PSC & KVSC Government College
(Affiliated to Rayalaseema University, Kurnool)
Bommalasatram, Nandyal, Nandyal District
Andhra Pradesh - 518502

DEPARTMENT OF PHYSICS
EVALUATION METHODS

REVISED SYLLABUS OF PHYSICS UNDER CBCS FRAMEWORK

WITHEFFECT FROM 2020-21

RAYALASEEMA UNIVERSITY, KURNOOL

PROGRAMME: FOUR-YEAR UG HONOURS PROGRAMME

PHYSICS

(FOR MATHEMATICS COMBINATIONS)

B.Sc. PHYSICSSYLLABUS UNDER CBCS

[For Mathematics combinations]

w.e.f. 2020-21 (Revised in May 2020)

First Semester *Course I*: Mechanics, Waves and Oscillations Practical Course I (Lab-1)
Second Semester *Course II*: Wave Optics Practical Course II (Lab-2)
Third Semester *Course III*: Heat and Thermodynamics Practical Course III (Lab-3)
Fourth Semester *Course IV*: Electricity, Magnetism and Electronics Practical Course IV (Lab- 4)
Course V:Modern Physics Practical Course V (Lab-V)

B.Sc. PHYSICS COURSE STRUCTURE UNDER CBCS

Year	***Semester***	***Course***	***Title of the Course***	***Marks***	***No.ofHrs /Week***	***No.of Credits***
I	I	I	Mechanics, Waves and Oscillations	100	4	03
			Practical Course- I	50	2	02
	II	II	Wave Optics	100	4	03
			Practical Course – II	50	2	02
II	III	III	Heat and Thermodynamics	100	4	03
			Practical Course – III	50	2	02
	IV	IV	Electricity, Magnetism and Electronics	100	4	03
			Practical Course – IV	50	2	02
			Modern Physics	100	4	03

		V	Practical Course –V	50	2	02
Total No. of Courses : **05 (Five)**						

Skill Enhancement Courses (SECs) for Semester-V from 2022-23

(To choose one pair from the three alternate pairs of SECs)

Univ. Code	Course No. 6&7	NameofCourse	Th.Hrs / Week	IE Marks	EE Marks	Credits	Prac Hrs/ Wk	Marks	Credits
	6A	OpticalInstrumentsand Optometry	3	25	75	3	3	50	2
	7A	OpticalImagingand Photography	3	25	75	3	3	50	2
OR									
	6B	LowTemperaturePhysics & Refrigeration	3	25	75	3	3	50	2
	7B	SolarEnergy and Applications	3	25	75	3	3	50	2
OR									
	6C	ApplicationsofElectricity&Electronics	3	25	75	3	3	50	2
	7C	Electronic Instrumentation	3	25	75	3	3	50	2

Note-1: *For Semester–V, for the domain subject Physics, any one of the above three pairs of SECs shallbe chosen as courses6 and7,i.e.,6A &7Aor6B &7B or6C &7C.Thepairshall not be broken (ABC allotment is random, not on any priority basis*).

Note-2: *One of the main objectives of Skill Enhancement Courses (SEC) is to inculcate skills related to the domain subject in students. The syllabus of SEC will be partially skill oriented. Hence, teachers shall also impart practical training to students on the skills embedded in syllabus citing related real field situations.*

ANNEXURE - II CBCS CURRICULAR FRAMEWORK (2020- 21ONWARDS) -BACHELOR OF SCIENCES

Subjects		SEMI		SEMII		SEMIII		SEM IV		SEMV		SEMVI			
		Hrs/W	Credits	Hrs/W	Credits	Hrs/W	Credits	Hrs/W	Credits	Hrs/W	Credits	Hrs/W	Credits		
Languages															
English		4	3	4	3	4	3								
Language(H/T/S)		4	3	4	3	4	3								
Life SkillCourses		2	2	2	2	2+2	2+2								
SkillDevelopment Courses		2	2	2+2	2+2	2	2								
Major 1	Core1,2,3,& 4	4+2	4+1	4+2	4+1	4+2	4+1	4+2	4+1						
Major 2	Core1,2,3,& 4	4+2	4+1	4+2	4+1	4+2	4+1	4+2	4+1						
Major 3	Core1,2,3,& 4	4+2	4+1	4+2	4+1	4+2	4+1	4+2	4+1						
Major 1	Core-5							4+2	4+1						
Major 2	Core-5							4+2	4+1						
Major 3	Core-5							4+2	4+1						
Major 1	SkillEnhancement Courses(6 &7)									4+2	4+1				
										4+2	4+1				
Major 2	SkillEnhancement Courses(6 &7)									4+2	4+1				
										4+2	4+1				
Major 3	SkillEnhancement Courses(6 &7)									4+2	4+1				
										4+2	4+1				
Hrs/W (Academic Credits)		30	25	32	27	32	27	36	30	36	30		12	4	4
ProjectWork															
Extension Activities	(Non														
NCC/NSS/Sports/Extra Curricular									2						
Yoga							1		1						
Extra Credits															
Hrs/W (Total Credits)		30	25	32	27	32	28	36	33	36	30		12	4	4

THIRD PHASEof APPRENTICESHIP Entire 5th / 6th Semester

FIRSTand SECOND PHASES (2 spells) of APPRENTICESHIP between1stand 2nd year and between 2nd and3rdyear(two summer vacations).

RAYALASEEMA UNIVERSITY, KURNOOL

APSCHE/ REVISION OF C.B.C.S – PHYSICS COURSE W.E.F.2022-23

S. No.	Semester	Title of the Course (Paper)	Hours /week	Max. Marks (SEE)	Marks in CIA	Credits
1	Sem.-I/ Course-1	Mechanics, Waves and Oscillations	04	75	25	03
	Course-1 Practical	Practical Course- I	02	Max. Marks-50 External assessment at Semester end		02
2	Sem.-II/ Course-2	Wave Optics	04	75	25	03
	Course-2 Practical	Practical Course – II	02	Max. Marks-50 External assessment at Semester end		02
3	Sem.-III/ Course-3	Heat and Thermodynamics	04	75	25	03
	Course-3 Practical	Practical Course – III	02	Max. Marks-50 External assessment at Semester end		02
4	Sem.-IV Course-4	Electricity, Magnetism and Electronics	03	75	25	03
	Course-4Practical	Practical Course – IV	03	Max. Marks-50 External assessment at Semester end		02
5	Sem.- IV Course- 5	Modern Physics	03	75	25	03
	Course- 5 Practical	Practical Course –V	03	Max. Marks-50 External assessment at Semester end		02
6	Sem.– V Course–6	Domain related Skill Enhancement Courses (02) Three (3) pairs of courses (each pair has 2 related courses) will be offered and student to choose a pair of courses.	03	75	25	03
			03	Max. Marks-50 External assessment at Semester end		02
			03	75	25	03
			03	Max. Marks-50 External assessment at Semester end		02

Structure of SECs for Semester–V

(To choose one pair from the four alternate pairs of SECs)

Univ.Code	CourseNO.6&7	NameofCourse	Th. Hrs./ Week	IE Marks	EE Marks	Credits	Prac. Hrs./ Wk.	Marks	Credits
	6A	OpticalInstrumentsand Optometry	3	25	75	3	3	50	2
	7A	OpticalImagingand Photography	3	25	75	3	3	50	2
		OR							
	6B	LowTemperaturePhysics & Refrigeration	3	25	75	3	3	50	2
	7B	SolarEnergy and Applications	3	25	75	3	3	50	2
		OR							
	6C	ApplicationsofElectricity&Electronics	3	25	75	3	3	50	2
	7C	Electronic Instrumentation	3	25	75	3	3	50	2
		OR							

Note-1: *For Semester–V, for the domain subject Physics, any one of the above three pairs of SECs shallbe chosen as courses6 and7,i.e.,6A &7Aor6B &7B or6C &7C.Thepairshall not be broken (ABC allotment is random, not on any priority basis*).

Note-2: *One of the main objectives of Skill Enhancement Courses (SEC) is to inculcate skills related to the domain subject in students. The syllabus of SEC will be partially skill oriented. Hence, teachers shall also impart practical training to students on the skills embedded in syllabus citing related real field situations.*

INTERNAL ASSESSMENT:

Name of the Examination	Question Type	Marks Allotted	Total Marks
Mid Examination-I	Multiple Choice	5X1/2=21/2M	20M
	Fill in the Blanks	5X1/2=21/2M	
	Short Answer Questions	5X2=10	
	Essay Question	1X5=5M	
Mid Examination-I	Short Answer Questions	5X2=10	15M
	Essay Question	1X5=5M	
Student Seminar	02 Seminars	5M	5M
Assignment	5 Questions one from each unit	5M	5M
Attendance	More than 75%	3M	3M
Clean green Programme	Participation	2M	2M
TOTAL			50M

Continuous Internal Assessment(CIA):

STUDENT EVALUATION FORM

CONTINUOUS INTERNAL ASSESMENT (CIA)

Name of the Faculty: Dr. V. Ramesh Kumar
Subject: PHYSICS
Title of the Paper: 20C53077B PHYSICS PAPER-7B:Solar energy & Applications
Year : III Semester :VI
Program Code : MPCs

Course code : Course: PHYSICS

S.No.	Student Name	Hall Ticket No.	Mid 1 Exam	Mid 2 Exam	Total(Mid 1 + Mid 2)	Assignments	Field Trip/Seminar/GD	Attendance & Clean & Green	Total(I + II + III + IV)	Scale down to 30	Semester End Examination (SEE)	Total (CIA + SEE)	Result	Practical	Result	Remarks
			20	**15**	**35**	**5**	**5**	**5**	**50**	**30**	**70**	**100**	**P/F**	**50**	**P/F**	
					I	**II**	**III**	**IV**								
1	A. Abdul kalam	20360023001	15	13.5	28.5	5	4	5	43	**26**	**AB**	AB	P	A+	P	
2	B. Ashok	20360023002	0	13.5	13.5	5	4	5	28	**17**	**A**	P	P	O	P	
3	Shaik Baragaj Shahana	20360023004	0	14	14	4	4	AB	AB	**AB**	**B+**	P	P	A	P	
4	M. chandrakanth	20360023006	14.5	14	28.5	5	5	5	38	**23**	**A**	**P**	**P**	**O**	**P**	
5	G. Dhanunjay	20360023008	12.5	13	25.5	4	3	5	38	**23**	**C**	P	P	A	P	
6	K. Sunil Gavaskar	20360023009	12	13	25	4	3.5	4	37	**22**	**B+**	P	P	A+	P	
7	V. Gnana Vedam	20360023010	13	14	27	3	3	4	37	**22**	**C**	P	P	A	P	

EXTERNAL ASSESSMENT:

B.Sc. PHYSICS

[For Mathematics combinations]

w.e.f. 2020-21 (Revised in May 2020)

MODEL QUESTION PAPER COMMON FOR ALL FIVE THEORY COURSES

Time : 3 hrs *Max marks : 75*

SECTION-A

(Essay Type Questions) *Marks* : 5x10M = 50M

Answer All questions with internal choice from each Unit

1. Essay type question from Unit-I

   Or

   Essay type question from Unit-I

2. Essay type question from Unit-II

   Or

   Essay type question from Unit-II

3. Essay type question from Unit-III

   Or

   Essay type question from Unit-III

4. Essay type question from Unit-IV

   Or

   Essay type question from Unit-IV

5. Essay type question from Unit-V

   Or

   Essay type question from Unit-V

SECTION-B

(Short Answer Type Questions)

Answer any five out of the following ten questions *Marks* : 5x5M = 25M

6. Short answer type question from Unit-I
7. Short answer type question from Unit-I
8. Short answer type question from Unit-II
9. Short answer type question from Unit-II
10. Short answer type question from Unit-III
11. Short answer type question from Unit-III
12. Short answer type question from Unit-IV
13. Short answer type question from Unit-IV
14. Short answer type question from Unit-V
15. Short answer type question from Unit-V

[**Note:** *Question Paper setters are instructed to add Numerical Problems (each of 4 marks) with a maximum weightage of 16 marks either in Section-A or Section-B covering all the fiveunits in the syllabus*]

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Model Question Papers for Internal Examination, 2022-2023

PSC & KVSC Government Degree College, Nandyal
IIMpcs (E.M) Sem -3 Subject: Physics
Paper 3: Heat and Thermodynamics

Internal Exam-1 **Max Marks: 20 M** **Time:1hour**

Section –AWrite any one question out of given three ……..1x5=5M

1. Derive expression for efficiency of carnots engine?
2. State and prove carnotstheorem?
3. Derive the Maxwells thermodynamic relations from thermodynamic potentials?

Section–BWrite any five questions from the fallowing ….5x2 = 10M

4) Write the differences between isothermal and adiabatic process?
5) State 2nd Law of Thermodynamics (Kelvin's and Clausius statements)?
6) What is entropy? Write the significance of entropy?
7) Derive the expression for change of entropy in an irreversible process?
8).What are Thermodynamic potentials, write their significance?
9) Derive the Clausius –Clapeyron equation? What is its importance?
10) What is the efficiency of a Carnot's engine working between the temperatures of source and sink as 327°C and 127°C ?

Section-Cwrite all questions. Each carries ½ mark …….10 x ½ M = 5 M

11. A reversible carnotscycle has following processes.
(A) 4 isothermal processes (B) 4 adiabatic processes
(C) 2 isothermal and 2 adiabatic processes (D) 2 isothermal and 2 isobaric processes
12. The efficiency of a Carnot cycle may be increased by.....
A) Increasing the temperature of source or increasing the temperature of sink
B) Increasing the temperature of source or decreasing the temperature ofsink
C) decreasing the temperature of source or increasing the temperature of sink
D) decreasing the temperature of source or Decreasing the temperature of sink
13. Zeroth law of thermodynamics.....
A).Deals with conversion of mass B).Deals with reversibility of processC).States that if two system are both in equilibrium with a third system,they are in thermal equilibrium with each otherD).Deals with heat engines
14. In isothermal process , which law is obeyed
A)Boyles law B) Charles 1st law C) Charles 2nd law D) Avagadros law
15.When a gas is compressed suddenly its temperature
A) decreases B) rises c)remains unchangedD) none of above
16.The physical quantity that remains constant during adiabatic process is ..
A) temperature B) Pressure C) Volume D) Entropy
17.WhichLaw of Thermodynamics is used to understand the concept of conservation of energy A) 1st law B) 2nd law c) 3rd Law D) zeroth Law
18.In which process there is no flow of heat between system andsurroundings
A) Isothemal B) IsochoricC) Isobaric D) Adiabatic
19. In a reversible process entropy is equals to ------
a)zeroB) increases C) decreases D) remains constant
20. The efficiency of reversible engine is always ----------(greater/ lesser) than the efficiency of a reversible engine working between the same two temparatures.

2022-2023

PSC & KVSC Government Degree College, Nandyal

II Mpcs (E.M) Sem -3 Subject : physics

Paper 3 : Heat and Thermodynamics

Internal Exam-2 Max Marks :15M Time:1hour

Section –AWrite any one question out of given three ……..1x5=5M

1) What is Joule-Thomson effect?Obtain an expression for cooling produced when a gas suffered Joule Thomson effect?

Or

Derive Plancks Law for distribution of energy in black body radation .

Or

Define Solar constant? Explain how it can be determined experimentally using Angstomphyreliometr?

Section–BWrite any five questions from the fallowing ….5x2 = 10M

2) What are results from the Black body energy distribution curves?

3) Deduce wein's law from planckradation law ?

4) What is a Blackbody? DesribeFerrys black body?

5) What is the principle of adiabatic demagnetization , draw a neat diagram

6)Distiguish between joule Thomson, adiabatic expansion and joule expansion

7)How the temperature of sun is determined?

8)Find thewavelength at which maximum energy is radiated by a blackbody having a temperature of 327°C Given the Wein's constant as 2.897×10^{-3}mK

Model Question paper for Practical Examination

1. Determine of radius of curvature of a given convex lens-Newton's rings.
2. Determine the Dispersive power of a prism.
3. Determine of wavelength of light using diffraction grating-normal incidence method.
4. Calculate the Refractive index of a liquid-hallow prism.
5. Determine the thickness of a thin wire by wedge method
6. Determine the refractive index of liquid-Boy's method.

The marks distribution for the Semester End practical examination

Scheme of Valuation for Practical Examination

Semester – II/ Physics Core Course – II

Max. Time: 3Hrs. Max. Marks: 50M

(i) Formula/ Principle / Statement with explanation of symbols ……....05 M
(ii) Diagram/Circuit Diagram / Tabular Columns … … … … … ……..10 M
(iii) Setting up of the experiment and taking readings/Observations…….. 10 M
(iv) Calculations (explicitly shown) + Graph + Result with Units… …….10 M
(v) Viva-voce … … … … … … … … … … … … … … … … … … ……05 M
(vi) Class Records (to be valued at the time of practical……10 M
Total Marks : 50 M

METHOD OF GRADING:

Evaluation (both internal and external) is carried out using Mark system. The Grade on the basis of total internal and external marks will be indicated for each course, for each semester and for the entire programme. Indirect Grading System in 10-point scale is as below:

TEN POINTS IN DIRECT GRADING SYSTEM

Percentage of Marks(Both Internal & Externalput together)	Grade	Interpretation	Grade point Average (G)	Range of grade points	Class
95and above	O	Outstanding	10	9.5- 10	FirstClasswith Distinction
85tobelow95	A+	Excellent	9	8.5- 9.49	
75tobelow85	A	Verygood	8	7.5- 8.49	
65tobelow75	B+	Good	7	6.5- 7.49	FirstClass
55tobelow65	B	Satisfactory	6	5.5- 6.49	
45tobelow55	C	Average	5	4.5-5.49	SecondClass
35tobelow45	P	Pass	4	3.5-4.49	ThirdClass
Below35	F	Failure	0	0	Fail
Incomplete	I	Incomplete	0	0	Fail
Absent	Ab	Absent	0	0	Fail