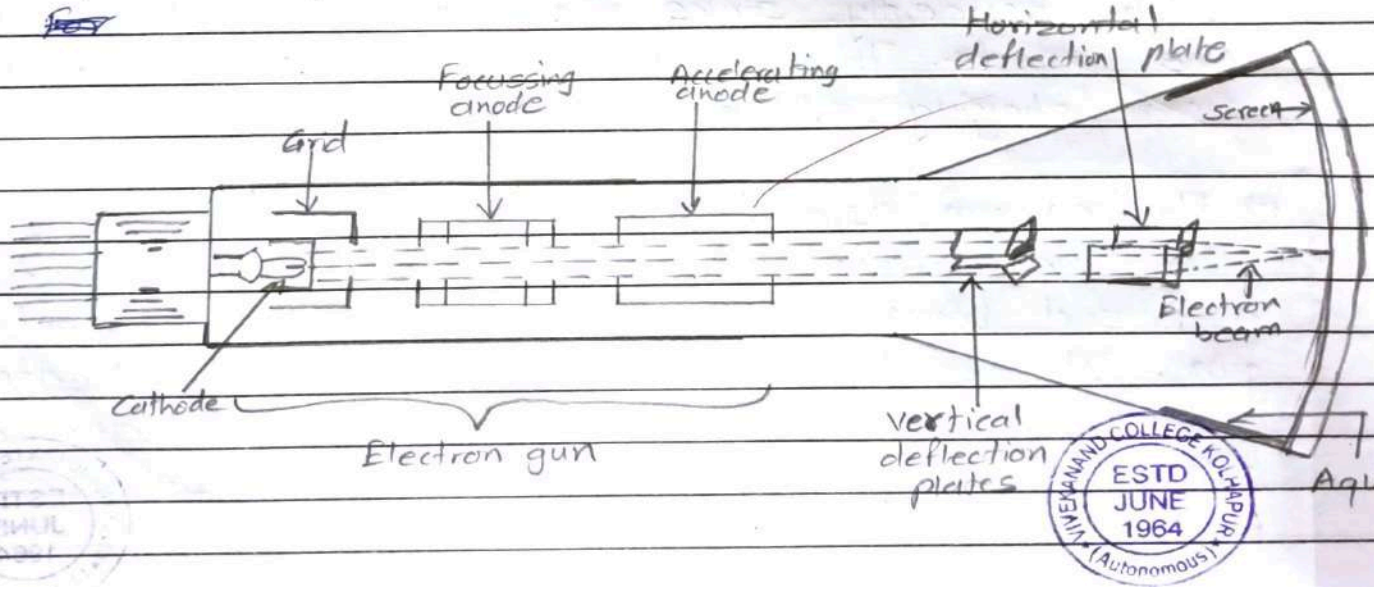
negative potential w.r.t cathode whereas the two anodes are maintained at high positive potential w.r.t. cathode.

iii) Deflection plate assembly :-

The deflection of the electron beam is achieved by two sets of deflecting plates placed within the tube beyound accelerating anode one set is the vertical deflection plates and the other set is the horizontal deflection plates. The vertical deflection plates are mounted horizontally in the tube The horizontal deflection plates are mounted in the vertical plane.

iii) Screen :-

The screen is the inside face of the tube & is coated with fluorescent material such as zinc oxide, zinc orthosilicate etc. When high velocity electron beam strikes the screen, a spot of light is produced at the point of impact. The colour of the spot depends upon the nature of fluorescent material.



Working :-

When the cathode is heated, it emits plenty of electrons. These electrons pass through control grid on their journey. The control grid has a negative potential. If negative potential on the control grid is high, few electrons will pass through it and the electron beam striking on the screen will produce a dim spot of light. If the negative potential on the control grid is reduced, the spot of light will be bright. Thus, the intensity of light spot on the screen can be changed by changing the negative potential on the control grid. After leaving the control grid, the electron beam comes under the influence focusing and accelerating anodes. These two anodes are maintained at high positive potential. ∴ they produce a field which as an electrostatic lens and it converges the electron beam at a point on the screen.

10

Q2

3) Lissajous figures may be used for accurate measurement of freq. In this method, the signal, whose frequency is to be measured, is applied to the Y-plates and known standard freq. signal is applied to the X-plates of the C.R.O

Unknown freq is calculated by the formula

$$f_y = \frac{\text{Number of loops cut by horizontal line}}{\text{number of loops cut by vertical line}} \times f_y$$

Seat No. | O.P. Code

Vivekanand College , Kolhapur (Autonomous).
B. Sc. Part-II (Semester- III) Examination Oct/Nov.2019
Subject: ASTROPHYSICS
Title of the Paper – Fundamentals of Astrophysics
Subject Code: DSC-1511C1
(Internal Examination)

Day and Date: **Total Marks: 20**

Time:

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Figures to the right indicate full marks.
4) Use of Scientific calculator or Log table is allowed.

Q.1. Select most correct alternative (5)

i) The energy associated with an electromagnetic spectrum is given by E = ...

A) $h\gamma$ B) $h\lambda$ C) $h^2\gamma$ D) $h^2\gamma^2$

ii) Wein's displacement law is given by $\lambda_m T$ = ...

A) constant B) zero C) infinite D) 100

iii) Ptolemy's theory is known as ..... theory.

A) Geocentric B) Heliocentric C) Newton's D) Einstein

iv) One Lunar cycle consists ..... days

A) 23.5 B) 26.5 C) 29.5 D)24.5

v) Terrestrial distances determined by ..... method.

A) triangular B)parabolic C) rectangular D) cubic

Q.2. Attempt any one (10)

i) What is Doppler shift? State its applications.

ii) Illustrate Copernicus theory.

Q.3. Attempt any one. (5)

i) How moon can be used as a calendar.

ii) Write a note on sun as a calendar.

iii) Explain a surveyor method used for determination of terrestrial distances.

VIVEKANAND COLLEGE KOLHAPUR (Autonomous) ESTD JUNE 1964

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur

(Autonomous)

Department of Physics

Internal exam

B.Sc.II (Astrophysics) Sem III

Date:- 25/09/2019

Attendance Sheet

Roll No.	Name Of The Student	Signature
7550	Bachche Aomkar Prakash	
7551	Banasavade Omkar Devadas	
7552	Bhatale Sachin Sakharam	
7553	Gole Gaurav Rajaram	
7554	Gurav Rutuja Ravindra	
7556	Khandekar Pooja Sanjay	
7557	Khatangale Shubhangi Prakash	
7558	Khatkale Prashant Prakash	
7559	Kudalkar Prajakta Shivaji	
7560	Mali Rohit Maruti	
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7565	Patil Akshay Dhanaji	
7566	Patil Aniket Ananda	
7567	Patil Anuja Dattajirao	
7568	Patil Prajkta Krushnat	
7569	Patil Shivani Vishnu	
7570	Pawar Aakash Anandrao	
7571	Pirai Omkar Baban	
7572	Rane Rohit Ramdas	
7573	Salokhe Atish Pundlik	
7574	Satbige Shivanand Sanjeev	
7575	Sayyad Alsaba Javed	
7576	Shelar Avinash Sanjay	
7852	Bedagkar Gauri Rahul	
7853	Chavan Ramchandra Ashok	
7854	Dayama Abhishek Ashok	
7855	Hiremath Seema Sharanayya	
7856	Jadhav Nikhil Sandeep	

VIVEKANAND COLLEGE ESTD JUNE 1964 (Autonomous)

7857	Kalgutkar Aakash Rajendra	
7858	Kore Jyoti Vinayak	
7859	Mane Malhar Uday	
7860	Patil Omkar Dhanaji	
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7863	Shaikh Soufeen Shahmahmad	
7864	Shetke Pushkraj Umesh	
7865	Shinde Siddhesh Shivaji	
7866	Waghmode Kiran Bhimrao	
7867	Yadav Durga Vaijanath	
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7872	Shetke Atharav Sanjay	
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7874	Kharase Rushikesh Dayanand	

Internal Examinar... Dr. Trupti U. Urunkar

VIVEKANAND COLLEGE KOLHAPUR (Autonomous) ESTD JUNE 1964

" ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार "

-शिक्षणमहर्षी डॉ. बापूजी साळुंखे

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VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT

Signature of Supervisor	

Suppliment No. : 24/25

Roll No. : 7567

Class : B.Sc II

Subject : Astrophysics

Test / Tutorial No. : Internal Exam

Div. :

Q.1)

1) a) hγ

2) b) Constant

3) a) Geocentric

4) c) 29.5

5) a) triangular

5

Q.2)

2) Copernican Heliocentric model.

Copernicus a polish astronomer and mathematician proposed his heliocentric model in 1542 AD. This heliocentric (Sun-centered) concept was so radical that copernicus waited until the year of his death to publish his work titled The Revolutions of the Heavenly Spheres.

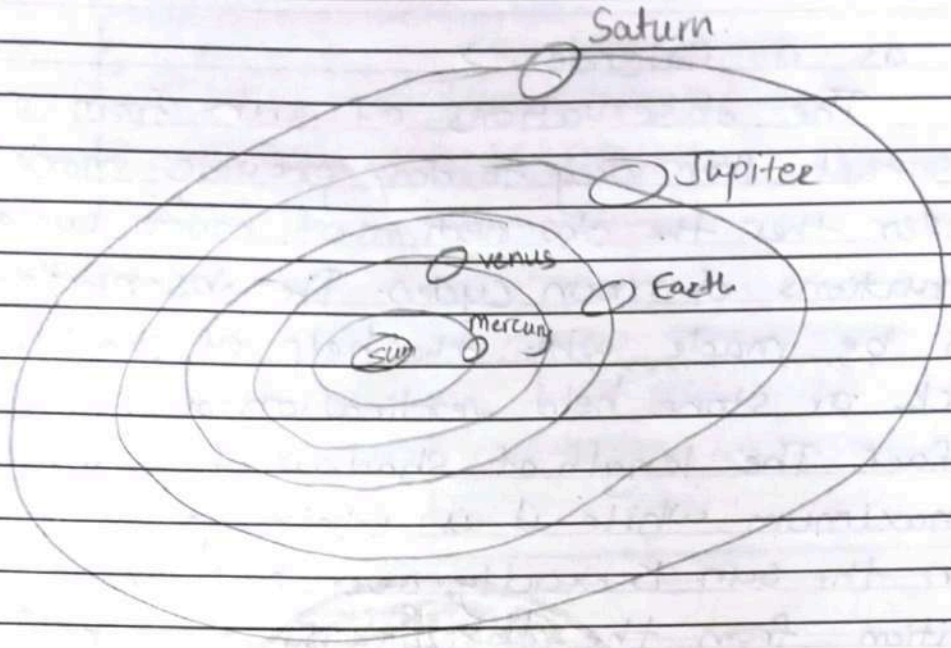
Copernicus had two main reasons for assuming that the sun was the centre,

1. Though the ptolemic model was good at predicting the predictions of the planets, it was not precise. and over the centuries its predictions got worse and worse.

2. The retrograde motions of the planets could be explained by assuming that the Earth also moves around the Sun.

Thus the sun retrograde loops of the planets as seen from the Earth occur naturally as a found result of the Earth's motion combined with the motions of the planets. Accordingly, the Sun is at the centre and all planets and distant objects stars revolve in circular orbit as shown. In fig. below.

The invention of the telescope by Galileo in 1609 and observations on orbiting moons as planet Jupiter as well as observed phases of planet just like the Earth's moon supported the heliocentric system.



(Q.3)

1) Moon as a Calender →

The moon revolve around the earth. from the earth, moon phases are observed. These moon phases were used as a calender. Phases from full moon to no moon and again to full moon is called as lunar cycle or lunar month. The One lunar month consist of 29.5 solar days. when 12 lunar months are completed from the start of spring is called the lunar year. The lunar year consist of $12 \times 29.5 = 354$ days But the Solar year consist of 365.25 days & hence the spring of next year will start after 11.25 days. This error may create a Serious problem for farmers on the earth. Hence a correction should be applied for this error. The civilizations introduced an extra month after 3 years in order to match lunar calender & cycle of seasons.

2) Sun as a Calender →

The observations of sun from sunrise to noon to sunset from day to day provide more reliable calender then the observations of moon cycles. The observations of moon cycles. The observations of sun can be made with the help of shadow of a long stick or stone held vertical on a plane earth surface. The length of shadow of sunrise & sunset is maximum while it is minimum at the noon, when the sun is exactly over head or at its highest position from the horizon The time betn two succesive noons is called as a solar day one solar day consists of 24 hours

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-शिक्षणमहर्षी डॉ. बापूजी साळुंखे

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT

Signature of Supervisor	

Suppliment No. :

Roll No. : 7554

Class : B-Sc II

Subject : Astrophysics

Test / Tutorial No. : Internal exam

Div. :

Q.1

1) a) hν

2) b) constant

3) b) heliocentric

4) c) 29-5

5) a) triangular

6)

Q.2

2) Copernicus Heliocentric model

Copernicus a polish astronomer and mathematician proposed his heliocentric model in 1542 AD. This heliocentric (sun-centered) cocept was so radical that copernicus waited until the year of his death to publish his work titled. The Revolutions of the Heavenly spheres.

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-शिक्षणमहर्षी डॉ. बापूजी साळुंखे

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT

Signature of Supervisor	

Suppliment No. :

Roll No. : 7870

Class : B.Sc II

15/25

Subject : Astrophysics

Test / Tutorial No. : Internal Exam

Div. :

Q.1)

1) a) hγ

2) b) Constant

3) a) Geocentric

4) c) 29.5

5) a) Triangular

6)

VIVEKANAND COLLEGE KOLHAPUR ESTD JUNE 1964 (Autonomous)

Q3)

2) Sun as a Calender →

The observations of Sun from sunrise to noon to sunset from day to day provide more reliable calender then the observations of moon cycles. The observations of sun can be made with the help of shadow of a long stick or stone held vertical on a plane earth surface. The length of shadow at sunrise and sunset is maximum while it is minimum at the noon, when the sun is exactly over head or at its highest position from the horizon. The time between two successive noons is called as Solar day. One solar day consist of 24 hours. The minimum length of shadow at noon depends upon the particular region on the earth and season of the year. For eg. the shadow length at noon is longest at the begining of winter.

1) Moon as a Calender →

The moon revolves around the earth from the earth, moon phases are observed. These moon phases were used as a calender called as lunar calender. Phases from full moon to no moon and again to full moon is called as lunar cycle or lunar month. One lunar month consist of 29.5 days. When 12 lunar months are completed from the start of spring it is called the lunar year. The lunar year consist of $12 \times 29.5 = 354$ days. But, the solar year consist of 365.25 solar days. and hence the spring of next year will start after 11.25 days. This error may create a serious problem for farmers on the earth. Hence a correction should be applied for this error.