MAR THOMA COLLEGE FOR WOMEN PERUMBAVOOR

TEACHING-LEARNING AND EVALUATION

MECHANISM OF INTERNAL/EXTERNAL EXAMINATION

2.5.1 Mechanism of internal/external assessment is transparent and the grievance redressal system is time bound and efficient

INDEX

Mechanism of Internal/external Assessment

Internal Assessment is an integral part of student assessment and grading for both UG and PG programs. The components of internal assessment and the regulations are clearly laid down in the syllabus documents designed by the University. The students are given proper awareness regarding internal assessment at the time of their induction and initial orientation programs itself. The schedules of internal assessment components such as attendance, test papers, seminars, assignments, viva voce etc. are also made known to the students in advance. The college handbook and the website provide them with an elaborate description about the evaluation process. A teacher is assigned for each course who will be responsible for the evaluation of various components of the assessment process. Assignments and seminars are evaluated by the course teacher and the performances are discussed with the students and opportunities are given for betterment of performances. As attendance is a component for Internal Evaluation of UG programmes, students who represent the college for co-curricular and extra-curricular activities are given compensatory attendance to make good the loss of attendance percentage. Though flexibility is not allowed by the University on the components, the college makes sure that the entire process is done in a transparent manner so that all students get an equal and fair chance of performance. After the scores of test papers are published, complaints are addressed by the teachers concerned and re-examinations are offered, if necessary. Internal assessment is a continuous evaluation process. The Internal Assessment scores and grades are published for the student verification by the course -in-charge before the commencement of the end-semester examinations in a standardized format titled ‘A’ Form. After verification by the students, the class-in-charge will consolidate the scores of all the courses of the semester and publish a consolidated score sheet or ‘B’ Form which the students verify and then sign on a copy of the same. The verification of the scores is

usually done by the course in charge, the class in charge and then by the Head of the Department with the assistance of the Internal Assessment co-ordinator of each department. The department level co-ordinator and the Head of the Department give a written undertaking regarding the final scores and is in charge of the entry of the same in the University Examination portal. The external exam is conducted in college as per the directions given by Mahatma Gandhi University.

Regulations for Undergraduate Programmes under Choice Based Credit System 2017(CBCS)

EXAMINATIONS

The evaluation of each paper shall contain two parts:

(i) Internal or In-Semester Assessment (ISA)

(ii) External or End-Semester Assessment (ESA)

Theinternaltoexternalassessmentratioshallbe1:4.

Both internal and external marks are to be rounded to the next integer.

All papers (theory & practical), grades are given **ona7-pointscale** based on the total percentage of marks, ***(ISA+ESA)*** as given below:-

PercentageofMarks	Grade	GradePoint
95andabove	S-Outstanding	10
85tobelow 95	A^+-Excellent	9
75tobelow 85	A-VeryGood	8
65tobelow 75	B^+-Good	7
55tobelow 65	B-AboveAverage	6
45tobelow 55	C-Satisfactory	5
35tobelow 45	D-Pass	4
Below35	F-Failure	0
	Ab-Absent	0

CREDITPOINTANDCREDITPOINTAVERAGE

Credit Point(CP)of a paper is calculated using the formula:-

CP=C×GP, where C is the Credit and GP is the Grade point

Semester Grade Point Average (SGPA)of a Semester is calculated using the formula: -

SGPA=TCP/TC, where TCP is the Total Credit Point of that semester.

Cumulative Grade Point Average (CGPA) is calculated using the formula: -

CGPA=TCP/TC, where TCP is the Total Credit Point of that programme.

Grade Point Average (GPA) of different category of courses viz. Common Course I, Common Course II, Complementary Course I, Complementary Course II, Vocational course, Core Course is calculated using the formula:-

GPA=TCP/TC, where TCP is the Total Credit Point of a category of course, TC is the total credit of that category of course.Grades for the different courses, semesters and overall programme are given based on the corresponding GPA as shown below:

GPA	Grade
9.5andabove	***S*–*Outstanding***
8.5tobelow9.5	**A+-Excellent**
7.5tobelow8.5	**A-VeryGood**
6.5tobelow7.5	**B+-Good**
5.5tobelow6.5	**B-AboveAverage**
4.5tobelow5.5	**C–Satisfactory**
3.5tobelow4.5	**D–Pass**
Below3.5	**F–Failure**

MARKS DISTRIBUTION FOR EXTERNAL AND INTERNAL EVALUATIONS

The external theory examination of all semesters shall be conducted by the University at the end of each semester. Internal evaluation is to be done by continuous assessment. For all courses without practical total marks of external examination is 80 and total marks of internal evaluation is 20. Marks distribution for external and internal assessments and the components for internal evaluation with their marks are shown below:

For all courses without practical

a) Marks of external Examination :80

b) Marks of internal evaluation :20

Components of Internal Evaluation of theory	Marks
Attendance	5
Assignment/Seminar/Viva	5
Test papers (2x5=10)	10
Total	**20**

Forallcourseswithpracticaltotalmarksforexternalevaluationis60 and total marks for internal evaluation is 15.

For all courses with practical

a) Marks of externa lExamination:60

b) Marks of internal evaluation :15

Components of Internal Evaluation	Marks
Attendance	**5**
Assignment/Seminar/Viva	**2**
Test papers(2x4)	**8**
Total	**15**

(c)For practical examinations total marks for external evaluation is 40 and for internal evaluation 10

Components of Internal evaluation of Practical	Marks
Attendance	2
Test paper(1x4)	4
Record*	4
Total	**10**

*Marks awarded for Record should be related to number of experiments recorded and duly signed by the teacher concerned in charge.

All three components of internal assessments are mandatory.

For projects

a) **Marks of external evaluation:80**

b) **Marks of internal evaluation :20**

Components of External Evaluation of Project	Marks
Dissertation (External)	50
Viva-Voce (External)	30
Total	**80**

*****Marks for dissertation may include study tour report if proposed in thes yllabus.

Components of internal Evaluation of Project	Marks
Punctuality	5
Experimentation/data collection	5
Knowledge	5
Report	5
Total	**20**

Attendance Evaluation for all papers

% of attendance	Marks
90andabove	5
85–89	4
80–84	3
76–79	2
75	1

(Decimals are to be rounded to the next higher whole number)

ASSIGNMENTS

Assignments are to be done from 1st to 4th Semesters. At least one assignment should be done in each semester for all courses.

SEMINAR/VIVA

A student shall present a seminar in the 5th semester for each paper and appear for viva-voce in the 6th semester for each course.

Note: A separate minimum of 30% marks each for internal and external (for both theory and practical) and aggregate minimum of 35% are required for a pass for a paper. For a pass in a programme, a separate minimum of **Grade D** is required for all the individual papers. If a candidate secures **F Grade** for any one of the papers offered in a Semester/ Programme **only F grade** will be awarded for that Semester/ Programme until he/she improves this to **D Grade** or above within the permitted period.

Regulations of the Post Graduate Programmes under Credit Semester System,2019(MGU-PG-CSS2019)

Examinations

There shall be University examinations at the end of each semester.

Practical examinations shall be conducted by the University at the end of each semester or at the end of even semesters as prescribed in the syllabus of the particular programme.

End-Semester Examinations: The examinations shall normally be conducted at the end of each semester for college going student.

Thereshallbeoneend-semesterexaminationof3hoursduration for each lecture based and practical courses.

A question paper may contain short answer type/annotation, short essay type questions/problems and long essay type questions. Different types of questions shall have different weightage.

EVALUATIONANDGRADING

Evaluation: The evaluation scheme for each course shall contain two parts; (a) End Semester Evaluation (ESE) (External Evaluation) and (b) Continuous Evaluation (CE) (Internal Evaluation). 25% weightageshallbegiventointernalevaluationandtheremaining75% to external evaluation and the ratio and weightage between internal and external is 1:3. Both End Semester Evaluation (ESE) and Continuous Evaluation (CE)shall be carried out using direct grading system.

Direct Grading: The direct grading for CE(Internal) and ESE (External Evaluation) shall be based on 6 letter grades (A+, A, B, C, D and E) with numerical values of 5, 4, 3, 2, 1 and 0 respectively.

Grade Point Average (GPA): Internal and External components are separately graded and the combined grade point withweightage1

for internal and 3 for external shall be applied to calculate the Grade Point Average (GPA) of each course. Letter grade shall be assigned to each course.

Internal evaluation for Regular programme: The internal evaluation shall be based on predetermined transparent system involving periodic written tests, assignments, seminars, lab skills, records, viva- voce etc.

Components of Internal (CE) and External Evaluation (ESE): Grades shall be given to the evaluation of theory/practical/project/ comprehensive viva-voce and all internal evaluations are based on the Direct Grading System.

There shall be no separate minimum grade point for internal evaluation.

The model of the components and its weightages for Continuous Evaluation (CE) and End Semester Evaluation (ESE) are shown below:

a) For Theory(CE)(Internal)

	Components	**Weightage**
i)	Assignment	1
ii)	Seminar	2
iii)	BestTwoTestPapers	2(1each)
	Total	5

(Gradesofbesttwotestpapersshallbeconsidered.Fortestpapers allquestionsshallbesetinsuchawaythattheanswerscanbeawardedA+, A,B,C,D,Egrade.)

b) For Theory(ESE)(External)

Evaluation is based on the pattern of question specified below.

Sl. No.	Type of Questions	Weight	Number of questions to be answered
1.	Short Answer type questions	1	8outof10
2	Short essay/ problem solving type questions	2	6outof8
3.	Long Essay type questions	5	2outof4

c) For Practical (CE)(Internal)

Components	Weightage
Written/Lab test	2
Lab involvement and Record	1
Viva	2
Total	5

d) For Practical(ESE)(External)

Components	Weightage
Written/Labtest	7
LabinvolvementandRecord	3
Viva	5
Total	15

(The components and the weightage of the components of the practical(External) can be modified by the concerned BOS without changing the total weightage 15.)

e) For Project (CE)(Internal)

Components	Weightage
Relevanceofthetopicandanalysis	2
Projectcontentandpresentation	2
Projectviva	1
Total	5

(The components and the weightage of the components of the project (Internal)canbemodifiedbytheconcernedBOSwithoutchangingthetotalweightage5.)

f) For Project(ESE)(External)

Components	Weightage
Relevance of the topic and analysis	3
Project content and presentation	7
Project viva	5
Total	15

(The components and the weightage of the components of the Project(External)canbemodifiedbytheconcernedBOSwithoutchangingthetotalweightage15.)

g) Comprehensive viva-voce (CE)(Internal)

Components	Weightage
Comprehensive viva-voce (all courses from first semester to fourth semester)	5
Total	5

(WeightageofthecomponentsoftheComprehensiveviva-voce(internal)shallnotbemodified.)

h) Comprehensive viva-voce (ESE)(External)

Components	Weightage
Comprehensive viva-voce (all courses from first semester to fourth semester)	15
Total	15

(WeightageofthecomponentsoftheComprehensiveviva-voce(external)shall not be modified.)

Direct Grading System

Direct Grading System based on a 6— point scale is used to evaluate the Internal and External examinations taken by the students for various courses of study.

Grade	Grade Points	Range
A+	5	4.50to5.00
A	4	4.00to4.49
B	3	3.00to3.99
C	2	2.00to2.99
D	1	0.01to1.99
E	0	0.00

Performance Grading

Students are graded based on their performance (GPA/SGPA/ CGPA) at the examination on a 7-point scale as detailed below.

Range	Grade	Indicator
4.50to5.00	A+	Outstanding
4.00to4.49	A	Excellent
3.50to3.99	B+	Very good
3.00to3.49	B	Good (Average)
2.50to2.99	C+	Fair
2.00to2.49	C	Marginal (pass)
upto1.99	D	Deficient (Fail)

No separate minimum is required f or internal evaluation for a pass, but a minimum C grade is required for a pass in a next Internal evaluation. However, a minimum C grade is required for pass in a course.

A student who fails to secure a minimum grade for a pass in a course will be permitted to write the examination along with the next batch.

Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA)Calculations

The **SGPA** is the ratio of sum of the credit points of all courses taken by a student in the semester to the total credit for that semester. After the successful completion of a semester, Semester Grade Point Average (SGPA) of a student in that semester is calculated using the formula given below.

Semester Grade Point Average-SGPA(Sj)

$$=S(CiXGi)/SCi$$

(SGPA=Total credit Points awarded in a semester /Total credits of the semester)

Where'Sj' is the jth semester,'Gi' is the grade point scored by the student in the ith course 'Ci' is the credit of the ith course.

Cumulative Grade Point Average (CGPA) of a Programme Is calculated using the formula :-

Cumulative Grade Point Average (CGPA)

$$=S(CiXSi)/SCi$$

(CGPA= Total credit points awarded in all semesters / Total credits of the programme)

Where $'C_i$ is the credits for the **i** $_{th}$ Semester 'Si' is the SGPA for the i" semester. The SGPA and CGPA shall be rounded off to 2 decimal points.

For the successful completion of semester, a student shall pass all courses and score a minimum **SGPA** of 2.0.However, a student is permitted to move to then next semester irrespective of her/his **SGPA**.

College Hand Book

MAR THOMA COLLEGE FOR WOMEN

PERUMBAVOOR, KERALA - 683 542

Affiliated to Mahatma Gandhi University, Kottayam

Re-accredited with 'B+' Grade by NAAC in 2017

HANDBOOK & CALENDAR
2021 - 2022

Phone : 0484 - 2522723
Website : www.marthomacollege.ac.in
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Fax : 0484 - 2520823

MAR THOMA COLLEGE FOR WOMEN
PERUMBAVOOR-683542

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DELEGATIONS 2021-2022

Name of the Programme	Staff in Charge	Department
AISHE	Dr. Vineed Kumar K.	Physical Edn.
Alumni Association	Dr. Vinod V. Ms. Saritha N.	History Commerce
Assembly	Dr. Anupama P.	Physics

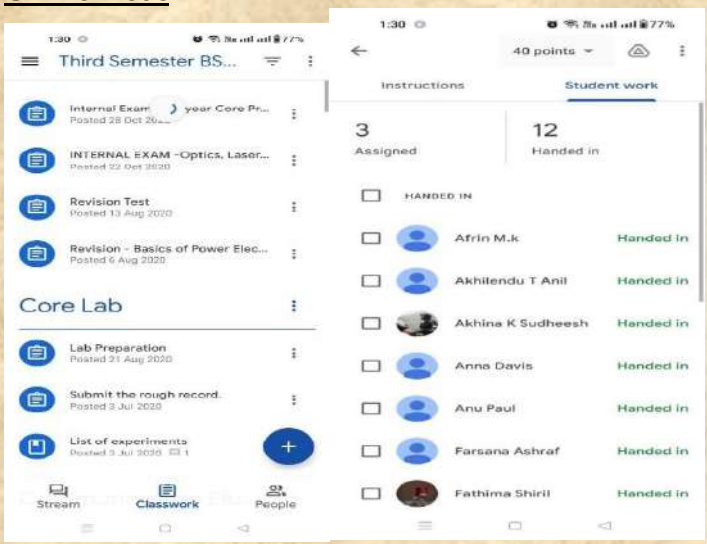
B.Voc (Nodal Officer)	Dr. Minu Susan Koshy	English
B.Voc (Co-ordinator)	Mr. Sreekumar N.	B.Voc
Calendar & Handbook	Dr. Rajani Jacob	Physics
CAP (Nodal Officer)	Dr. Vineed Kumar K.	Physical Edn.
Career Guidance & Placement Cell	Mr. Jibin Shibu Sam	Commerce
EBSB	Ms. Preethi Sara Joseph	English
Exam Co-ordinators	Dr. Bibin Kuriakose Ms. Serene Anna Sam	History Commerce
Guidance and Counselling	Ms. Angel Mathew	Counsellor
Higher Edn. New Initiatives : ASAP FLAIR	 Dr. Melvi Chandy Dr. Anupama P.	 Physics Physics
IEDC	Dr. Paulose Thomas	Physics
IIC	Dr. Rajani Jacob Ms. Serene Anna Sam	Physics Commerce
IIeLT Co-ordinator	Dr. Paulose Thomas	Physics
IQAC Co-ordinator	Dr. Anupama P.	Physics
IQAC Secretary	Dr. Minu Susan Koshy	English
Magazine	Dr. Minu Susan Koshy	English
Medicinal Garden	Ms. Keerthi Sasidharan	Botany
Morning Hymn	Ms. Anandhi R.	Commerce
Morning Worship	Ms. Sherin T. Abraham Ms. Roshin T. Roy	Commerce English
NCC	Ms. Sangeetha Rachel Koruth	English
NPTEL - SPOC	Ms. Supriya Susan Kurian	Library
NSS	Dr. Melvi Chandy Ms. Roshin T. Roy	Physics English

Conduct of Internal Exam

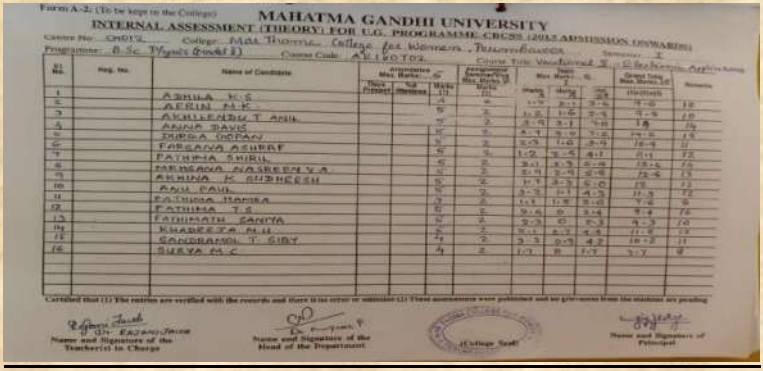
1. Offline mode
2. Online mode
3. A form- sample
4. B form – sample

Offline mode exam

Online Mode



A Form Sample



Form A-2: (To be kept in the College)

MAHATMA GANDHI UNIVERSITY

INTERNAL ASSESSMENT (THEORY) FOR U.G. PROGRAMME CBCSS (2017 ADMISSION ONWARDS)

Centre No: C0012 College: Mar Thoma College for Women, Perumbavoor Semester: I

Programme: B.Sc Physics (Model I) Course Code: AE1E0T02 Course Title: Vocational I - C Programming Applications

Sl No.	Reg. No.	Name of Candidate	Attendance Max. Marks: 5			Assignment/ Seminar/Viva Max. Marks: 10	Tests Max. Marks: 40			Grand Total Max. Marks: 100	Remarks
			Days Present	% of Attendance	Marks (1)	Marks (2)	Marks (3)	Marks (4)	Marks (5)	Marks (6)	(3+4+5+6)
1		ASHNA K.S			4	8	17	20	20	19	76
2		AFRIN M.K			5	9	18	20	19	19	76
3		AKHILENDU T ANIL			5	8	16	19	19	18	72
4		ANNA JAVIS			5	7	15	19	19	18	71
5		ANNA JOSEPH			5	8	17	19	19	19	74
6		FARSANA ASHRAF			5	8	16	18	19	18	71
7		FATHIMA SHIRIL			5	8	19	20	20	19	78
8		FATHIMA NASREEN V.A			5	8	18	19	19	18	74
9		HEMINA K SUDHEESH			5	8	19	19	19	19	76
10		JINU PAUL			5	8	17	19	19	18	73
11		FATHIMA HAMNA			5	8	18	19	19	19	75
12		FATHIMA T.A			5	8	19	19	19	19	76
13		FATHIMATH SANIYA			5	8	19	19	19	19	76
14		KHADEEJA M.H			5	8	18	19	19	18	74
15		SANDHAMOL T. SIBY			4	8	19	19	19	19	76
16		SURYA M.C			4	8	18	19	19	19	75

Certified that (1) The entries are verified with the records and there is no error or omission (2) These assessments were published and no grievances from the students are pending

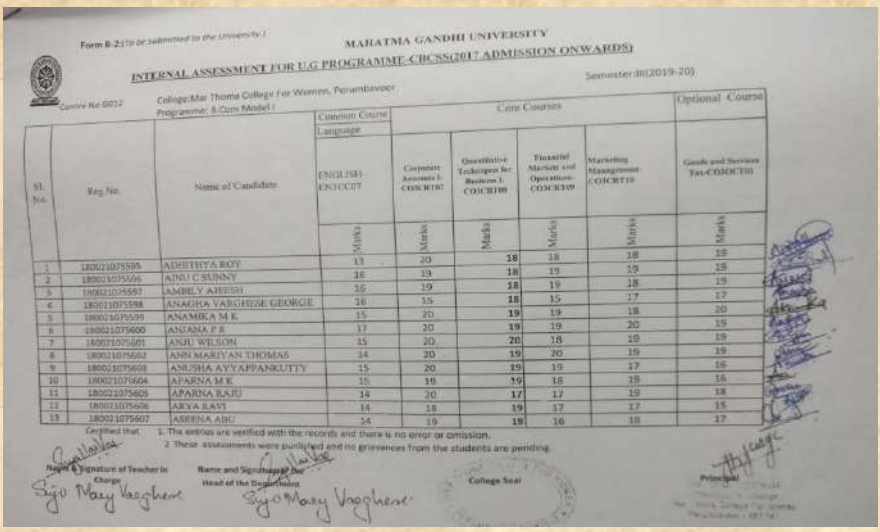
Name and Signature of the Teacher(s) in Charge

Name and Signature of the Head of the Department

(College Seal)

Name and Signature of Principal

B Form Sample



Form B-2: (To be submitted to the University)

MAHATMA GANDHI UNIVERSITY

INTERNAL ASSESSMENT FOR U.G PROGRAMME-CBCSS(2017 ADMISSION ONWARDS)

Semester:III(2019-20)

Centre No: 0012 College:Mar Thoma College For Women, Perumbavoor

Programme: B.Com Model I

Sl. No.	Reg.No.	Name of Candidate	Common Course Language	Core Courses				Optional Course
			ENGLISH-ENG3CC07	Corporate Accounts I-COCBC07	Quantitative Techniques for Business I-COCBC08	Financial Markets and Operations-COCBC09	Marketing Management-COCBC10	Goods and Services Tax-COOCT01
			Marks	Marks	Marks	Marks	Marks	Marks
1	180021075595	ADHITHYA ROY	13	20	18	18	18	19
2	180021075596	ANJU C SUNNY	16	19	18	19	19	19
3	180021075597	AMBILY AJEESH	16	19	18	19	18	19
4	180021075598	ANAGHA VARGHESE GEORGE	16	15	18	15	17	17
5	180021075599	ANAMIKA M.K	15	20	19	19	18	20
6	180021075600	ANJANA P.R	17	20	19	19	20	19
7	180021075601	ANJU WILSON	15	20	20	18	19	19
8	180021075602	ANN MARIYAN THOMAS	14	20	19	20	19	19
9	180021075603	ANUSHA AYYAPPANKUTTY	15	20	19	19	17	16
10	180021075604	APARNA M.K	15	19	19	18	19	16
11	180021075605	APARNA RAJU	14	20	17	17	19	18
12	180021075606	ARYA RAVI	14	18	19	17	17	15
13	180021075607	ASEENA ABU	14	19	19	16	18	17

Certified that 1. The entries are verified with the records and there is no error or omission.

2 These assessments were published and no grievances from the students are pending.

Name & Signature of Teacher in Charge: Sijo Mary Varghese

Name and Signature of the Head of the Department: Sijo Mary Varghese

College Seal

Principal

Components of internal assessment

1. Written test – OBE Based Question paper sample
2. Written answer sheet – Answer sheet sample
3. Assignment – sample
4. Viva Voice
5. Seminar
6. Project

MarThoma College for Women, Perumbavoor
B.Com Model 1 (Finance & Taxation)
First Internal Exam - March,2023
Course Title : Income Tax II
Course Outcome 1 : To determine the taxable income arising:
On account of transfer of Capital assets & from any other residual income

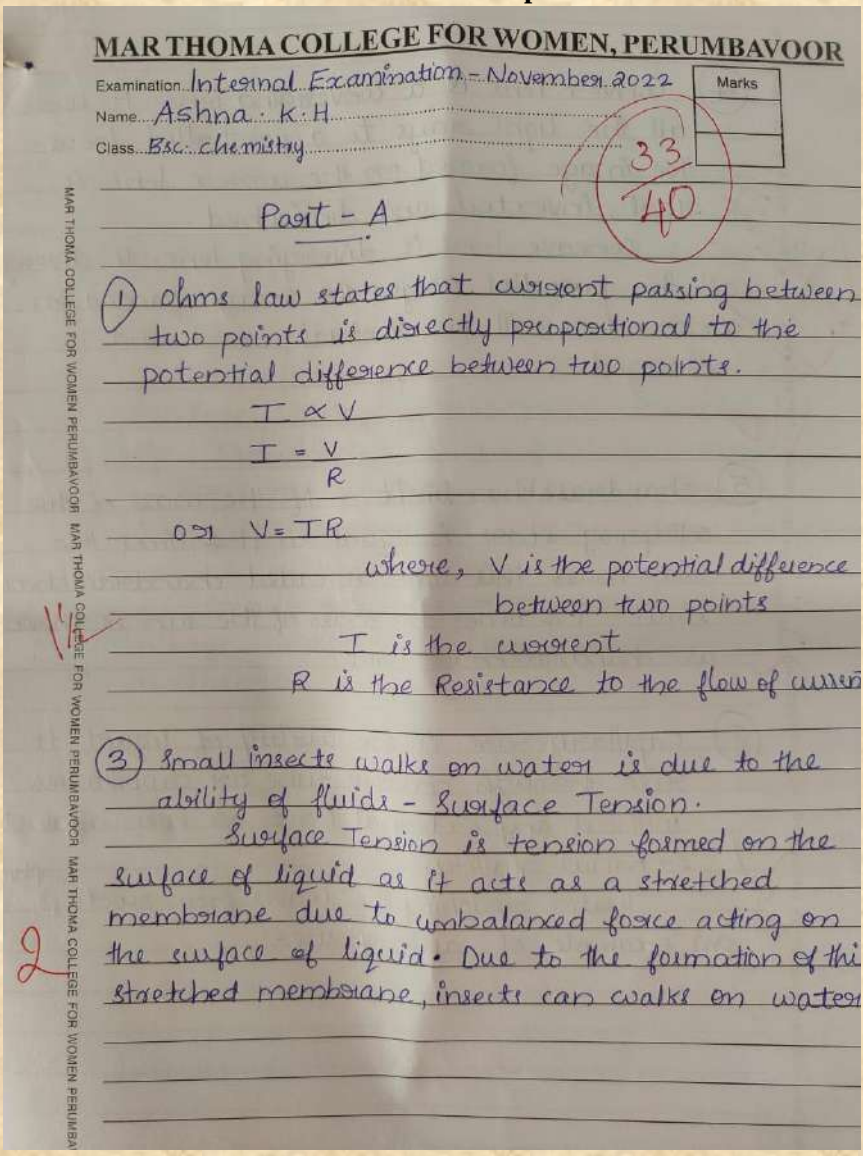
S. No	Questions	Bloom's Taxonomy	Course Outcome	Marks
Section A : All Questions are compulsory. Each question carries 2 marks				
Q.1)	Mr. Mazumdar had purchased Mughal Painting for ₹ 10,000 on 31.12.1965. He sold it for ₹ 1,50,000 to the National Art Gallery on 31.07.2021. What is the capital gain on which he is chargeable u/s 45 for the Assessment Year 2022-2023?	Apply	CO1	
Q.2)	Define " Slump Sale".	Understand	CO1	
Q.3)	Highlight the circumstances in which the cost of the previous owner is deemed to be the cost of acquisition.	Remember	CO1	
Q.4)	Define Short term Capital Asset?	Understand	CO1	
Q.5)	Define Capital Asset.	Understand	CO1	
Section B : All Questions are compulsory. Each question carries 5 marks.				
Q.6)	Mr. Ajay sold some of his property during the year 1-4-2021 to 31-3-2022 as under : (a) Jewellery costing 80,000 (which was acquired in June 2019) was sold for 1,00,000 in May 2021. (b) House at Kolkata : Let out for residential purpose. Its sale Price on 31-10-2021 14,00,000. Fair	Apply	CO1	

MAR THOMA COLLEGE FOR WOMEN
PERUMBAVOOR

	market value on 1-4-2001 3,00,000. Cost of improvement made during 2009-10 29,600. Expense on transfer are 25,000. (c) Household Furniture costing 14000 in 2009 was sold in March 2022 for ₹ 26000 (d) Car was sold on 1-12-2021 for ₹ 45,000, its written down value on 1-4-2021 was 38,000. 14,000 in 2009 was sold in March 2022 for 26,000. (e) Self-cultivated land was compulsorily acquired under a law for 8,00,000 on 1-1-2022 and its cost in 2003-04 was ₹ 65,400. Compute his taxable capital gains. Cost inflation indices are 2001-02-100, 2003-04-109, 2009-10-148 and 2021-22-317			
Q.7	A non-resident remitted U.S. $ 25,000 to India to purchase shares in an Indian Company. At the time of purchase of shares the prescribed rate of exchange was 30. The shares are sold for 13,80,000. At the time of sale the prescribed rate of exchange was 60. Compute the capital gains.	Apply	CO1	
Q.8)	Mr. Hari Mohan submits the following particulars of his income for the Previous Year 2021-22: 1. Business income (Taxable) 3,35,000. 2. He is the owner of two residential houses. He sold one of them costing 4,11,000 in 2008-09 for 13,00,000 on 16th August,	Apply		

	2021 and paid brokerage, etc. 20,000. 3. On 30th November, 2021 he sold his personal car for 90,000 which was purchased four years back for 1,00,000. 4. He sold ancestral ornaments on 1st July, 2021 for ₹ 29,00,000, which had cost his grandfather 50,000 in 1945 and whose market value on 1st April, 2001 was 10,00,000. Compute Mr. Hari Mohan's taxable capital gains and also his total income for the Assessment Year 2022-23. The cost inflation indices are : 2001-02-100, 2008-09-137, 2021-22-317.			
Section C (Compulsory Question -15 marks)				
Q.9	Explain the various circumstances whereby the capital gains are exempt from tax.	Understand	CO1	

Answer sheet sample



MAR THOMA COLLEGE FOR WOMEN, PERUMBAVOOR

Examination: Internal Examination - November 2022

Name: Ashna. K. H

Class: Bsc. chemistry

Marks: 33/40

Part - A

(1) ohms law states that current passing between two points is directly proportional to the potential difference between two points.

$I \propto V$

$I = \frac{V}{R}$

or $V = IR$

where, V is the potential difference between two points

I is the current

R is the Resistance to the flow of curren

1½

(3) Small insects walks on water is due to the ability of fluids - Surface Tension.

Surface Tension is tension formed on the surface of liquid as it acts as a stretched membrane due to unbalanced force acting on the surface of liquid. Due to the formation of thi stretched membrane, insects can walks on water

2

MAR THOMA COLLEGE FOR WOMEN PERUMBAVOOR MAR THOMA COLLEGE FOR WOMEN PERUMBAVOOR MAR THOMA COLLEGE FOR WOMEN PERUMBA

(4) Convex lens is a converging lens. It converges all the light rays to a point called focus. The image formed on the convex lens is real, inverted and diminished.

Concave lens is diverging lens. It diverges all the parallel rays. The image formed on concave lens will be virtual, erect and enlarged.

(5) Chandrasekhar limit - If the mass of the collapsing star is equal to 1.4 times the solar mass this limit is called chandrasekhar limit. 1.4 times the mass of the sun is known as chandrasekhar limit.

(6) Capillary rise is the ability of liquid to rise through narrow tube or cappillaries without any external force or even against external gravity.

Water reaching the leaves from roots in plants is an example of capillary rise.

Examination.....
Name.....
Class.....

Marks

Part - B

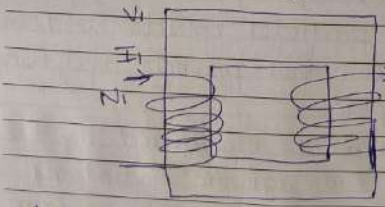
(7) Transformer is an electrical device which transfer electrical energy from one source to another by using mutual induction.

Transformer is used to increase or decrease voltage of an device. Principle of Transformer is Mutual Induction.

There are two types of Transformer.

(1) step up transformer . (2) step down transformer

step up transformer is used to increase voltage and step down transformer is used to decrease the voltage.



N_1 & N_2 → no: of turns wound on soft iron in primary coil as well as in secondary coil.

In step up transformer, secondary voltage will be higher and thus current will be less, as voltage and current are inversely proportional.

relation between voltage and no: of turns,

$$\frac{V_2}{V_1} = \frac{n_2}{n_1}$$

where n is the no: of turns, V - Volt

when n_2 is greater than n_1, ie, no: of turns in secondary is greater than no: of turns in primary, then V_2 will be greater than V_1; ie, secondary voltage will be higher, so current will be lower. working of transformer is based on mutual induction principle - when current flows through primary coil, a change in magnetic flux is developed in primary coil as a result an induced emf is obtained on secondary coil.

(10) heat can be transferred to different media through three methods. They are conduction, convection and radiation.

In convection, heat is transferred from hotter body to cooler body by moving of particles

In conduction, particles collide and transfer their energy to other particle and hence heat transfer takes place.

In radiation, heat is transferred by the release of electromagnetic radiations

heat is always transferred from a hotter body to a colder body.

MAR THOMA COLLEGE FOR WOMEN PERUMBAVOOR MAR THOMA COLLEGE FOR WOMEN PERUMBAVOOR

Examination.....

Name.....

Class.....

Marks

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Part - C

(12) Evolution of stars

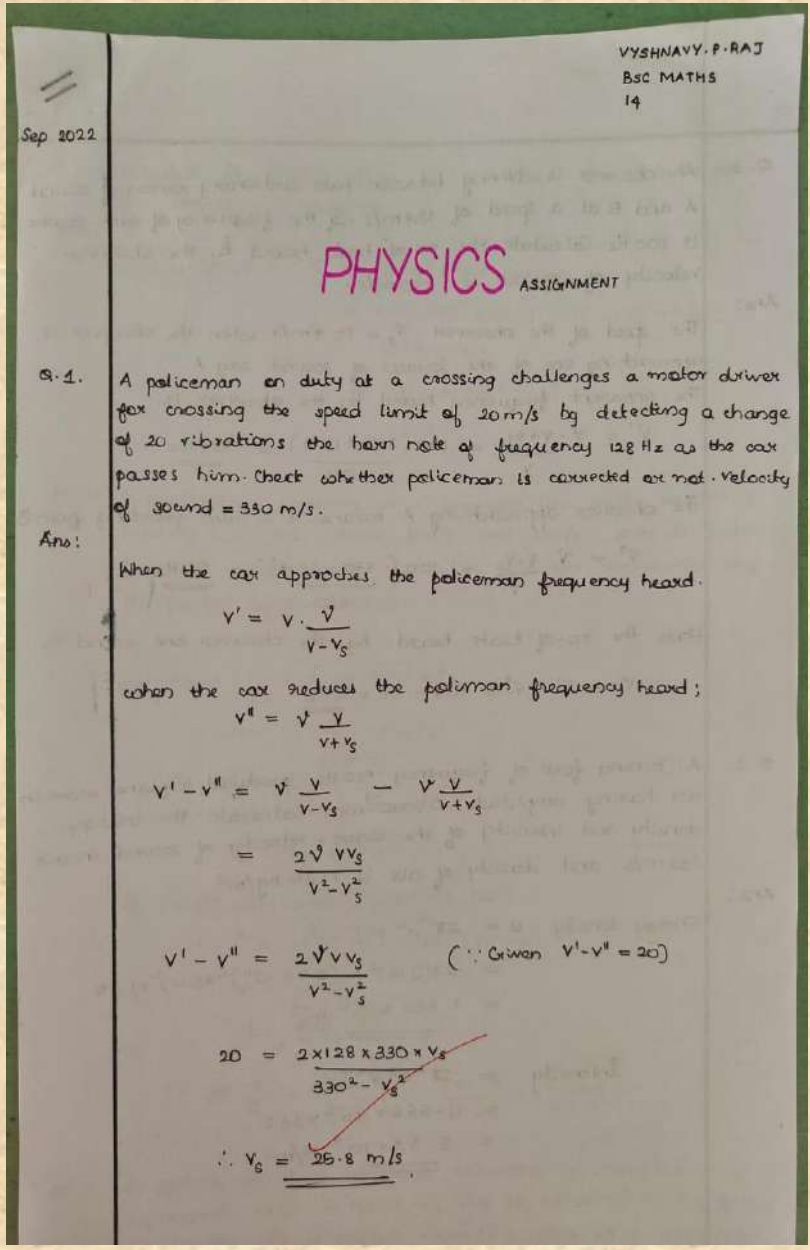
Star passes through different phases from its formation till its end. This is known as stellar evolution.

A star borne within a giant molecule of cloud containing dust and gases which began to collide because of the gravitational pull of its own due to some turbulent disturbances within the cloud. Due to this gravitational attraction, pressure inside it increases and its core began to collide, this heats up. This initial phase is called protostar. This protostar becomes main sequence star when heat increases and nuclear fusion takes place of hydrogen in to helium.

when this nuclear reaction ceases, its centre collapses and the outer shell cause the dying star to expand outward and forms red giant. This will cool for millions of years until it is cold and will not reflect any light is called white dwarf.

image that is sent to the nervous system for correction. This electric signals are converted to form correct clear image.

Assignment sample



VYSHNAVY. P. RAJ
BSC MATHS
14

Sep 2022

PHYSICS ASSIGNMENT

Q.1. A policeman on duty at a crossing challenges a motor driver for crossing the speed limit of 20 m/s by detecting a change of 20 vibrations the horn note of frequency 128 Hz as the car passes him. Check whether policeman is corrected or not. Velocity of sound = 330 m/s.

Ans:

When the car approaches the policeman frequency heard.

$$v' = v \cdot \frac{V}{V - v_s}$$

when the car reduces the policman frequency heard;

$$v'' = v' \frac{V}{V + v_s}$$

$$v' - v'' = v \frac{V}{V - v_s} - v' \frac{V}{V + v_s}$$

$$= \frac{2 v V v_s}{V^2 - v_s^2}$$

$$v' - v'' = \frac{2 v V v_s}{V^2 - v_s^2} \qquad (\because \text{Given } v' - v'' = 20)$$

$$20 = \frac{2 \times 128 \times 330 \times v_s}{330^2 - v_s^2}$$

$$\therefore v_s = 25.8 \text{ m/s}$$

Q. 2. An observer is driving between two stationary sources of sound A and B at a speed of 13.4 m/s. If the frequency of each source is 100 Hz. Calculate the no. of beats heard by the observer. Velocity of sound is 330 m/s.

Ans:

The speed of the observer $v_0 = 13.4$ m/s when the observer is approaching one of the sources of sound say A.

The apparent frequency heard by the observer is;

$$v' = v \cdot \frac{v + v_s}{v} = 100 \left(\frac{330 + 13.4}{300}\right) = 104 \text{ Hz}$$

The observer approaching A means it is also receding from B

$$v'' = v \frac{v - v_s}{v} = 100 \left(\frac{330 - 13.4}{330}\right) = 96 \text{ Hz}$$

Hence the no. of beats heard by the observer one second is

$$v = v' - v'' = 104 - 96 = 8 \text{ Hz}$$

Q. 3. A tuning fork of frequency 512 Hz produced a plane wave in air having amplitude 0.5×10^{-3} mm. Calculate the energy density and intensity of the wave. Velocity of sound in air 332 m/s and density of air is 1.29 kg/m^3.

Ans:

Energy density $u = 2\pi^2 a^2 \nu^2 \rho$

$= 2 \times (3.14)^2 \times (0.5 \times 10^{-6})^2 \times (512)^2 \times 1.29$

$= 1.666 \times 10^{-6}$ m^{-3}

Intensity $= 2\pi^2 a^2 \nu^2 \rho v$

$= 1.666 \times 10^{-6} \times 332$

$= 5.53 \times 10^{-4}$ W/m^2

(i). What is the frequency of the mass?
(ii). What is the maximum acceleration of mass?
(iii). What is the maximum speed of the mass?

-Ans:

$k = 1200\ N/m$

(i) $m = 3kg$

$W = \sqrt{k/m} = \sqrt{1200/3} = \underline{\underline{20}}$

$\nu = \frac{W}{2\pi} = \frac{20}{2 \times 3.14} = \underline{\underline{3.2\ s^{-1}}}$

(ii). Maximum acceleration of mass: (a) max;

$(a)_{max} = \pm \omega^2 a = \pm 20^2 \times 2 \times 10^{-2} = \underline{\underline{\pm 8\ m/s^2}}$

(iii). Maximum speed of mass V_{max};

$V_{max} = \pm Wa$

$= \pm 20 \times 2 \times 10^{-2} = \underline{\underline{\pm 0.4\ m/s}}$

Q.4. Calculate the energy flux of the wave. The density of the string is 1.25 g/cm

Ans:

Energy flux ; $I = 2\pi^2 a^2 \nu^2 \rho V$

$= 2 \times (3.14)^2 \times (0.1)^2 \times (0.637)^2 \times 1.25 \times 10^3 \times 0.40$

$= 40 \ W/m^2$

Q.5. A particle is moving in a straight line with SHM its velocity has the values 3m/s and 2m/s when its distances from the mean position are 1m and 2m respectively. Find the period of the motion.

Ans:

We have ; $V = W\sqrt{a^2 - x^2}$

$x = 1m \qquad v = 3m/s$

i.e, $3 = W\sqrt{a^2 - 1^2}$ —— ①.

When $x = 2m \qquad V = 2m/s$

$2 = W\sqrt{a^2 - 2^2}$ —— ②.

By ; eq① - ② ; and squaring both:

$3^2 - 2^2 = W^2(a^2 - 1) - W^2(a^2 - 4)$

$5 = W^2 3$

$W = \sqrt{5/3}$

$\therefore T = \frac{2\pi}{W} = \frac{2 \times 3.14}{\sqrt{5/3}} = \frac{2 \times 3.14}{1.29} = 4.368$

Q.6. A spring of force constant 1200N/m is mounted on a horizontal table. A mass of 8kg is attached to the free end of the spring pulled sideways to a distance of 2cm and released.

Viva

Seminar

Project

MAR THOMA COLLEGE FOR WOMEN
PERUMBAVOOR

(Affiliated to Mahatma Gandhi University, Kottayam, Kerala)

19/76

CERTIFICATE

This is to certify that the project report entitled "**Determination of the Mass of the Jupiter from the Orbital data of its Moons using Stellarium** " is the bonafide work carried out by Ms. Nithuna Rajan. under my guidance and supervision, as part of the curriculum of Bachelor of Science in Physics (Model II Applied Electronics) under the faculty of Science of Mahatma Gandhi University, Kottayam, Kerala during the academic year 2021-2022.

Project Guide

Head of the Department

MAR THOMA COLLEGE FOR WOMEN
PERUMBAVOOR
DEPT OF PHYSICS

MAR THOMA COLLEGE FOR WOMEN

PERUMBAVOOR

(Affiliated to Mahatma Gandhi University)

11/76

CERTIFICATE

This is to certify that the project report entitled **"ENERGY AUDIT – INSTITUTION 2021-22"** is the bonafide work carried out by Ms. FATHIMA T.S (Reg.no:190021041537) under my guidance and supervision during 2021-2022, in partial fulfilment the requirement for the award of the Degree of Bachelor of Physics (Model II Applied Electronics) under the faculty of Science of the Mahatma Gandhi University, Kottayam during the academic session 2021-2022.

Viva Voice Examination Held on ..18/05/2022....

Project Guide

Head of the Department

External Examiner

MAR THOMA COLLEGE FOR WOMEN PERUMBAVOOR DEPT. OF PHYSICS

DR. SUSAMMA VARGHESE
Principal-in-charge
Mar Thoma College For Women
Perumbavoor - 683 542

Grievance Redressal System

GRIEVANCE REDRESSAL MECHANISM

In order to address the grievances of students a three level grievance redressal mechanism is executed in the college.

Departmental Level: The internal marks are allotted based on defined strategies and are informed well in advance to the students. If any grievance on internal exam on theory or lab is received it is first discussed with the concerned faculty and the Head of the Department.

College Level: The College level Committee comprising the Principal, Internal examination coordinators and the concerned HoD investigates the unresolved departmental-level grievances.

University Level : The University level Committee comprising the Vice chancellor, Pro-vice Chancellor, Chairman-Board of examination and Controller of examination is there for the flawless verification of internal and external examination scores.

College Hand Book

butter : 09-02-2021

MAR THOMA COLLEGE FOR WOMEN

PERUMBAVOOR, KERALA - 683 542

Affiliated to Mahatma Gandhi University, Kottayam

Re-accredited with 'B+' Grade by NAAC in 2017

HANDBOOK & CALENDAR
2021 - 2022

Phone : 0484 - 2522723

Website : www.marthomacollege.ac.in

E-mail : mtcwpbr@yahoo.in

Fax : 0484 - 2520823

CONTENTS

COMMITTEES FOR THE YEAR 2021 - 22

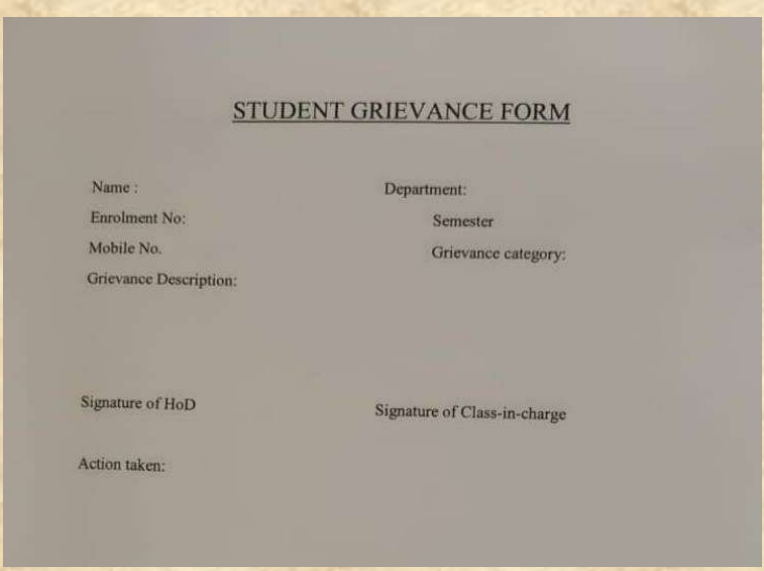
Sl. No.	Committees	Staff Representatives	Student Representatives
1	Anti-Ragging Committee	Dr. Sujo Mary Varghese (**Principal-in-Charge**) Ms. Sherin T. Abraham (Convenor) Dr. Anupama P. (IQAC Co-ordinator) Ms. Chaithanya Elsa Achankunju (Staff Advisor-College Union) Mr. Jibin Shibu Sam (Staff Advisor-Arts Club)	Chairperson (College Union)
2	Anti-Sexual Harassment Cell	Dr. Sujo Mary Varghese (**Principal-in-Charge**) Dr. Anupama P. (IQAC Co-ordinator) Ms. Sherin T. Abraham Ms. Preethi Sara Joseph	
3	College Canteen Committee	Dr. Sujo Mary Varghese (**Principal-in-Charge**) Dr. Paulose Thomas (Bursar) Dr. Bibin Kuriakose	

Mar Thoma College for Women Perumbavoor

Sl. No.	Committees	Staff Representatives	Student Representatives
4	Discipline Committee	All Heads of Departments Staff Advisors to College Union & Arts Club	
5	Equal Opportunity Cell (For students with disabilities)	Dr. Sujo Mary Varghese (**Principal-in-Charge**) Dr. Anupama P. (IQAC Co-ordinator) Dr. Vineed Kumar Dr. Bibin Kuriakose Dr. Paulose Thomas Ms. Feba P. Baby PTA Vice President	Chairperson (College Union)
6	Ethics Committee & Surprise Inspection Squad	Dr. Sujo Mary Varghese (**Principal-in-Charge**) Dr. Anupama P. (IQAC Co-ordinator) Ms. Sherin T. Abraham Ms. Chaithanya Elsa Achankunju	Chairperson (College Union)

Sl. No.	Committees	Staff Representatives	Student Representatives
7	Grievance Redressal Mechanism (CBCS)	Dr. Sujo Mary Varghese (**Principal-in-Charge**) Dr. Bibin Kuriakose Ms. Serene Anna Sam (Exam Co-ordinators) HOD of the concerned Dept.	
8	Handbook & Calendar Committee	Dr. Sujo Mary Varghese (**Principal-in-Charge**) Dr. Rajani Jacob (Staff in Charge) Dr. Anupama P. (IQAC Co-ordinator) Ms. Sherin T. Abraham Ms. Preethi Sara Joseph Mr. Eldho Uthup (Administrative Staff)	
9	Hostel Committee	Dr. Sujo Mary Varghese (**Principal-in-Charge**) Hostel Warden Smt. Susie B Varghese (GC) Smt. Jessy Agi (GC)	

Application for Exam Related Grievance Redressal- Form



STUDENT GRIEVANCE FORM

Name :

Department:

Enrolment No:

Semester

Mobile No.

Grievance category:

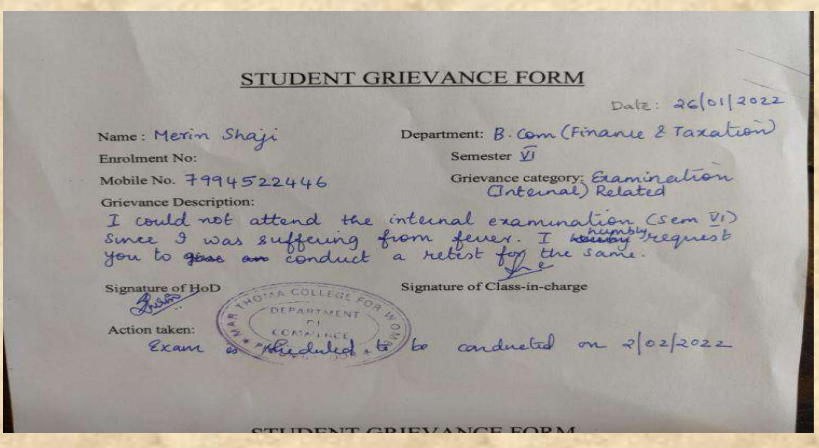
Grievance Description:

Signature of HoD

Signature of Class-in-charge

Action taken:

Application for Exam Related Grievance Redressal- Sample



STUDENT GRIEVANCE FORM

Date: 26/01/2022

Name : Merin Shaji

Department: B.Com (Finance & Taxation)

Enrolment No:

Semester VI

Mobile No. 7994522446

Grievance category: Examination (Internal) Related

Grievance Description:

I could not attend the internal examination (Sem VI) since I was suffering from fever. I ~~kindly~~ request you to ~~pass~~ ~~an~~ conduct a retest for the same.

Signature of HoD

Signature of Class-in-charge

Action taken:

Exam ~~is~~ rescheduled to be conducted on 2/02/2022

STUDENT GRIEVANCE FORM

Date: 29/10/2021

Name : Akhilendu. T. Anil Department: Physics

Enrolment No: Semester V

Mobile No. 77364 34317 Grievance category:

Grievance Description:

I was suffering fro fever during my internal exam
Kindly make arrangement for retest

Signature of HoD Signature of Class-in-charge

MAR THOMA COLLEGE FOR WOMEN PERUMBAVOOR DEPT OF PHYSICS

Action taken:

Exam is scheduled to be conducted on
2 November 2021.

MAR THOMA COLLEGE FOR WOMEN PERUMBAVOOR