DEVAMATHA COLLEGE KURAVILANGAD

ADDITIONAL LANGUAGE HINDI I B.A/BSC SEM-I

PROSE &ONE ACT PLAYS CODE : HN 1CCTO1

OBE OUTCOME MEASUREMENT **TIME : 1 ½ HRS** **MARKS :50**

Answer the following questions. All questions are compulsory .

CO1:

1.कफनचोर का बेटा कहानी का कथानक क्या है ?

2.बहू की विदा एकांकी में चित्रित समस्याएँ क्या-क्या हैं ?

CO2 :

3.आईये हम वृक्ष देवता की आराधना करें किसकी रचना है ? किस विधा की रचना है

4.रामकुमार वर्मा के किन्हीं दो एकांकियों के नाम लिखिए।

CO3:

5.सामाजिक एकांकी के रूप में सती एकांकी की प्रासंगिकता क्या है?

6..कथाकार के रूप में श्रीमती उषाबाला का परिचय कीजिए।

CO4:

7..भय की भावना व्यक्तित्व पर किस प्रकार के प्रभाव डालते हैं ?

8..वृक्षों की पूजा, रक्षा करना मानव का कर्तव्य है। क्यों ?

CO5:

9..जान से प्यारे एकांकी का सार अपने शब्दों में लिखिए।

10.जब में फेल हुआ एकांकी का सन्देश क्या है ?

(Each carries 5 marks) 10x5=50 mks

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DEVA MATHA COLLEGE KURAVILANGAD

B Sc. Degree C.B.C.S Examination,

Semester-I: Core Course- Mathematics.

MM1CRT01 : Foundation Mathematics.

Time: 1.5 hrs Maximum marks: 40

Part A

Each question carries **5** marks

1. Differentiate contradiction method and contra positive method for proving theorems.**(CO1)**
2. Explain rules of inference. **(CO1)**
3. Give examples for into, onto and bijective functions. **(CO2)**
4. Explain floor and ceil functions. **(CO2)**
5. Let f, g: $R \to R$ be defined by $f(x) = x^2 + 2x$ and $g(x) = x^3 - x + 7$. Establish a formula for defining $f \circ g$ and g$\circ f$. **(CO3)**
6. Let $\equiv$ be the relation on the set of real numbers defined by $a \equiv b$ if $a - b \in Z$. Determine whether the relation $\equiv$ is an equivalence relation. **(CO3)**
7. Solve the equation $x^3 - 12x^2 + 39x - 28 = 0$ given the roots are in AP. **(CO4)**
8. If α, β, γ are roots of the equation $x^3 - px^2 + qx - r = 0$, determine $\frac{1}{\alpha} + \frac{1}{\beta} + \frac{1}{\gamma}$. **(CO4)**

(5x8=40)



Department of English

Deva Matha College, Kuravilangad

Question Paper For Course Outcome Measurement

BA English Language and Literature

EN1CCT01 Fine Tune Your English

Semester 1

1.A. He pulled the string tight. B. She is a nice girl.(Identify the kind of adjectives) 2 Marks (CO 1)

2. Here comes the C.I and a few policemen (Correct the sentence)) 2 Marks (CO 1)

3.How are indefinite articles different from the definite article? 5 marks (CO 2)

4. Frame five exclamatory questions5 marks (CO 2)

Fill in the blanks using the appropriate form of the verbs given.

5.He ----------the room and ----------down in the chair(cross, sit) 2 marks (CO 3)

6. A bus ------him down as he ------the road. (knock, cross) 2 marks (CO 3)

7.Write an essay stating your views on the stray dog menace. 15 marks (CO 4)

8. Write a letter to a friend describing a recent exciting cricket match in which your side won. 15 marks (CO 4)

9. Frame a telephone conversation between you and a friend of yours about your career interests. 5 marks (CO 5)

10. Frame a conversation between you and your class teacher about conducting a study tour. 5 marks (CO 5)



DEPARTMENT OF ENGLISH, DEVAMATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.A. ENGLISH LANGUAGE AND LITEARATURE

EN1CCT02 – PEARLS FROM THE DEEP

SEMESTER 1

1. Discuss the animal imagery in ‘Jaguar’ 5 marks (CO 3)
2. Analyze the way in which the Franco-Prussian war affects Paris? 5 marks (CO 3)
3. Describe what the knight sees in his dreams at the Elfin Grot?5 marks (CO 1)
4. Discuss the speciality of the pier-glass?5 marks (CO 4)
5. Analyze the loneliness felt by Mrs. Wright.5 marks (CO 2)
6. Explain the significance of the bird in the play ‘Trifles’?5 marks (CO 1)
7. Describe the appearance of the refugee children in Achebe’s poem?5 marks (CO 4)
8. Explain how the old man sees the sea unlike other rich fishermen?5 marks (CO 2)



DEPARTMENT OF MALAYALAM, DEVAMATHA COLLEGE KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASURMENT

B.A. MALAYALAM

ML1CCTO1- കഥാസാഹിത്യം.

SEMESTER I

Time: 3 Hours **Max.marks:120**

1.മലയാളത്തിലെ ആദ്യകാലകഥകൾ പരിചയപ്പെടുത്തുക.10 Marks (CO1)

2.മലയാളത്തിലെ ആദ്യകാലകഥകളുടെ സവിശേഷതകൾ വിവരിക്കുക.10 Marks (CO1)

3.ഇന്ദുലേഖ എന്ന നോവലിനെ പരിചയപ്പെടുത്തുക.10 Marks (CO2)

4.കഥ നോവൽ എന്നീ രണ്ട് സാഹിത്യരൂപങ്ങൾ തമ്മിലുള്ള വ്യതാസങ്ങൾ വിശദീകരിക്കുക.10 Marks (CO2)

5.പ്രധാന പരിസ്ഥിതികഥകൾ പരിചയപ്പെടുത്തുക.15 Marks (CO3)

6.സാറാ ജോസഫ്, സിതാര എസ്, ഇന്ദുമേനോൻ എന്നിവരുടെ കഥകളിലെ സാമ്യവ്യത്യാസങ്ങൾ വിവരിക്കുക.15 Marks (CO3)

7.ആടുജീവിതം എന്ന നോവലിലെ ആശയം വിശദീകരിക്കുക. 10 Marks (CO4)

8.തിരുത്ത് എന്ന കഥയുടെ പ്രത്യേകതകൾ വിവരിക്കുക. 10 Marks (CO4)

9.`വിശപ്പിന്റെ അടയാളപ്പെടുത്തലാണ് ബിരിയാണി' ഈ അഭിപ്രായത്തോട് നിങ്ങൾ യോജിക്കുന്നുണ്ടോ? സ്വാഭിപ്രായം ക്രോഡീകരിക്കുക. 15 Marks (CO5)

10മോദസ്ഥിരനായങ്ങ് വസിപ്പൂ മലപോലെ എന്ന കഥയുടെ സാമൂഹികപ്രാധാന്യം വിശദീകരിക്കുക. 15 Marks (CO5)



DEPARTMENT OF PHYSICS, DEVA MATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.Sc Mathematics (2019 Admissions)

PH1CMT01- PROPERTIES OF MATTER AND ERROR ANALYSIS

SEMESTER:1

1. Compare the three different moduli of elasticity and write down the relations connecting them- 5 Marks (CO1)
2. A rope of length 5m and diameter 8mm fixed at one end is loaded at the other by 100N. What will be the elongation of the rope if $Y= 2x\ 10^{11} N/m^2$- 5 Marks (CO1)
3. Obtain expression for excess pressure inside a liquid drop-10 Marks (CO2)
4. Illustrate with examples the instances of surface tension that we see around us (CO2)
5. Discuss Poisseuille's method for determining the viscosity of liquid by constant pressure method- 10 Marks (CO3)
6. Calculate the terminal velocity of a glass ball of radius 1mm and density 2000 kg/m^3 , falling through oil column of viscosity 0.27 Ns/m^2. Density of oil is 800 kg/m^3(CO3)
7. Differntiate between precision and accuracy- 5 Marks(CO4)
8. Discuss how error propagates in various mathematical operations- 10 Marks (CO4)



DEPARTMENT OF STATISTICS

DEVA MATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

NAME OF THE PROGRAMME: B.Sc. Mathematics

COURSE CODE & NAME OF THE COURSE: **ST1CMT01 -- DESCRIPTIVE STATISTICS**
SEMESTER: I

1. Describe different types of data. 5 Marks (CO1)
2. Compare census and sampling. 5Marks (CO1)
3. Explain the concept of moments in Statistics. 5 Marks (CO2)
4. Express central moments in terms of raw moments. 5 Marks (CO2)
5. Calculate mean and variance of the following data: (CO3)

Class	0-10	10-20	20-30	30-40	40-50
frequency	8	12	20	6	4

5 Marks

6. Interpret the nature of skewness and kurtosis of the data (CO3)

Class	0-9	10-19	20-29	30-39	40-49
frequency	8	12	20	6	4

5 Marks

7. Determine whether Fishers index number satisfy time reversal test and factor reversal test. (CO4) 5 Marks
8. Measure the cost of living index number Marks (CO4)

Commodity	1980		2000	
	price	quantity	Price	quantity
A	10	3	20	4
B	5	4	15	3
C	2	3	4	2

5 Marks

(8x5=40 marks)

DEVAMATHA COLLEGE KURAVILANGAD

ADDITIONAL LANGUAGE HINDI I B.A/BSC SEM-II

SHORT STORIES & NOVEL CODE : HN 2CCTO2

OBE OUTCOME MEASUREMENT TIME : 1 ½ HRS MARKS :50

Answer the following questions. All questions are compulsory .

CO1-

1.कहानी लिखते समय किन-किन तत्वों पर ध्यान देना है ?

2.कहानी ओर उपन्यास के मुख्य अन्तर क्या-क्या है ?

CO2-

3.प्रेमचन्द का परिचय कीजिए

4.कथाकार के रूप में कुमार अम्बुज का परिचय कीजिए।

CO 3-

5.छुट्टी का दिन कहानी का सार लिखिए।

6.अन्तिम साक्ष्य उपन्यास का कथानक किस बिन्दू पर आधारित है ?

CO4-

7.मीना मौसी का परिचय कीजिए।

8.बालक हामिद का चरित्रगत विशेषताएँ लिखिए।

CO5-

9.अन्तिम साक्ष्य उपन्यास में चित्रित समस्याएँ क्या-क्या है ?

10.माँ रसोई में रहती है, कहानी में स्त्री-जीवन की सूक्ष्म संवेदनाओं की अभिव्यक्ति मिलती है। विचार कीजिए।

(Each carries 5 marks) 10x5=50 mks

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DEVA MATHA COLLEGE KURAVILANGAD

DEPARTMENT OF MATHEMATICS, DEVA MATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

NAME OF THE PROGRAMME : B.SC. MATHEMATICS

COURSE CODE & NAME OF THE COURSE: MM5CRT0 , ANALYTIC GEOMETRY TRIGONOMETRY AND DIFFERENTIAL CALCULUS

SEMESTER: TWO

1. Show that the equation of the hyperbola whose eccentricity is 2, focus $(1, 2)$ and corresponding directrix $x + 2 = 0$ is $3x^2 - y^2 + 18x + 4y + 11 = 0$. (CO1)

2. Show that the equation of the ellipse whose focus is $(3, 1)$ and directrix is $x - y + 6 = 0$ and eccentricity is $\frac{1}{2}$ is $7x^2 + 7y^2 + 2xy - 60x - 4y + 44 = 0$. (CO1)

3. Determine the polar equation of a circle with Centre (r_0, θ_0) and radius a. (CO2)

4. Write the polar equation for a conic with eccentricity 5, one focus at the origin and the corresponding directrix along the line $y = -6$. (CO2)

5. Explain hyperbolic sine and cosine function. Obtain its relation with the circular sin and cosine functions.(CO3)

6. Find the sum of the infinite series

$\cos\theta + \frac{1}{2}\cos 2\theta + \frac{1.3}{2.4}\cos 3\theta + \frac{1.3.5}{2.4.6}\cos 4\theta + \ldots$ is $\cos\left(\frac{\pi}{4} + \frac{3\theta}{4}\right)\left(2\sin\frac{\theta}{2}\right)^{-\frac{1}{2}}$ (CO3)

7. Evaluate the nth derivative of $\frac{10x-21}{(2x-3)(2x+5)}$.(CO4)

8. Evaluate the limit $\lim_{x \to \infty} \frac{2x+3}{7x-6}$.(CO4)



Department of English (SF)

Deva Matha College, Kuravilangad

Question Paper For Course Outcome Measurement

BA Triple Main

EN2CCT03 Issues That Matter

Semester 2

1.Which three important areas of the value of biodiversity has Leakey identified? 2 Marks (CO 1)

2. What did the mysterious bird reveal to Hagar? 2 Marks (CO 1)

3.What distinction does the narrator draw between 'war' and 'hostility'? 5 marks (CO 2)

4. How has the tree grown to its present status? 5 marks (CO 2)

5.Narrate the experience of Zitkala-sa on her trip to her home in the reservation. 10 marks (CO 3)

6. Elaborate on 'the old prison' as a metaphor for human suffering 10 marks (CO 3)

7.Describe how Sentila become a pot maker against the expectations of her mother. 10 marks (CO 3)

8. Bring out the satire in the story 'The Censors' by drawing examples from the situations in the story. 10 marks (CO 3)

9. Evaluate the irony in the line 'haven't I always reported the truth?....Burn me' 5 marks (CO 4)

10. Evaluate the grandfather's attitude when Bapu Patil humiliated him. 5 marks (CO 4)



DEPARTMENT OF ENGLISH, DEVAMATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.A. ENGLISH LANGUAGE AND LITEARATURE

EN2CCT04 – SAVOURING THE CLASSICS

SEMESTER 2

1. Explain the peculiarities of John Vincent Moon? 5 marks (CO 3)

2.Discuss the animal symbolism in Canto I of *Inferno*.5 marks(CO 3)

3. Analyze the title of the poem 'On His Blindness'?5 marks (CO 2)

4. Discuss the surgeon's thoughts about the lady in the black veil?5 marks(CO 4)

5.Comment on the friendship between Bingley and Darcy.5 marks(CO 2)

6. Briefly describe the two adventures of Don Quixote.5 marks (CO 1)

7. Discuss Telemachus' reunion with his father. 5 marks (CO 4)

8. "Lovely is youth, but quickly is it flown." Explain. 5 marks(CO 1)



DEPARTMENT OF MALAYALAM, DEVAMATHA COLLEGE KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASURMENT

B.A. MALAYALAM

ML2CCTO2- കവിത

SEMESTER II

Time: 3 Hours **Max.marks:120**

1.മലയാളകവിതയുടെ വികാസപരിണാമങ്ങൾ വിവരിക്കുക.10 Marks (CO1)

2.കുരുക്ഷേത്രം എന്ന കവിതയ്ക്ക് മലയാളകവിതയിലുള്ള പ്രാധാന്യം വിവരിക്കുക.10 Marks (CO1)

3.ആധുനിക കവിതകളുടെ സവിശേഷതകൾ വിശദീകരിക്കുക.15 Marks (CO2)

4.മലയാളത്തിലെ ഉത്തരാധുനിക പ്രസ്ഥാനത്തെ സ്വാധീനിച്ച സാഹചര്യങ്ങൾ വ്യക്തമാക്കുക.15 Marks (CO2)

5.മലയാള കവിതയിലെ ലിംഗസമത്വംഎന്ന വിഷയത്തിൽ ഉപന്യസിക്കുക. 10 Marks (CO3)

6.ഉത്തരാധുനിക കവിതകൾ പെണ്ണനുഭവങ്ങളെ എപ്രകാരം അടയാളപ്പെടുത്തുന്നുവെന്ന് വിവരിക്കുക.10 Marks (CO3)

7.കാലഘട്ടത്തിന്റെ പൊതുപ്രവണതകൾ കവിതകളിൽ പ്രകടമാകുന്നതെപ്രകാരമെന്ന് വിവരിക്കുക. 10 Marks (CO4)

8.സമകാലിക സാഹചര്യങ്ങൾ കവിതകൾക്ക് വിഷയമാകാറുണ്ടോ ?വിമർശനാത്മകമായി വിലയിരുത്തുക.10 Marks (CO4)

9.വൈലോപ്പിള്ളിയുടെ മാമ്പഴം എന്ന കവിതയുടെ സവിശേഷതകൾ വിവരിക്കുക.15 Marks (CO5)

10.കവിതയും സമൂഹവും എന്ന വിഷയം വിലയിരുത്തുക.15 Marks (CO5)

DEPARTMENT OF PHYSICS, DEVA MATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.Sc Physics (2019 Admissions)

PH2CMP01-Practicals

1. Explain the procedure to use Vernier Calipers/Screwguage, tracelling microscope and spectrometer to measure the given specimen – 5 Marks (CO1)
2. Systematically tabulate the outcome of the measurement- 5 Marks (CO1)
3. Find the least count of the device used – 5 Marks (CO2)
4. Use the measurement to calculate the given quantity -5 Marks (CO2)
5. Calculate quantities such as acceleration due to gravity/ Moment of Inertia/ Modulus of elasticity- 5 Marks (CO3)
6. Repeat the experiment compare the results- 5 Marks (CO3)
7. Compare the results with theoretical or standard values – 5 Marks (CO4)
8. Estimate the error in final result obtained- 5 Marks (CO4)



DEPARTMENT OF PHYSICS, DEVA MATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.Sc Chemistry (2019 Admissions)

PH2CMT01- MECHANICS AND ASTROPHYSICS

SEMESTER:2

1. Differentiate between Centripetal and Centrifugal force- 5 Marks (CO1)
2. Illustrate how acceleration due to gravity at a place can be measured using a compound pendulum- 10 Marks (CO1)
3. State and prove parallel and perpendicular axis theorem-10 Marks (CO2)
4. Explain how an ice skater uses the principle of conservation of angular momentum to control his motion- 5 Marks (CO2)
5. State the conditions for an oscillatory motion to be simple harmonic- 5 Marks(CO3)
6. Obtain the differential equation for a plane progressive wave- 5 Marks(CO3)
7. Plot velocity versus time graphs of a simple harmonic oscillator- 5 Marks (CO4)
8. Setup differential equation for a forced harmonic oscillator and obtain the condition for resonance – 10 Marks(CO4)
9. A train moving with a velocity of 72 km/hr sounds its whistle which has a frequency of 550 H. Find the frequency heard by a stationary observer as the train approaches him. Given the velocity of sound is 340m/s- 5 Marks (CO5)
10. A plane progressive wave is given by $y = 0.30 \sin(40t - 0.30x)$. find the wavelength and the phase difference between two points at x=2 m and at x = 7.232 m. also find the maximum particle velocity. 5 Marks (CO5)
11. Explain the HR diagram- 5 Marks(CO6)
12. Compare the life cyles of a low, medium and high mass star- 10 Marks (CO6)



DEPARTMENT OF STATISTICS

DEVA MATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

NAME OF THE PROGRAMME: B.Sc. Mathematics

COURSE CODE & NAME OF THE COURSE: **ST2CMT02 - PROBABILITY THEORY**

SEMESTER: II

1. Discuss different approaches to define probability 5 Marks (CO1)

2. In a particular pain clinic, 10% of patients are prescribed narcotic pain killers. Overall, five percent of the clinic's patients are addicted to narcotics (including pain killers and illegal substances). Out of all the people prescribed pain pills, 8% are addicts. If a patient is an addict, discover the probability that they will be prescribed pain pills? (CO1) 5Marks

3. Describe properties of distribution function. 5 Marks (CO2)

4. Interpret the independence of the two random variables X and Y having joint probability density function (pdf) given by If f(x, y) = 1 ; 0<x<1 and 0<y<1 (CO2) 5 Marks

5. Determine k if, f(x)= k x (2-x); 0 < x < 2, is a *pdf*. 5 Marks (CO3)

6. Construct marginal pdfs of X and Y and conditional pdf of X given Y, If f(x, y) = 12xy(1-y); 0<x,y<1 is the joint pdf. (CO3) 5 Marks

7. Compare the measures of relations, correlation and regression. 5 Marks (CO4)

8. Calculate X when Y=20 by obtaining the relevant regression equation, for the following data. (CO4)

X:	3	5	6	7	10	11
Y:	8	12	11	14	16	17

. 5 Marks

(8x5=40 marks)



DEVAMATHA COLLEGE KURAVILANGAD

ADDITIONAL LANGUAGE HINDI II B.A/BSC SEM-III

POETRY,GRAMMAR & TRANSLATION CODE : HN 3CCTO3

OBE OUTCOME MEASUREMENT TIME : 1 ½ HRS MARKS :50

Answer the following questions. All questions are compulsory .

CO1-

1.हिन्दी में मुक्त छन्द का आविष्कार किसने किया था ? उनका पूरा नाम लिखिए।

2.आधुनिक युग की मीरा नाम से प्रसिद्ध कवयित्री कौन है ? उनका परिचय कीजिए।

CO2-

3.सबूत शीर्षक कविता समकालीन जीवन में चित्रित अन्याय, अत्याचार आदि का सबूत पेश करती है। विचार कीजिए।

4.जंगल के उजाड़ में चित्रित समस्या क्या है ?

CO3-

5.कारक क्या है ? सोदाहरण स्पष्ट कीजिए।

6.सर्वनाम की परिभाषा लिखकर उसके भदे बताइए।

CO4-

7.शुद्ध कीजिए- राम ने पुस्तक पढा ।
लडकों ने पढे।

8.स्त्रीलिंग शब्दों की पहचान के कुछ मुख्य नियम बताईए।

CO5-

9.अनुवाद कीजिए- अंग्रेज़ी हिन्दी

10. अनुवाद कीजिए- हिन्दी – अंग्रेज़ी

(Each carries 5 marks) 10x5=50 mks

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DEVA MATHA COLLEGE KURAVILANGAD

CBCSS Degree Examination

Semester III

Core Course - MM3CRT03 : CALCULUS

Time: 1.5 hrs Max.Marks:50

Each question carries 5 marks

1. Using Maclaurin's series, expand $tan^{-1}x$, hence deduce $\frac{\pi}{4} = 1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \ldots$ **(Understand CO1)**
2. Find the Taylor's series representation of cos $cos\, x$ in powers of $x - \frac{\pi}{2}$ **(Understand CO1)**
3. Find the envelope of the curve $(x - \alpha)^2 = 4\alpha - y^2$ **(apply CO2)**
4. Determine the points of inflexion of the curve $y = x^4 - 6x^3 + 12x^2 + 5x + 7$. **(apply CO2)**
5. Evaluate all second partial derivatives of the function $f(x, y) = x^2 + xy + y^3 + y + 1$ **(Evaluate CO3)**
6. Evaluate f_{xx} and f_{yy} for the function $f(x, y) = x^y$. **(Evaluate CO3)**
7. Sketch the region bounded the curve $y = x^2 + 1$ and straight line $y = -x + 3$. Find the volume of the solid generated by revolving about x-axis. **(Apply CO4)**
8. Determine the solid of revolution obtained by rotating the region bounded between the curve $x^2 + y^2 = a^2$, x axis and lines $x = -a$ and $x = a$ if axis of revolution is x-axis. **(Apply CO4)**
9. Evaluate the integral $\int_0^1 \int_2^3 x + 2y + 4\, dy\, dx$. **(Analyse CO5)**
10. Evaluate the integral $\int_0^1 \int_2^3 \int_1^2 xyz\, dz\, dy\, dx$. **(Analyse CO5)**

DEVA MATHA COLLEGE KURAVILANGAD

(5 x 10=50)

DEPARTMENT OF ENGLISH, DEVAMATHA COLLEGE, KURAVILANGAD
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
B.A. ENGLISH LANGUAGE AND LITEARATURE
EN3CCT05– LITERATURE AND/AS IDENTITY
SEMESTER 3

1. Analyze the theme of the novel *The Dark Holds No Terrors?* 5 marks (CO 3)
2. Describe the power of language according to Amy Tan? 5 marks(CO 3)
3. Analyze the poem 'At the Lahore Karhai' in the light of geographical and cultural dislocation. 5 marks (CO 4)
4. Discuss the specialty of Mussoorie as described by the protagonist? 5 marks (CO 4)
5. Describe the entry of Goddess Kali. 5 marks (CO 2)
6. Comment on why Dadima reprimands the narrator for troubling a peacock that landed on their terrace? 5 marks (CO 1)
7. Explain what the author learns about motherhood from others? 5 marks (CO 2)
8. List the signs that foretold the black moments of Kamur? 5 marks (CO 1)



DEPARTMENT OF MALAYALAM

DEVA MATHA COLLEGE KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.A MALAYALAM

M L 3 CCT03 – ദൃശ്യകലാസാഹിത്യം

SEMESTER III

Time : 3 Hours

Max.Marks : 150

1.ഭാരതത്തിന്റെ നാടകപാരമ്പര്യത്തെക്കുറിച്ച് വിവരിക്കുക 20 Marks (CO 1)

2. മലയാളത്തിലെ സംസ്കൃതനാടകവിവർത്തനങ്ങളെക്കുറിച്ച് എഴുതുക 10 Marks (CO 1)

3.നളചരിതം ആട്ടക്കഥയുടെ ഭാഷാപരവും സാഹിത്യപരവുമായ സവിശേഷതകൾ ചർച്ച ചെയ്യുക. 20 Marks (CO 2)

4.കല്യാണസൌഗന്ധകത്തെ മുൻനിർത്തി കുഞ്ചൻനമ്പ്യാരുടെ തുള്ളലുകളുടെ സവിശേഷതകൾ ചർച്ച ചെയ്യുക. 20 Marks (CO 2)

5.മലയാളനാടകവേദിക്ക് സി.ജെ തോമസ് നൽകിയ സംഭാവനകൾ വിവരിക്കുക 10 Marks (CO 3)

6.നിലനിൽക്കുന്ന നിയമവ്യവസ്ഥയെ ക്രൈം നാടകം പ്രശ്നവത്കരിക്കുന്നുണ്ടോയെന്ന് വിലയിരുത്തുക 10 Marks (CO 3)

7. അൻവറിന്റെ ഉസ്താദ് ഹോട്ടലിൽ രുചിയുടെ രാഷ്ട്രീയമുണ്ടോയെന്ന് പരിശോധിക്കുക. 10 Marks (CO 4)

8. മലയാളത്തിലെ സ്വതന്ത്രസിനിമകളെക്കുറിച്ച് ചർച്ച ചെയ്യുക. 20 Marks (CO 4)

9. വടക്കൻപാട്ടുസിനിമകളുടെവസാംസ്കാരികരാഷ്ട്രീയംനെ തിരിച്ചറിയുക 10 Marks (CO 5)

10. മലയാളത്തിലെ പഴശ്ശിരാജസിനിമകളെക്കുറിച്ച് വിവരിക്കുക 20 Marks (CO 5)

DEPARTMENT OF PHYSICS, DEVA MATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.Sc Mathematics (2019 Admissions)

PH3CMT01- Modern Physics & Electronics

SEMESTER:3

1. Discuss the LS and JJ coupling schemes- 5 Marks (CO1)
2. Discuss the success of Bohr atom model in explaining hydrogen spectra- 10 Marks (CO1)
3. Define packing fraction- 5 Marks (CO2)
4. State and explain the salient features of nuclear forces- 10 Marks (CO2)
5. If half life of a radioactive element is 1 year, calculate its mean life- 5 Marks (CO3)
6. Illustrate how the age of fossils be determined by radio carbon dating?- 5 Marks(CO3)
7. Elaborate the concept of matter waves- 5 Marks(CO4)
8. The lowest energy of particle trapped in a box is 40 eV. What are the possible three higher energy of the particle- 5 Marks (CO4)
9. Obtain the time dependent Schrodinger equation for a free particle – 10 Marks(CO4)
10. Find the probability of finding aparticle between 0.4L and 0.6L in a one dimensional box of length L- 5 Marks (CO5)
11. Differentiate between Raman and Raleigh scattering- 5 Marks (CO6)
12. Explain Raman effect on the basis of quantum theory- 10 Marks(CO6)
13. Explain the formation of a p-n junction- 5 Marks (CO7)
14. Sketch and explain the characteristic of a Zener diode- 5Marks (CO7)
15. Explain how a transistor acts as an amplifier- 5 Marks (CO8)
16. What is the necessity of biasing in a transistor – 5 Marks(CO8)
17. Diffrentiate between the binary and decimal number systems with examples- 5 Marks(CO9)
18. Why are the universal gates called so. IIustrate – 10 Marks (CO9)



DEPARTMENT OF STATISTICS

DEVA MATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

NAME OF THE PROGRAMME: B.Sc. Mathematics

COURSE CODE & NAME OF THE COURSE: **ST3CMT03 - PROBABILITY DISTRIBUTIONS**

SEMESTER: III

1. Describe the concept of mathematical expectation. 5 Marks (CO1)
2. Distinguish between raw moments and central moments. 5Marks (CO1)
3. If X_i is a random variable taking values i and –i with equal probabilities, show that Weak Law of Large Numbers cannot be applied to the independent sequence $X_1, X_2, \ldots, X_n$. (CO2) 5 Marks
4. If X follows binomial with n = 100, p = 0.5, using Tchebycheff's inequality, discover a lower bound for P(| X – 50 | < 7.5). (CO2) 5 Marks
5. Evaluate mean and variance of binomial distribution. 5 Marks (CO3)
6. Explain lack of memory property of geometric distribution. 5 Marks (CO3)
7. Deduce A.M. and H.M. of type-2 beta distribution 5 Marks (CO4)
8. If X is normally distributed with mean 20 and S.D. 5, evaluate probability that 16<X<22, X>23, and |X-20|>5. (CO4) 5 Marks
9. Deduce the mgf of chi - square distribution and hence find mean and variance. 5 Marks (CO5)
10. If X is a random variable following F distribution with (n_1, n_2) degrees of freedom, then criticize the distribution of reciprocal of X. (CO5) 5 Marks

(10x5=50 marks)



DEVAMATHA COLLEGE KURAVILANGAD

ADDITIONAL LANGUAGE HINDI II B.A/BSC SEM-IV

DRAMA & LONG POEM CODE : HN 4CCTO4

OBE OUTCOME MEASUREMENT TIME : 1 ½ HRS MARKS :50

Answer the following questions. All questions are compulsory .

CO1-

1.नाटक केलिए आवश्यक तत्व क्या-क्या है ?

2.लम्बी कविता से क्या तात्पर्य है ?

CO2-

3. कवि अग्निशेखर का परिचय कीजिए।

4. उतनी दूर मत ब्याहना बाबा, किसकी रचना हे ? किस विधा की रचना है?

CO3-

5.शहंशाह की नीदं कविता में चित्रित समस्या क्या है ?

6.ढाबा कविता किस बिन्दु पर आधारित है ?

CO4-

7.विशु का चरित्रचित्रण कीजिए

8. धर्मपद के क्रांतिकारी व्यक्तित्व पर प्रकाश डालिए।

CO5

9. अग्निशेखर की कविता आतंक का जीवंत अनुभव है।यह कथन कहाँ तक सार्थक है?

10.शहंशाह कविता का सन्देश क्या है ?

(Each carries 5 marks) 10x5=50 mks

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DEVA MATHA COLLEGE KURAVILANGAD

CBCS Degree Examination

Programme : B. Sc. Mathematics

Semester IV Core Course – MM4CRT04: Vector Calculus, Theory of Numbers and Laplace transforms

Time: $1\frac{1}{2}$ hrs Maximum marks: 50

Each question carries **5** marks.

1. Find the curve's unit tangent vector $\bar{r}(t) = 2\cos cos\, t\ i + 2\sin sin\, t\ j + \sqrt{5}\, t\, k$. **(Understand CO1)**
2. Explain tangential and normal components of acceleration. **(Understand CO1)**
3. Evaluate $\int_C (x + y)ds$ where C is the straight line segment x = t, y = 1- t, z = 0 joining (0,1,1) to (1,0,1) **(Evaluate CO2)**
4. Prove that $y\, dx + x\, dy$ is exact and evaluate the integral. **(Evaluate CO2)**
5. Differentiate between Normal and Tangential form of Green's theorem. **(Apply CO3)**
6. Integrate $G(x, y, z) = x^2$ over the cone $z = \sqrt{x^2 + y^2}$, $0 \leq z \leq 1$. **(Apply CO3)**
7. Using Fermat's theorem, develop the congruence $11^{104} \equiv -1\ (mod\ 17)$.**(Create CO4)**
8. Prove that for arbitrary integers *a* and *b*, $a \equiv b(mod\ n)$ if and only if *a* and *b* leave the same non-negative remainder when divided by *n*. **(Create CO4)**
9. Find the Laplace transform of e^{ax}. **(Analyse CO2)**
10. Solve the differential equation $y'' + 4y = 0,\ y(0) = 2,\ y'(0) = -8$ using Laplace Tranforms **(Analyse CO2)**



DEPARTMENT OF ENGLISH, DEVAMATHA COLLEGE, KURAVILANGAD
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
B.A. ENGLISH LANGUAGE AND LITEARATURE
EN4CCT06– ILLUMINATIONS

SEMESTER 4

1. Describe the reactions of Roucolle and Pole after their release 5 marks (CO 3)
2. Explain how the nightingale makes a red rose from the withered rose tree 5 marks (CO 3)
3. Bring out the words of suffering in the poem *Invictus.* 5 marks (CO 4)
4. Describe what happens to the boat when it loses its rudder. 5 marks (CO 4)
5. Comment on whether a child and professional reader approach the text in the same way. 5 marks (CO 2)
6. List Keller's plans for the third day. 5 marks (CO 1)
7. Compare the reaction of the rich and poor when the Sterling Exchange falls? 5 marks (CO 2)
8. Explain what Rowling means by quixotic or paradoxical choice 5 marks (CO 1)
9. Analyze the advice given by Luz Long to Owens when he failed in the trials. 5 marks (CO 5)
10. Comment on Gibran's opinion about a divided house. 5 marks (CO 5)



DEPARTMENT OF MALAYALAM, DEVAMATHA COLLEGE KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASURMENT

B.A. MALAYALAM

Commoncourse II

ML4CCT04- മലയാളഗദ്യരചനകൾ

SEMESTER 4

Time: 3 Hours Max.marks:200

1. അടുക്കള വീണ്ടെടുക്കപ്പെടേണ്ട ലോകമാണെന്ന നിഗമനത്തിന്റെ സാംഗത്യമെന്ത്? വിവരിക്കുക. **20 Marks (CO1)**
2. അരിസ്റ്റോട്ടിലിന്റെ ദൃഷ്ടിയിൽ ഏറ്റവും ഉന്നതമായ കല ഏത് ? വിശദമാക്കുക. **20 Marks (CO1)**
3. കോളേജ് വിദ്യാഭ്യാസ കാലഘട്ടം എം.ടി.വാസുദേവൻ നായർ പ്രഭാഷണത്തിൽ ഓർമ്മിച്ചെടുക്കുന്ന തെങ്ങനെ? വിവരിക്കുക. **20 Marks (CO2)**
4. മനുഷ്യപുരികങ്ങളുടെ പ്രധാന ധർമ്മങ്ങൾ പരിചയപ്പെടുത്തുക. **20 Marks (CO2)**
5. കാരൂർ കഥകളിലെ ഹാസ്യരസത്തെക്കുറിച്ച് എം.എസ് കുമാരൻ നായർ അഭിപ്രായം വിലയിരുത്തുക. **20 Marks (CO3)**
6. സംസ്കൃത ഭാഷയുമായി മൊഹാക് ഭാഷയ്ക്കുള്ള സാമ്യങ്ങൾ പരിശോധിക്കുക. **20 Marks (CO3)**
7. സിയാറ്റിൽ മൂപ്പന്റെ പ്രസംഗത്തിൽ നിറഞ്ഞുനിൽക്കുന്ന പാരിസ്ഥിതിക ദർശനം വിമർശനാത്മകമായി വിലയിരുത്തുക. **20 Marks (CO4)**
8. കാരൂർക്കഥകളുടെ രുചിഭേദങ്ങളെപ്പറ്റി ബി.സരസ്വതി പ്രകടിപ്പിക്കുന്ന അഭിപ്രായങ്ങൾ ക്രോഡീകരിക്കുക. **20 Marks (CO4)**
9. ഇരട്ടമൊഴിത്തം എന്നാലെന്തെന്ന് മലയാളഭാഷയെ മുൻനിർത്തി പരിശോധിക്കുക. **20 Marks (CO5)**

10. മലയാള പ്രസാധന ചരിത്രത്തിൽ ഈശ്വരപിള്ള വിചാരിപ്പുകാർക്കുള്ള സ്ഥാനം നിർണ്ണയിക്കപ്പെടുന്നത് എപ്രകാരമെന്ന് വിശദമാക്കുക.20 **Marks (CO5)**



DEPARTMENT OF PHYSICS, DEVA MATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.Sc Physics (2019 Admissions)

PH2CMP02-Practicals

1. Explain the procedure to measure parameters such as Modulus of elasticity/ dispersive power etc– 5 Marks (CO1)
2. Systematically tabulate the outcome of the measurement- 5 Marks (CO1)
3. Construct electronic/electrical circuits using connection diagrams – 5 Marks (CO2)
4. Measure the output -5 Marks (CO2)
5. Repeat the experiment for different experimental conditions- 5 Marks (CO3)
6. Graphically or otherwise analyze the variation in the results under different conditions- 5 Marks (CO3)
7. Compare the results with theoretical or standard values – 5 Marks (CO4)
8. Estimate the error in final result obtained- 5 Marks (CO4)



DEPARTMENT OF PHYSICS, DEVA MATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.Sc Chemistry (2019 Admissions)

PH4CMT01- Optics& Electricity

SEMESTER.4

1. Explain why two independent sources cannot be coherent- 5 Marks (CO1)
2. State and explain the principle of superposition- 5 Marks (CO1)
3. Obtain expression for fringe width in a Youngs double slit experiment- 5 Marks (CO2)
4. A combination of convex lens and plane glass is illuminated by monochromatic light.The diameter of 10th dark ring is measured in reflected light and is found to be 4.8mm. Find he wavelength of light used. The radius of curvature of lens is 90 Cm. 5 Marks (CO2)
5. Distinguish between Fresnel and Fraunhofer diffraction- 5 Marks (CO3)
6. Sketch the diffraction pattern from a single slit- 5 Marks(CO3)
7. Describe a method by which polarization can be achieved- 5 Marks(CO4)
8. Explain the uses of polaroids- 5 Marks (CO4)
9. Give the theory of production of elliptically polarized light- 10 Marks (CO5)
10. Distinguish between an elliptically and circularly polarized light using a quarter wave plate – 5 Marks(CO5)
11. Distinguish between stimulated and spontaneous emission - 5 Marks (CO6)
12. Explain a three level laser system- 10 Marks (CO6)
13. State Gauss's law in dielectrics- 5 Marks(CO7)
14. Differentiateiate between polar and non polar dielectrics- 5 Marks (CO7)
15. Discuss the growth and decay of current through a LC circuit- 5 Marks (CO8)
16. A bulb is of 100 W for 220 V supply. Find the resistance of the bulb and the peak voltage of the source - 5 Marks (CO8)
17. Define capacitive reactance and how is it related to frequency- 5 Marks (CO9)
18. With necessary mathematical equations and phasor diagram discuss variation of current through a pure inductor- 5 Marks (CO9)



DEPARTMENT OF STATISTICS

DEVA MATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

NAME OF THE PROGRAMME: B.Sc. Mathematics

COURSE CODE & NAME OF THE COURSE: **ST4CMT04 - STATISTICAL INFERENCE**

SEMESTER: IV

1. Describe statistical inference. 5 Marks (CO1)
2. In N(μ , σ^2), identify the m.l.e. for μ when σ^2 is known. 5Marks (CO1)
3. Discuss sufficient condition for consistency. 5 Marks (CO2)
4. Discuss different steps in statistical testing. 5 Marks (CO2)
5. Explain properties of a good point estimate. 5 Marks (CO3)
6. Examine whether $\bar{X}$ is sufficient for the Poisson parameter. 5 Marks (CO3)
7. Compute confidence interval for the mean of N(μ , σ^2) when σ^2 is unknown. 5 Marks (CO4)
8. Explain the method of minimum variance 5 Marks (CO4)
9. A continuous random variable X has the density function f(x, θ) = 1/θ, 0 ≤ x ≤ θ. It is desired to test the hypothesis H_0: θ= 1 against H_1: θ= 2 using a single observation x where x≥0.95is used as the critical region. Decide the significance level of the test. 5 Marks (CO5)
10. Random samples of sizes 500 and 400 are found to have means 11.5 and 10.9 respectively. Judge whether the samples be regarded as random samples from the same population whose SD is 5. 5 Marks (CO5)

(10x5=50 marks)



DEVAMATHA COLLEGE KURVILANGAD

Outcome Measurement Test

MM5CRT01- Mathematical Analysis

Max marks: 50 Time: 1 hour

1. Explain order properties of real line. (CO1)

2. Explain the completeness property of $\mathbb{R}$ (CO1)

3. Determine convergence of the sequence $((-1)^n : n \in \mathbb{N})$ (CO2)

4. Determine $\lim_{n\to\infty} \frac{n}{n^2+1}$. (CO2)

5. Explain the geometric series.(CO3)

6. Explain Ratio Test for the convergence of a series with an example(CO3)

7. Evaluate $\lim_{x\to-1} \frac{x+5}{2x+3}$ (CO4)

8. Evaluate $\lim_{x\to0} \frac{x^2}{|x|}$ (CO4)

9. Explain (with proof) limit theorems which give limits of sum and product of functions .(CO5)

10. Explain the Squeeze theorem with an example. (CO5)



DEPARTMENT OF MATHEMATICS, DEVA MATHA COLLEGE, KURAVILANGAD
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
NAME OF THE PROGRAMME : B.SC. MATHEMATICS
COURSE CODE & NAME OF THE COURSE: MM5CRT02, DIFFERENTIAL EQUATIONS
SEMESTER: FIVE

1. (CO1) Give an example of an exact differential equation and solve it?
2. (CO1) Show that Bernoulli's equation can be reduced to a linear equation by change of variable $z = y^{1-n}$
3. (CO2) Show that the change of variable $x = e^z$ transforms Euler's equidimensional equation into a new equation with constant coefficients.
4. (CO2) Show that the general solution of the equation $y'' + 2y' + y = 0$ approaches 0 as $x \to \infty$.
5. (CO3) Use the method of power series to solve the Legendre's equation.
6. (CO3) Solve $y'' + xy' + y = 0$ using the method of power series.
7. (CO4) Solve $\frac{dx}{x} = \frac{dy}{y} = \frac{dz}{z}$
8. (CO4) Solve $\frac{dx}{x(y-z)} = \frac{dy}{y(z-x)} = \frac{dz}{z(x-y)}$



DEPARTMENT OF MATHEMATICS, DEVA MATHA COLLEGE, KURAVILANGAD
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
NAME OF THE PROGRAMME: B.SC. MATHEMATICS
COURSE CODE & NAME OF THE COURSE: MM5CRT03, ABSTRACT ALGEBRA

SEMESTER: FIVE

1. (CO1) Examine the set $H = \{1, -1, i, -i\}$, $i = \sqrt{-1}$ with complex multiplication, (H, ×) is a cyclic subgroup of non-zero complex numbers with multiplication.

2. (CO1) Let G be a group of order 77. List all cyclic subgroups of a group of G.

3. (CO2) Show that every permutation can be written as product of disjoint cycles.

4. (CO2) Write the orbits of (134) in S_5?

5. (CO3) Test whether $f(x, y, z) = x$ from $(Z \times Z \times Z, +)$ to $(Z, +)$ is a group homomorphism or not? Also find the factor group $\frac{Z \times Z \times Z}{ker(f)}$?

6. (CO3) Classify all group homomorphisms from $(Z, +)$ to $(Z, +)$

7. (CO4) Evaluate the number of proper ideals of a field?

8. (CO4) Let I and J be any ideals of R. Justify $I \cup J$ is an ideal of R if and only if one ideal is contained in another.



DEPARTMENT OF MATHEMATICS, DEVA MATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

NAME OF THE PROGRAMME : B.SC. MATHEMATICS

COURSE CODE & NAME OF THE COURSE: MM5CRT04 ,

SEMESTER: FIVE

1. What are the key natural resources? Explain the uses of natural resources. (CO1)
2. Who is called an ecosystem? How do humans affect the ecosystem?(CO1)
3. Explain the social issues related to the environment. (CO2)
4. Which are the important legislations in India for the protection of the environment. (CO2)
5. Write a note on Fibonacci and Sewage treatment.(CO3)
6. Analyse the occurrence of Fibonacci sequence in compositions of 1's and 2's.(CO3)
7. What is the rule of golden ratio? (CO4)
8. How do you find the golden ratio in the human body? (CO4)
9. Summarise the important human rights legislations in India. (CO5)
10. Explain the relevance and different aspects of human rights education. (CO5)



DEPARTMENT OF MATHEMATICS, DEVA MATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

NAME OF THE PROGRAMME : B.SC. MATHEMATICS

COURSE CODE & NAME OF THE COURSE: MM5OPT02 , OPEN COURSE-APPLICABLE MATHEMATICS

SEMESTER: FIVE

1. The LCM of two numbers is 2310. There HCF is 30. If one number is 210, find the other number. (CO1)
2. $\frac{5}{12}$ part of what amount will be equal to $3\frac{3}{4}$ part of 100. (CO1)
3. Length of a rectangular garden is 20 metres more than its breadth. Area of the park is 2304 square metres. Find Length of the garden . (CO2)
4. In how many different ways can the letters of the word SOCIETY be arranged in such a way that the vowels always come together? (CO2)
5. The income of A and B are in the ratio $2:3$ and expenditure are in the ratio $1:2$. Each one saves Rs.2400. Find A's income.(CO 3)
6. A can do work in 15 days and B in 20 days. If they work on it together for 4 days, then find the fraction of the work that is remaining. (CO 3)
7. If the sides of a triangle are doubled. Find the percentage change in the area of the triangle. (CO 4)
8. Find the derivative of the function $(4t^2 - t)(t^3 - 8t^2 + 12)$. (CO 4)



DEVAMATHA COLLEGE KURVILANGAD

Outcome Measurement Test

MM6CBT01- Operations Research

Max marks: 50 Time: 1 hour

1. Formulate this problem as an LP model - A firm makes two products X and Y, and has a total production capacity of 9 tonnes per day. Both X and Y require the same production capacity. The firm has a permanent contract to supply at least 2 tonnes of X and atleast 3 tonnes of Y per day to another company. Each tonne of X requires 20 machine hours of production time and each tonne of Y requires 50 machine hours of production time. The daily maximum possible number of machine hours is 360. All of the firm's output can be sold. The profit made is Rs. 80 per tonne of X and Rs. 120 per tonne of Y. Formulate this problem as an LP model. (CO1)

2. Solve using simplex method:

Maximize $2x + y$ subject to the constraints $x - y - z \leq 1$, $x - y + z \leq 2$; $x, y, z \geq 0$ (CO1)

3. Plot the graph and solve

Maximize $2x + y$ subject to the constraints $x + y \leq 1$, $x, y, \geq 0$ (CO1)

4. Explain why dual of the dual is the primal. (CO2)

5. Show that dual of the dual is primal

Minimize $x + y$ subject to the constraints $2x + y \leq 1$, $y \leq ½$, $x, y, \geq 0$. (CO2)

6. Explain how to find the dual when a constraint is an equality. (CO2)

7. Apply North West Corner Rule to find an initial solution to the TP

	D1	D2	D3	D4	
O1	1	2	-2	3	200
O2	2	4	0	1	100
O3	1	2	-2	5	200
	150	200	50	50	

(CO3)

8. A batch of four jobs can be assigned to five different machines. The set up time for each job on each machine is given. Find an optimal assignment of jobs to machines which will minimize the total set up time

		Machines				
		1	2	3	4	5
	1	10	11	4	2	8
Jobs	2	7	11	1	14	12
	3	5	6	9	12	14
	4	13	15	11	10	7

(CO3)



9. Explain the method of domination in theory of games with an example (CO4)

10. Explain how to reduce into a 2x2 game and find the solution

1	7	2
6	2	7
5	1	6

(CO4)

DEVAMATHA COLLEGE KURVILANGAD

Outcome Measurement Test

MM6CRT01- Real Analysis

Max marks: 50 Time: 1 hour

1. Explain the limit criterion for continuity. (CO1)
2. Explain the continuity of rational functions (CO1)
3. Explain the method for location of roots of an equation with an example (CO1)
4. Determine the derivative of f(x) = x^3 using Caratheodory's theorem (CO2)
5. Determine the relative extrema of f(x) = $x + \frac{1}{x}$ for $x \neq 0$.(CO2)
6. Analyse the Riemann integrability of a monotone function in a closed interval. (CO3)
7. Analyse the Riemann integrability in [0,2] of a function f defined as
   $f(x) = 2, 0 \leq x \leq 1$ and $f(x) = 1, 1 \leq x \leq 2$ (CO3)
8. Evaluate $\lim \frac{x^2+nx}{n}$ for $x \in \mathbb{R}$ (CO4)
9. Evaluate $\lim \frac{\sin(nx+n)}{n}$ (CO4)
10. Evaluate $\lim x^2 e^{-nx}$ for $x \in \mathbb{R}$ (CO4)



DEVA MATHA COLLEGE KURAVILANGAD

CBCS Degree Examination

Programme - B.Sc. Mathematics

Semester VI Core Course-MM6CRT02 : Graph Theory and Metric Spaces

Time: 1 1/2 hrs Maximum marks: 50

Each question carries **5** marks.

1. Describe isomorphism between two graphs with examples. **(CO1)**
2. Explain subgraph, bipartite graph, complete graph, complete bipartite graph. **(CO1)**
3. Write a short note on walk, trail, path and cycle in a graph**(CO2)**
4. Explain adjacency matrix of a graph with example. **(CO2)**
5. Establish a necessary and sufficient condition for a graph to be an Euler graph. **(CO3)**
6. Prove that a graph is Hamiltonian if and only if its closure is Hamiltonian. **(CO3)**
7. Define a metric. Check whether $d(x,y)= |x+y|$ is a metric on **R. (CO4)**
8. Define closure of a set. Prove that A is closed iff $\bar{}$. **(CO4)**
9. Give an example for a Cauchy sequence which is not convergent. **(CO5)**
10. Prove that every complete metric space is a set of second category**(CO5)**



DEPARTMENT OF MATHEMATICS, DEVA MATHA COLLEGE, KURAVILANGAD
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
NAME OF THE PROGRAMME: B.SC. MATHEMATICS
COURSE CODE & NAME OF THE COURSE: MM6CRT03, COMPLEX ANALYSIS
SEMESTER: SIX

1. (CO1) Define the limit of a complex function and also define the continuity of a Complex valued function.

2. (CO1) Define about the derivative of a complex valued function and derive the necessary and sufficient conditions for differentiability.

3. (CO2) Show that if v is a harmonic conjugate of u in some domain and also u is a harmonic conjugate of v there, then u and v must be constant function.

4. (CO2) Examine whether $\exp(z + \pi i) = -\exp z$.

5. (CO3) Show that if m and n are integers,

$$\int_0^{2\pi} e^{im\theta} e^{-in\theta} d\theta = \begin{cases} 0 & when \ \ m \neq n \\ 2\pi & when \ \ m = n \end{cases}$$

6. (CO3) Evaluate $\int_0^{\pi/4} e^{it} dt$

7. (CO4) Show that $e^z = e \sum_{n=0}^{\infty} \frac{(z-1)^n}{n!}$

8. (CO4) Show in two ways that the sequence $z_n = -2 + i \frac{(-1)^n}{n^2}$

9. (CO5) Distinguish different types of singularities.

10.(CO5) Explain Cauchy's residue theorem.



DEPARTMENT OF MATHEMATICS, DEVA MATHA COLLEGE, KURAVILANGAD
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
NAME OF THE PROGRAMME: B.SC. MATHEMATICS
COURSE CODE & NAME OF THE COURSE: MM6CRT04, LINEAR ALGEBRA

SEMESTER: SIX

1. (CO1) Solve the system of linear equations $7x+5y = -12,\ 3x-4y = 1$.
2. (CO1) Solve the system $x+3y-2z = 0,\ 2x-y+4z = 0,\ x-11y+14z = 0$.
3. (CO1) Explain Cayley Hamilton theorem
4. (CO2) Explain vector space. Give an example.
5. (CO2) Explain subspace of a vector space. Give an example
6. (CO3) Consider the linear mapping f: R2 → R3 given by $f(x, y) = (x+2y, 2x-y, -x)$. Determine the matrix of f relative to the natural ordered bases.
7. (CO3) Consider the linear mapping f: R3 → R2 given by $f(x, y, z) = (2x-y, 2y-z)$. Determine the matrix of f relative to the ordered bases: {(1, 1, 1), (0, 1, 1), (0,0,1)} and {(0,1), (1, 1)).

7. (CO4) If λ is an eigenvalue of an invertible matrix A prove that $\lambda \neq 0$ and that λ^{-1} is an eigenvalue of A^{-1}.
8. (CO4) Show that eigenvectors corresponding to distinct eigenvalues are linearly independent.



DEPARTMENT OF MATHEMATICS, DEVA MATHA COLLEGE, KURAVILANGAD
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
NAME OF THE PROGRAMME: B.SC. MATHEMATICS
COURSE CODE & NAME OF THE COURSE: MM6PRT01, PROJECT
SEMESTER: SIX

Max Marks : 40

1. (CO1) Explain the major applications of your project.
2. (CO1) Which all mathematical tools have you used for the project?.
3. (CO2) Why do you choose this as your research topic?
4. (CO2) What are the challenges you faced during your research work? How did you overcome it?

