INSTRUCTIONS FOR CANDIDATES

The candidates are required to attempt two questions each from Sections A & B will carry 11 marks each. Section C will be compulsory 15 short questions carry 2 marks each.

Section A

Q.1 Define genetics. Give a brief account of pre-Mendelian concepts about heredity

Q.2 What is Cell Cycle and cell division? Explain the various stages of Mitosis cell division with suitable diagrams in roots of onion plant.

Q.3 What is various part of a chromosome? Explain the main features, structure of chromosome. Demonstrate the haploid, diploid and basic chromosome number in wheat crop.

Q.4 Define law of independent assortment. Explain the same with the help of suitable example.

Section- B

Q5. What is sex determination? Describe the different theory of sex determination in plant

Q.6 With the help of suitable examples explains the following:

   i) Quantitative Characters   ii) Polygenic inheritance

   iii) Genetic disorders   iv) Multiple alleles

Q.7 Define cytoplasmic inheritance. Discuss in brief various features of inheritance.

Q.8 Define Operon. Give a brief explanation of various components of operon model.

Section- C

Q.9 Write short comments on the following

(a) Epistasis	(i) Reciprocal cross and direct cross
(b) Sex limited characters	(j) Transcription
(c) Test cross and back cross	(k) Linkage and crossing over
(d) Homologous chromosome	(l) List the characters of pea plant studies by Mendel
(e) CIB technique.	
(f) Phenotype and genotype	(m) F1 generation and F2 (Segregation) generation
(g) Allele	(n) Klinefelter syndrome & Turner syndrome
(h) special types of chromosomes	(o) DNA

PATH-302- Integrated Pest and Disease Management

Teacher name: Ms. Sushampreet Sharma **Maximum Marks: 45**

Time Allowed: Three Hours **Pass Marks 40%**

INSTRUCTIONS FOR CANDIDATES

The candidates are required to attempt two questions each from Sections A carrying 07 Marks each & section B carrying 7.5 marks each. Section C will be compulsory 08 short questions carrying 2 marks each.

Section A

Q1. Describe different methods to detect and diagnose the insect pests and diseases.

Q2. Explain different control methods of insect pests.

Q3. Discuss in detail economic importance of insect pest and diseases.

Q4. What is IPM? Describe about its concepts, principles and tools.

Section B

Q5. Discuss about the safety issues in pesticide uses.

Q6. Write a note on survey, surveillance and forecasting of diseases.

Q7. Describe the development and implementation of IPM in developing countries.

Q8. What are the conventional pesticides used for insect pests and diseases? Discuss in detail.

Section C

Q.9 Write short comments on

    I.   Predator, parasite and parasitoid.

   II.   Economic Threshold Level.

  III.   Host plant resistance.

  IV.   Pheromones.

   V.   Economic Injury Level.

  VI.   Pest Resurgence.

 VII.   Synergists.

VIII.   Sporadic disease.

समय:- :- 3 घंटे   अंक-75

नॉट :- सभी प्रश्न करने अनिवार्य है |

खंड :-(क)

प्रश्न :-1 हिंदी-साहित्य के भक्तिकाल की परिस्थितियों का सविस्तार वर्णन करो ?

अथवा

प्रश्न:-2 हिंदी साहित्य को स्वर्णयुग क्यों कहा जाता है ट्रक सहित लिखे ?

प्रश्न :-3 किन्हीं चार लोक्तियों का अर्थ बताते हुए उसका वाक्य प्रयोग स्पष्ट करे ?

अथवा

प्रश्न :-4 किन्हीं आठ मुहावरों का अर्थ लिखते हुए उसका वाक्य में सार्थक प्रयोग स्पष्ट करे ?

खंड :- (ख)

प्रश्न :-5 सप्रसंग व्याख्या :-

"अज़ीज़ साहब, ये शेअर आपने आज ही कहे हैं, या पहले के कहे हुए शेअर आज अचानक याद हो आए हैं?" सांवले चेहरे और घनी मूंछों वाले एक बाबू ने बायीं आंख को ज़रा-सा दबाकर पूछा. आस-पास खड़े सब लोगों के चेहरे खिल गए.

"यह बिल्कुल ताज़ा ग़ज़ल है," अज़ीज़ साहब ने अदालत में खड़े होकर हलफ़िया बयान देने के लहज़े में कहा,"इससे पहले भी इसी वज़न पर कोई और चीज़ कही हो तो याद नहीं." और फिर आंखों से सबके चेहरों को टटोलते हुए वे हल्की हंसी के साथ बोले,"अपना दीवान तो कोई रिसर्चदां ही मुरत्तब करेगा...."

अथवा

प्रश्न :-6 सप्रसंग व्याख्या :-

हिंदा– या अमीर! मैं आपकी खिदमत में सिर्फ इसलिए हाज़िर हुई हूं कि आपको इस इरादे से बाज़ रखूं| आपको अमीर मुआविया की कसम, अपने दीन की, अपनी नजात को, अपने ईमान को यों न खराब कीजिए| जिस नवी से आपने इस्लाम की रोशनी पाई, जिसकी जात से आपको यह रुतबा मिला, जिसने आपकी आत्मा को अपने उपदेशों से जगाया,

जिसने आपको अज्ञान के गढ़्ढे से निकालकर आफ़ताब के पहलू में बिठा दिया, उसी खुदा के भेजे हुए बुजुर्ग के नवासे का खून बहाने के लिए आप आमादा है!?

<div align="center">खंड :- (ग)</div>

प्रश्न :-7 (१)

प्रश्न :- जिन्दगी और गुलाब के फूल के रचनाकार का नाम लिखियें ?

प्रश्न :- परमात्मा का कुत्ता लेखक ने किसे कहा है ?

प्रश्न :- सजा कहानी किस विषय पर केन्द्रित है ?

प्रश्न :- सजा कहानी की मूल त्रासदी क्या है ?

प्रश्न :- देवरथ कहानी किस रचनाकार की है ?

प्रश्न :- भगवती वर्मा की कहानी का नाम लिखियें जो आपके स्लेबस में है ?

प्रश्न :- हिंदी साहित्य में भक्तिकाल का समयकाल लिखियें ?

प्रश्न:- रामभक्ति के बड़े कवि का नाम लिखियें ?

प्रश्न :- सूरदास किसकी भक्ति करते थे ?

प्रश्न :- तुलसी की कौनसी भाषा थी ?

प्रश्न :- कबीर के ग्रंथों के नाम लिखियें ?

प्रश्न :- जायसी किस प्रकार के भक्त थे ?

प्रश्न :- कबीर के माता-पिता का नाम लिखियें ?

प्रश्न :- भक्तिकाल की सामाजिक परिस्थितियाँ लिखियें ?

प्रश्न :- सजा कहानी के मूल पात्र कौन है , नाम लिखियें ?

समय:- :- 3 घंटे   अंक-75

नॉट :- सभी प्रश्न करने अनिवार्य है |

खंड :-(क)

प्रश्न :-1 हिंदी काव्य के विभिन्न आन्दोलन का संशिप्त परिचय दीजियें ?

अथवा

प्रश्न:-2 अज्ञेय के काव्य की विशेषताएं लिखियें ?

प्रश्न :-3 महादेवी वर्मा के काव्य की विशेषताएं लिखियें?

अथवा

प्रश्न :-4 अलंकार किसे कहते है स्पष्ट करे, अनुप्रास, रूपक,अतिशयोक्ति को उदाहरण देकर लिखियें?

खंड :- (ख)

प्रश्न :-5 'सप्रसंग व्याख्या :-

एक ओर राज्य में दुर्व्यवस्था फैल गई है, दूसरी ओर वह वृद्ध हो गया है। पहले जैसी ताकत अब उसके शरीर में नहीं रही । आलमगीर बनने का उसका विजय स्वप्न अब निराशा में तिरोहित हो चला है। उसकी चिंताएँ उसे एक पल के लिए भी चैन नहीं लेने देतीं और अंत में हताश होकर वह अहमदनगर लौट आया है।

अशक्त इतना हो गया है कि दिल्ली भी जा सकने में समर्थ नहीं है। मजबूर होकर वह अहमदनगर के किले में बीमार पडा हुआ है। शरीर उसका टूट चुका है, ज्वर और खाँसी से वह ग्रस्त हो गया है, अवस्था उसकी 89 वर्ष की हो गयी है। उसके पास एक मात्र उसकी बेटी जीनत उन्नीसा बैठी हुई है। भय और आशंका से आक्रांत जीनत का चेहरा उदास हो गया है ।

अथवा

प्रश्न :-6 सप्रसंग व्याख्या :-

प्रश्न :-6 पचपन खम्बे लाल-दीवारे उपन्यास के मुख्य पात्रों का चरित्र-चित्रण लिखियें?

"सुषमा को लगा कि नील आकर सिरहाने आकर खड़ा हो गया है, फिर उसने झुककर, धीरे से उसके बाल छुए हैं, सुषमा चौंककर उठ बैठी, चारो और घुप्प अँधेरा था | उसने काँपते हुए कंठ से पुकारा -नील !"?

बरामदे में सोई हुई भौंरी खांसी – सुषमा ने पाया कि वह अपनी चारपाई पर उठकर बैठी हुई है और नील कहीं नहीं है | सब ओर सन्नाटा है, भायवह, अकेला सन्नाटा | वह अकुलाकर खड़ी हुई और उसने खिड़की पूरी खोल दी| बाहर से प्रकाश की एक फांक आकर उसके पैरों पर लोटने लगी और सुषमा छड़ो का ठण्ड स्पर्श अनुभव करती हुई, अनझिप आँखों से बाहर ताकने लगी |"

<p align="center">खंड :- (ग)</p>

प्रश्न :-7 (१)

प्रश्न :- अज्ञेय का जन्म कब हुआ ?

प्रश्न :- अज्ञेय किस धारा के कवि है ?

प्रश्न :- अज्ञेय ने कितने तार-सप्तक निकाले ?

प्रश्न :- प्रसुमन क्या है ?

प्रश्न :- औरंगजेब एकांकी की मूल संवेदना क्या है ?

प्रश्न :- उपमा अलंकार का एक उदाहरण लिखियें ?

प्रश्न :- पचपन खम्बे लाल दीवारे उपन्यास के 4 गौण पात्रों के नाम लिखियें ?

प्रश्न:- श्लेष अलंकार किसे कहते हैं ?

प्रश्न :- महदेवी वर्मा की मृत्यु कब हुई ?

प्रश्न :- कछुआ धर्म हमें क्या सीख देता है ?

प्रश्न :- साहित्य की महत्ता पर अपने विचार लिखे ?

प्रश्न :- सुषम और नील में किस प्रकार का प्रेम था ?

प्रश्न :- सुषम की कोई 2 विशेषताएं लिखियें ?

प्रश्न :- अतिश्योक्ति अलंकार का उदाहरण लिखियें ?

प्रश्न :- यह मेरी मातृभूमि की मूल संवेदना लिखिए ?

गुरु नानक कॉलेज, बुढलाडा
समस्तर-6 (मई 2022)
हिंदी-साहित्य (विकल्प-1)

समय:- :- 3 घंटे   अंक-75

नॉट :- सभी प्रश्न करने अनिवार्य है |

खंड :-(क)

प्रश्न :-1 'रामा' निबंध का मूल सार लिखते हुए उसके चरित्र की विशेषताओं का वर्णन करे ?

अथवा

प्रश्न:-2 ध्रुवस्वामिनी नाटक की मूल संवेदना लिखियें

प्रश्न :-3 चीनी फेरी वाला के चरित्र की विशेषताओं का वर्णन करे?

अथवा

प्रश्न :-4 निबंध किसे कहते हैं उसके तत्वों का वर्णन करे?

खंड :- (ख)

प्रश्न :-5 2 सप्रसंग व्याख्या

दूर-पास बसे हुए गुड़ियों के बड़े-बड़े घरौंदों के समान लगने वाले कुछ लिपे-पुते, कुछ जीर्ण-शीर्ण घरों से स्त्रियों का झुण्ड पीतल-तांबे के चमचमाते मिट्टी के नए लाल और पुराने बदरंग घड़े लेकर गंगाजल भरने आता है, उसे भी मैं पहचान गई हूं। उनमें कोई बूटेदार लाल, कोई कुछ सफेद और कोई मैल और सूत में अद्वैत स्थापित करने वाली, कोई कुछ नई और कोई छेदों से चलनी बनी हुई धोती पहने रहती हैं। किसी की मोम लगी पाटियों के बीच में एक अंगुल चौड़ी सिंदूर-रेखा अस्त होते हुए सूर्य की किरणों में चमकती रहती है और किसी की कड़वे तेल से भी अपरिचित रूखी जटा बनी हुई छोटी-छोटी लटें मुख को घेर कर उसकी उदासी को और अधिक केन्द्रित कर देती हैं। किसी की सांवली गोल कलाई पर शहर की कच्ची नगदार चूड़ियों के नग रह-रहकर हीरे-से चमक जाते हैं और किसी के दुर्बल काले पहुंचे पर लाख की पीली मैली चूड़ियां काले पत्थर पर मटमैले चन्दन की लकीरें जान पड़ती हैं। कोई अपने गिलट के कड़े-युक्त हाथ घड़े की ओट में छिपाने का प्रयत्न-सा करती रहती है और कोई चांदी के पछेली-ककना की झनकार के साथ ही बात करती है?

अथवा

प्रश्न :-6 सप्रसंग व्याख्या :-

यौवन! तेरी चंचल छाया।
इसमें बैठे घूँट भर पी लूँ जो रस तू है लाया।
मेरे प्याले में पद बनकर कब तू छली समाया।
जीवन-वंशी के छिद्रों में स्वर बनकर लहराया।
पल भर रुकने वाले! कह तू पथिक! कहाँ से आया?

खंड :- (ग)

प्रश्न :-7 (१)

प्रश्न :- महादेवी वर्मा का जन्मकाल लिखिए ?

प्रश्न :- महदेवी की 2 रचनाएँ लिखियें ?

प्रश्न :- रामा किसकी रचना का प्रतीक है ?

प्रश्न :- चीनी मिट्टी वाला महदेवी में क्या देखता है ?

प्रश्न :- आत्मकथा किसे कहते हैं ?

प्रश्न :- रेखाचित्र की परिभाषा लिखियें ?

प्रश्न :- सुभद्राकुमारी चौहान किसकी रचना है?

प्रश्न:- जीवनी किसे कहते हैं ?

प्रश्न :- संस्कृत की पहली आत्मकथा का नाम ?

प्रश्न :- महदेवी वर्मा के उपन्यास का नाम लिखियें ?

प्रश्न :- किसी एक प्रगतिवादी लेखक का नाम लिखे ?

प्रश्न :- छायावाद के दो कवियों के नाम ?

प्रश्न :- प्रयोगवाद की 2 विशेषताएं लिखियें ?

प्रश्न :- आधुनिककाल का समयकाल क्या है ?

प्रश्न :- हिंदी साहित्य का काल-विभाजन क्या है ?

GURU NANAK COLLEGE BUDHLADA

MID SEMESTER TEST (MAY -2022)

CLASS –B.A.-III

PAPER – MATHEMATICS   TIME -3 HOURS

M.M. = 40

NOTE: Attempt any two questions from both sections A and B and Section C is compulsory.

SECTION –A

1. (a)   State and prove Modulation theorem. For Fourier transforms.

   (b)   Find Fourier Sine and Cosine transform of f(t)=t.

2. (a)   State and prove change of scale property for Fourier transform.

   (b)   Find Fourier Sine and Cosine transform of $f(t)=t^3$.

3. Solve $\frac{dx}{dt} - 2y = t$, $\frac{dy}{dt} - 4x + 2y = 0$ when , $x(0) = 3$, $y(0) = 0$

4. A string is stretched between two points (0,0) and (l,0). If it is diplaced along the curve y=ksin(πx/l) and released from rest in that position at time t=0. Find the displacement y(x,t) at any time t>0 and at any point x,0<x<l.

SECTION –B

1) For the recurrence relation s(n) + 3 s(n-1) – 4 s(n-2) =0 ; n > =2 and s (0) =1 and s(1) = -2 Find generating function and find the sequence which satisfies it .

2) Solve S (n) – 4 S (n-1) + 4 S (n-2) = 3n + 2^n with S (0) =1 and S (1) =1

3) Test the validity of : if he works hard then he will be successful . if he is successful; then he will be happy . therefore ,hard work leads to happiness .

4) Use the principle of mathematical induction to prove that

   1.3 + 3.5 + 5.7 + …………+ (2n-1) (2n+1) =(n\3)(4n^2 +6n-1) for all n belong to natural number

SECTION –C

1. Find the Sine integral of f(x)= exp (-kx)   ;x>0, k>0

2. **Find the sine and cosine Fourier transform of f(t)=t.**

3. **Find the Finite Fourier transform of f(t)=sin t.**

4. **State parsevel identity.**

5. **State convolution theorem**

6. **Determine C(5 ,2) by the recursive definition of binomial coefficient .**

7. **Use universal quantifier to state that sum of any two real numbers is real .**

8. **Explain the terms converse ,inverse and contrapositive and draw the truth table of these terms . .**

ਸਮਾਂ:3ਘੰਟੇ   ਪੰਜਾਬੀ ਲਾਜ਼ਮੀ   ਕੁਲ ਅੰਕ:75

1.ਕਿਸੇ ਇਕ ਲੇਖ ਦਾ ਵਿਸ਼ਾ ਵਸਤੂ ਲਿਖੋ:

   ੲ. ਲੋਕਧਾਰਾ ਦੀ ਪਰਿਭਾਸ਼ਾ ਤੇ ਲੱਛਣ (ਅ) ਲੋਕ ਗੀਤ ਦਾ ਜਨਮ   (12)

2. ਕਾਰਕ ਕੀ ਹੁੰਦਾ ਹੈ? ਵਿਸਥਾਰ ਸਹਿਤ ਲਿਖੋ। ਜਾਂ
    ਵਾਕ ਨੂੰ ਪਰਿਭਾਸ਼ਤ ਕਰਦੇ ਹੋਏ ਬਣਤਰ ਦੇ ਆਧਾਰ ਤੇ ਵਾਕ ਦੀਆਂ
    ਕਿਸਮਾਂ ਬਾਰੇ ਲਿਖੋ।   12

3.ਹੇਠ ਦਿਤੇ ਅੰਗਰੇਜ਼ੀ ਪੈਰੇ ਦਾ ਪੰਜਾਬੀ ਵਿਚ ਅਨੁਵਾਦ ਕਰੋ:

    We all know that we need energy to stay alive. We get this energy from the food we eat. During digestion, food is broken down into smaller substances for example, rice, bread contain carbohydrates. These carbohydrates are broken down to from glucose the glucose combines with oxygen in the cells of our body and provides energy.   (09)

4.ਹੇਠ ਲਿਖੇ ਵਾਕਾਂ ਸੰਬੰਧੀ ਬ੍ਰੈਕਟਾਂ ਵਿਚ ਪੁੱਛੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ ਦਿਓ:

    ੲ. ਤਪ ਨੂੰ ਧੰਦਾ ਬਣਾ ਲੈਣਾ ਠੀਕ ਨਹੀਂ।(ਪ੍ਰਧਾਨ ਤੇ ਅਪ੍ਰਧਾਨ ਕਰਮ ਦੀ ਪਛਾਣ ਕਰੋ)
    ਅ.ਰਾਮ ਨੇ ਰੋਟੀ ਖਾਧੀ। (ਉਦੇਸ਼ ਤੇ ਵਿਧੇ ਚੁਣੋ)
    ੲ. ਘੁਮਿਆਰ ਚੱਕ ਉੱਤੇ ਭਾਂਡੇ ਘੜਦਾ ਹੈ।(ਵਿਆਕਰਨ ਮੇਲ ਕਿੰਨ੍ਹਾਂ ਇਕਾਈਆਂ ਵਿੱਚ ਹੈ)
    ਸ.ਕੀ ਪੰਜਾਬੀ ਸਮਾਜ ਮਰਦ ਪ੍ਰਧਾਨ ਹੈ?
    ਹ.ਫੁਲਕਾਰੀ ਦੀ ਕਢਾਈ ਦਾ ਕਮਾਲ ਇਹ ਹੈ ਕਿ ਇਹ ਕੱਪੜੇ ਦੇ ਪੁੱਠੇ ਪਾਸੇ ਕੱਢੀ ਜਾਂਦੀ ਹੈ।
                       (ਵਾਕ ਦੀ ਕਿਸਮ ਤੇ ਯੋਜਕ ਪਛਾਣੋ)
    ਕ.ਗਰਮ ਦਿਉਤਿਆਂ ਵਿਚ ਪ੍ਰਥਮ ਸਥਾਨ ਭੂੰਮੀਏ ਨੂੰ ਪ੍ਰਾਪਤ ਹੈ।
              (ਕਾਰਜ ਦੇ ਆਧਾਰ ਤੇ ਵਾਕ ਦੀ ਕਿਸਮ ਦੱਸੋ)   6x2=12

5.ਹੇਠ ਲਿਖੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ ਲਿਖੋ:
    1.ਲੋਕਧਾਰਾ ਦੀ ਪਰਿਭਾਸ਼ਾ ਲਿਖੋ।
    2.ਸੀਮਾ ਦਿਉਤੇ ਦਾ ਕੀ ਮਹੱਤਵ ਹੈ।

    3. ਲੋਕ ਕਹਾਣੀ ਦੀਆਂ ਕਿਸਮਾਂ ਦੱਸੋ।
    4.ਪੰਜਾਬ ਦੀਆਂ ਪ੍ਰਸਿੱਧ ਲੋਕ-ਕਲਾਵਾਂ ਦੇ ਨਾਂ ਲਿਖੋ।
    5.ਤੀਆਂ ਲੇਖ ਦਾ ਲੇਖਕ ਕੌਣ ਹੈ।
    6.ਖਾਨਾਬਦੋਸ਼ ਲੋਕ ਕੌਣ ਹੁੰਦੇ ਹਨ।
    7.ਫੁਲਕਾਰੀ ਦੀਆਂ ਕਿਸਮਾਂ ਬਾਰੇ ਲਿਖੋ।
    8. ਪੰਜਾਬ ਦੇ ਕੋਈ ਦੋ ਲੋਕ ਨਾਚਾਂ ਬਾਰੇ ਲਿਖੋ।

    9.ਮੌਤ ਦੀਆਂ ਰੀਤਾਂ ਬਾਰੇ ਲਿਖੋ।

    10. ਅਵਿਕਾਰੀ ਸ਼ਬਦ ਪਰਿਭਾਸ਼ਤ ਕਰੋ।
    11.ਸਾਧਾਰਨ ਵਾਕ ਦੀ ਪਰਿਭਾਸ਼ਾ ਲਿਖੋ।
    12.ਕਾਰਜ ਦੇ ਆਧਾਰ ਤੇ ਵਾਕਾਂ ਬਾਰੇ ਲਿਖੋ।

    13. ਕਰਤਾ ਕਾਰਕ ਕਿਸ ਨੂੰ ਕਹਿੰਦੇ ਹਨ।

    14.ਅਪ੍ਰਧਾਨ ਕਰਮ ਕੀ ਹੁੰਦਾ ਹੈ।
    15.ਪ੍ਰਸ਼ਨਵਾਲੀ ਵਾਕ ਕੀ ਹੁੰਦਾ ਹੈ।   15x2=30

TIME: 3 HrsMaximum Marks: 60

NOTE- Attempt any two questions each from Section A and B carrying 10 marks each. From Section C attempt any ten questions carrying 2 marks each.

SECTION- A

1. Explain the definition of retailing also discuss various functions of retailer in the supply chain.

2. Discuss in detail how the retailers are classified on the basis of product offering made by them. Explain with examples.

3. Describe various dimensions of retail market segmentation.

4. Explain in detail the six parameters which lead to effective store management.

SECTION-B

5. Explain in detail the process of merchandizing with examples.

6. Discuss the factors a retailer should consider when establishing pricing objectives and policies.

7. Explain the strategic profit model in detail.

8. Discuss in detail the process of planning and retail promotional strategy.

SECTION-C

9. Write short note on:

   a) Retail store design
   b) Sales forecasting
   c) Communication
   d) Barcode
   e) Retail store format

   f) Full length pricing
   g) Shopping
   h) Trading area
   i) Planogram
   j) Markup pricing

CLASS: B.com(H)-i, Sem: II   **MAX.MARKS:- 70**
Subject: Principles &Practice of management
Max.Time:- 3 hours

Note: Students are required to attempt two questions each from each section A & B carrying 10 marks each and section C consisting of 12 short questions carrying 3 marks each. Students are required to attempt 10 questions.

SECTION-A   2*10=20

1. Define Management. Explain the contribution in Management thoughts in detail.
2. Explain Communication Process and Barriers of communication.
3. What do you mean by Leadership? Discuss different theories of Leadership.
4. Define Motivation. Explain different theories of Motivation.

SECTION – B   2*10=20

5. Define Business Management. Discuss functions of Management in detail.
6. Define forecasting Discuss various techniques of forecasting.
7. Explain the objectives and function of HRM.
8. Discuss the bases and types of departmentation.

SECTION-C   10*3=30

1. Define controlling.
2. Esprit-de-crops.
3. Scalar Chain.
4. Qualities of Leader.
5. Types of Motivation.
6. Formal Communication.
7. Staffing.
8. Authority Vs Responsibility.
9. difference B/W Centalization and Decentralization
10. What is Decision Making?
11. Co-ordination
12. Management

GURU NANAK COLLEGE, BUDHLADA

MID SEMESTER TEST (MAY -2022)

CLASS –B.Sc.-I

PAPER – MATHEMATICS   **TIME -3 HOURS**

M.M. = 40

NOTE: Attempt any two questions from both sections A and B and Section C is Compulsory.

SECTION –A

1) Solve the equation $z^2 (p^2z^2 + q^2) =1$

2) Solve $x^2 (y-1) \frac{\partial^2 z}{\partial x^2} - x(y^2 -1) \frac{\partial^2 z}{\partial x \partial y} + y(y-1) \frac{\partial^2 z}{\partial y^2} = \frac{\partial z}{\partial y} - xy \frac{\partial z}{\partial x}$ by reducing it into canonical form .

3) Find the complete solution of $x^2 p^2 + y^2 q^2 = z^2$

4) Find the general solution of lagrange 's equation
$$(X^2 – y^2 – z^2)p + 2xyq =2xz$$

SECTION –B

1) Prove that the equation $x^2 + 2xy +y^2 -2x -1 =0$ represnts a parabola and find its focus ,latus rectum and its directrix . Also trace the curve .

2) Obtain the equations to the spheres which pass through the circle
$X^2 + y^2 +z^2 -2x+2y+4z-3 =0$,$2x+y + z = 4$ and touch the plane $3x+ 4y =14$

3) Let $\vec{a} , \vec{b} , \vec{c}$ be three vectors of magnitude 5,3,1 respectively . If each one is perpendicular to the sum of other two vectors , then find the value of $|\vec{a} + \vec{b} + \vec{c} |$.

4) If $\vec{a} , \vec{b} , and \ \vec{c}$ are mutually perpendicular vectors of equal magnitude ,

Show that they are equally inclined to the vector ($\vec{a} + \vec{b} + \vec{c}$)

SECTION –C

1) Reduce $4x^2 - 4xy + y^2 -8x -6y + 5 =0$ to the standard form and classify the conic .

2) Do the spheres $x^2 + y^2 + z^2 = 64$ and $x^2 + y^2 + z^2 -24x -30y-12z +400 =0$,touch internally or externally ? Find the point of contact .

3) Find the equation of the sphere concentric with $x^2 + y^2 + z^2 – 2x – 4y – 6z -11 =0$ but of double the radius .

4) 1) If $\vec{A} = x^2yz\,\hat{\imath} - 2xz^3\hat{\jmath} + xz^2\hat{k}$ and $\vec{B} = 2z\,\hat{\imath} + y\,\hat{\jmath} - x^2\,\hat{k}$. Then find the value of $\frac{\partial^2}{\partial x \partial y}(\vec{A} + \vec{B})$ at the point (0,0,2)

5) Differentiate $r^2\vec{r} + (\vec{a}.\vec{r})\vec{b}$ w.r.t . t

6) show that the equations xp-qy =0 and z (xp +yq) = 2xy are compatible and solve these .

7) Solve αr =xy

8) Find partial differential equation of planes having equal x , y intercepts

SECTION –C

Roll No……………

Paper : Chemistry	**M : 29**
Class: B.Sc.-II (M/NM) **Semester: IV**	**Time : 3.0 hrs**

Note: All questions are compulsory.

Section-A

1. (a) What are the postulates Werner Coordination theory?   1.5
   (b) Define isomerism, discuss only structural isomerism.   1.5
2. (a) Calculate the oxidation number of sulphur in the following- SO_4^{2-}, Na_2SrO_3 & $S_2O_4^{2-}$.
                                                                     1.5
   (b) Give examples of empirical oxidation potential and reduction potential.   1.5
3. (a) Define electrochemical series.   1.5
   (b) Discuss bonding in $[Fe(CN)_6]^{3-}$ 1.5

Section-B

4. What are epoxides? Why are they chemically very reactive? Give their reaction with
   Grignard reagents and ammonia?   4

   or

   Give the mechanism of ring opening reaction of epoxides in the presence of acid and
   base. What is the orientation of ring opening reaction?
5. What are oils and fats? How does an oil get converted into a fat? How do you get
   glycerol from oils and fats?   4

   or

   What are synthetic detergents? What are their advantages over soaps? What are their
   disadvantages, if any?
6. Explain cleansing action of soaps and synthetic detergents.   1

Section-C

7. (a) Draw and discuss the phase diagram of water (one component system).   2
   (b) What is congruent and incongruent malting point?   2

   or

   (a) Discuss the phase diagram of sulphur system.   2
   (b) Discuss the pattinson's process for the dsilverisation of lead.   2
8. The molar conductance of sodium acetate, HCL and NaCl at infinite dilution are 91.0 x
   10^{-4}, 4.26 x 10^{-4} and 126.45 x 10^{-4} S m^2 Mol^{-1} respectively at 25 $^{\circ}$ C calculate the moluler
   conductance at infinite dilution for acetic acid.   4

   or

   (a) Derive ostwald's dilution law for weak electrolytes.   2
   (b) Describe Debye-huckle theory for strong electrolyte. Hence write expression for
       Debye-huckle on sager equation.   2
9. How does moler conductivity of strong and weak electrolyte with dilution.   1

Guru Nanak College Budhlada
Class: B.voc CS 1ˢᵗ (Sem-2ⁿᵈ)
Subject: PROGRAMMING USING C++
MST- May 2022

Time: Three Hours   Maximum Marks: 60

Note: Attempt two questions each from Section A and B carrying 9 marks each and the entire Section C consisting of 12 short answers type questions carrying 2 Marks each.

SECTION: A

Ques1: Explain the various characteristics of object oriented programming languages. Discuss in detail various advantages and disadvantages of object oriented programming languages.

Ques2: How objects and classes are defined and accessed in C++? Explain.

Ques3: What do you mean by constructor? What are various types of constructors? Discuss in detail.

Ques4: Define inheritance. What are various types of inheritance? How ambiguity is resolved in multiple inheritances? Explain giving suitable examples.

9*2=18

SECTION: B

Ques5: What do you mean by operator overloading? Which operators cannot be overloaded? How can we overload unary and binary operators? Explain giving suitable examples.

Ques6: Write a program in C++ to demonstrate the concept of polymorphism.

Ques7: Write short notes on the following:
(a) Generic functions and generic classes.
(b) Overloading of template functions.

Ques8: What are exceptions? What are various exceptions handling techniques? Explain the significance of try and catch block and give their syntax.

9*2=18

SECTION – C

9. Write short notes on the following:
(a) what are the characteristics of register variables? 2
(b) what do you mean by function redefining? 2
(c) what is a static class member? 2
(d) what is a destructor? What is its significance? 2
(e) Write the use of new and delete operators. 2
(f) what is abstract base class? 2
(g) what is function overloading? 2
(h) what is the use of pure virtual function? 2
(i) what is function overriding? 2
(j) what is the use of rethrowing exceptions? 2
(k) what do you mean by uncaught exceptions? 2
(l) what are the advantages of using exception handling routines in your program?

12*2=24

Basics of Food Packaging
Semester II

Time allowed: 3 Hours   **Maximum Marks 74**

Note: The candidate are required to attempt two questions each from section A and B carrying 11 marks each and entire section C consisting of 10 short answer type questions carrying 2 marks each.

Section A

1. Define Food Packaging. What is the need of packaging and discuss in detail the various functions of food packaging.
2. a. Explain edible packaging and the materials used for edible packaging.
   b. Discuss in detail the manufacturing of aluminium foils and laminates.
3. Discuss the following packaging material in detail:
   a. Metal Cans
   b. Plastic Containers
4. Discuss the following packaging material in detail:
   a. Paper and Paper board
   b. Glass containers

Section B

5. a. Explain retort packages and discuss the various layers used in retort pouches.
   b. Explain Inert Gas Packaging and Active Packaging Technology
6. Explain Flexible packaging in detail.
   a. Cellophane   b. PVC
7. Explain various packaging aspects of:
   a. Cereals
   b. Meat and meat products
8. Explain biodegradable packages and shrink package in detail.

Section C

9. Write short answers.
   I. Define Packaging
   II. What are the functions of Packaging?
   III. Define retort pouches.
   IV. Differentiate vacuum and gas packaging.
   V. Active packaging
   VI. Importance of shrink packaging
   VII. Polystyrene
   VIII. Polyethylene
   IX. Metal cans
   X. Name any 4 flexible packaging materials
   XI. PS
   XII. Tetra pack
   XIII. Gas Packaging
   XIV. MAP
   XV. Active Packaging

Introductory Food Microbiology

Semester II

MST-May 2022

Time allowed: 3 Hours   **Maximum Marks 74**

Note: The candidate are required to attempt two questions each from section A and B carrying 11 marks each and entire section C consisting of 10 short answer type questions carrying 2 marks each.

Section A

1. Give an account of safety regulations and their importance in food microbiology laboratory.
2. Explain various parameters for hygienic production of food
3. Explain morphology and the structure of bacterial cell.
4. Give applications of compound microscope.

Section B

5. Describe bacterial growth curve
6. Explain various factors affecting bacterial growth
7. What are the changes caused by microorganisms in food.
8. Define pure culture and explain various methods of pure culture techniques.

Section C

9. Write short note on:
   - I.   Define Food Microbiology
   - II.   Food Poisoning
   - III. Draw bacterial growth curve and enlist the different stages
   - IV.   Capsid
   - V.   Water activity
   - VI.   Flagella and pili
   - VII. Enlist any five food spoilage bacteria
   - VIII. Psychrophiles
   - IX.   Thermophilles
   - X.   Microscope
   - XI.   Yeast
   - XII. Serial dilution
   - XIII. Autoclave
   - XIV. Streak plate
   - XV.   Laminar air flow

Roll no………..   Total no of Pages…..

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Sector Skill: Production Manager
Semester VI
MST- May 2022

</div>

Time allowed: 1Hour   **Maximum Marks 105**

Instructions:- All Questions are compulsory

Section-A Each question is of 3.5 Marks

1.	What are the abilities the production manager must have?		
A	read and write	B	communication and plan
C	organize and prioritize	D	all

2.	The organization goals are achieved by way of clear communication on		
A	Policies	B	goals
C	Sales	D	

3.	The production manager should encourage employees to take responsibilities and decisions		
A	in all matters	B	within boundaries allowed

4.	The production plan or budget is prepared based on------- forecast		
A	Finance	B	sales
C	Purchase	D	

5.	Sales forecasting is the process of estimating ------ sales.		
A	Current	B	past
C	Future	D	all

6.	The------------------ is a project plan of how the production budget will be spent over a given timescale of a business.		
A	production schedule	B	sales budget

7.	Scheduling is used to allocate plant and machinery resources, plan		
A	human resources	B	production processes
C	purchase materials	D	all

8.	The production process and resources are adjusted in such a way to ------------- without affecting the quality and quantity.		
A	maximise cost	B	minimise cost

9.	FSSAI has been mandated to perform various functions related to---------		
A	quality	B	standards
C	Both	D	

10.	Quality management plays a vital role within the food industry in different stages of		
A	Sourcing	B	processing
C	Packaging	D	all

Section-B Each question is of 7 Marks .

1.	Reviewing production report and other performance of production will lead to		
A	improvement in oppurtunities	B	more profit
C	Both	D	

2.	Production plan is very effective when there is proper utilization of		
A	Equipments	B	manpower
C	Both	D	

3.	The production manager should think and analyse the ways of---------------- expenditure to manage within budget.		
A	Increase	B	reduce
C		D	

4.	what are the recycling energy?		
A	Water	B	steam
C	Heat	D	all

5.	Documentation helps to build up a detailed picture of what a manufacturing function has done		
A	in the past	B	at present
C	Both	D	

Section- C Each question is of 5 Marks.

1.	What is GMP?		
A	good mal practice	B	good manufacturing practice
C	good monitoring practice	D	

2.	Effective documentation enhances the visibility of -------system		
A	quantity assurance	B	quality assurance
C		D	

3.	what are the types of hazards?		
A	Physical	B	chemical
C	Biological	D	all

4.	what is meant by safety and environmental management policies and procedures?		

A	generalcleaniness and hygiene	B	equipment maintenance
C	maintainingcleaniness and hygiene of premises and surroundings	D	all

5.	Food products can become----------- with biological physical chemical hazards		
A	contaminated	B	safety
C	None	D	

6.	Biological hazards in food processing occurdue to the presence of		
A	Virus	B	bacteria
C	None	D	

7.	Poor sanitation practices means		
A	inadequate cleaning and sanitizing the sites	B	poor pest management
C	Both	D	

Garment Production Management

B.Voc FT- 4ᵗʰ sem

MST-May 2022

Time allowed- 3 Hours   **Total Marks- 74**

Attempt five questions in all selecting two questions each from sections A and B carrying 11 marks each. Section C consisting of 10 short answer questions carrying 3 marks each.

SECTION = A

1. Write the types of production planning
2. What is plant layout? explain
3. Write about the industrial sewing machines and modern accessory of machines.
4. What is project planning? Write its types.

SECTION = B

5. What is quality control? Write its importance.
6. Write about finishing process in garment industry.
7. Write about work study in garment industry.
8. Which Tools used for quality control?

SECTION = C

9. All questions are compulsory.
    I.   Production section
    II.   Clothes inspection
    III.   Trimmings
    IV.   TQM
    V.   Balancing
    VI.   Definition of quality control
    VII.   Lock stitch a machine
    VIII.   Fishbone Diagram
    IX.   Any five principles of management
    X.   Capacity Planning

Garment Production Management

B.Voc. GD- 4th sem

MST- May 2022

Time allowed- 3 Hours   **Total Marks- 74**

Attempt five questions in all selecting two questions each from sections A and B carrying 11 marks each. Section C consisting of 10 short answer questions carrying 3 marks each.

SECTION = A

1. Write the types of production planning
2. What is plant layout? explain
3. Write about the industrial sewing machines and modern accessory of machines.
4. What is project planning? Write its types.

SECTION = B

5. What is quality control? Write its importance.
6. Write about finishing process in garment industry.
7. Write about work study in garment industry.
8. Which Tools used for quality control?

SECTION = C

9. All questions are compulsory.
   I.   Production section
   II.   Clothes inspection
   III.   Trimmings
   IV.   Production system
   V.   TQM
   VI.   Balancing
   VII.   Elastic foot
   VIII.   Definition of quality control
   IX.   Lock stitch a machine
   X.   Fishbone Diagram
   XI.   Over lock Machine
   XII.   Button Attaching Machine
   XIII.   Any five principles of management
   XIV.   Capacity Planning
   XV.   Plans on the basis of uses

FUNDAMENTALS OF WINDOWS AND
SERVER ADMINISTRATION–123
B.VOC(SD)-1(Semester–II)

[Time allowed : 3 Hours]   [Maximum Marks : 60]

Note : Attempt two questions each from Section A and B carrying 9 marks each. Section C is compulsory consisting of 12 short answer type questions carrying 2 marks each.

SECTION-A

Q:1 How we create a window form application? Explain by giving an example.9

Q:2 How we capture user input in Windows Form Application? 9

Q:3 What is Windows Services application? How is it different from Windows Form application? 9

Q:4 What are various methods available for deploying a windows application? 9

SECTION-B

Q:5 What are various types of networks? How they are different from each other?9

Q:6 Explain the step to install a Server on a machine. 9

Q:7 What is disk management tool?Why and how we use disk management tool? 9

Q:8 What is DNS? How we configure DNS client?

SECTION-C

9.Explain the following :

(a)What are events and how these events are handled?

(b) What are device drivers?

(c) What are data bound controls?

(d) Difference between a bus and a star topoloty?

(e) What do you mean by IP Address?

(f) What do you mean by System updates?

(g)Difference between a router and a gateway?

(h) What are the responsibilities of Network layer of OSI Model?

(i) How will you validate the user input?

(j) What are the different types of Twisted Pair Cables used in networking?

(k) What is a wireless network?

(l) What do you mean by Subnetting?   12*2=24

Class-M.SC.II (Sem IV)   **Subject-Algebraic Coding Theory**

Time-3.00 Hrs   **MM-70**

Note-Candidates are required to attempt all the questions.

Section –A

1. Let d is even then a binary (n,M,d) Code exists iff there exist a binary (n-1,M,d-1) Code.
2. Define Syndrome decoding. Construct a syndrome look up table for the perfect binary (7,4,3) Code which has generator matrix

$$G = \begin{bmatrix} 1 & 0 & 0 & 0 & 1 & 1 & 1 \\ 0 & 1 & 0 & 0 & 1 & 1 & 0 \\ 0 & 0 & 1 & 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 1 & 0 & 1 & 1 \end{bmatrix}$$

   Use your table to decode the following received vector 0000011, 1111111, 1100110, 1010101

3. (I) Define linear Code. Show that E_n, the Code of all even weight vectors of V(n,2) is linear.

   (ii) In binary linear Code, either all the Codewords have even weight or exactly half have even and half have odd weight.

4. Let C be (n, k) Code over GF(q). Then the dual Code is linear [n, n-k] Code.

Section –B

5. Construct a Stenier system (5,8,24) from extended Binary Golay Code G_{24}.
6. State and prove Gilbert Varshamov bound.
7. State and prove singleton bound.
8. Discuss about Plotkin bound.

Section-C

9. (a) Show that a q-ary (q+1,M,3) Code satisfy $M \leq q^{q-1}$.

   (b) Define ISBN Code and check whether 0-1392-4101-4 is an ISBN Code or not?

   (c) What is main coding theory problem?

   (d) Let C be binary linear Code and 4 divides w(x) for all x∈C then C is self orthogonal Code.

   (e) Define hamming Distance

   (f) Define Griesmer Bound.

   (g) Define linear Code.

   (h) Write dimension of hamming codes.

   (i) Define maximum likelihood decoding.

   (j) Define minimal polynomial.

Duration: 3 Hrs.   **Max. Marks. 70**

Attempt two questions each from Section A and Section B carrying 10 marks each and the entire section C consisting of 10 short answer type questions carrying 3 marks each.

Section-A

1. Given any ring R and S, a multiplicative closed subset of R containing 1. The mapping $f : R \to R_S$ be defined as $a \to \frac{a}{1}$ be a nutural map. Prove that for any ring homomorphism $g : R \to R'$ such that g(s) is a unit, there exists ring homomorphism $h : R_S \to R'$ such that $h \circ f = g$.

2. If M is any R-module and S is a multiplicative closed subset of R, then prove that $R_S \otimes M \equiv M_S$ as R_S-module.

3. Discuss the exactness property of tensor produccts.

4. If R is a flat module, then prove that R_S is also a flat module, where S is a multipliative closed subset of R.

Section-B

5. Prove that every every power of prime ideal need not to be a primary ideal.

6. State and prove first uniqueness theorem.

7. State and prove second uniqueness theorem.

8. Prove that intersection of p-primary ideals is again a p-primary ideal.

Section-C

9. Answer in short:
   (a) Define tensor product of modules.
   (b) Define the multiplicative closed subset of R.
   (c) Define flat module.
   (d) Define exteded ideal.
   (e) Prove that every ideal in R_S is an extended ideal.
   (f) Define primary ideal.
   (g) If I is primary ideal then prove that r(I) is a primary ideal.
   (h) Prove that primary idaal need not be prime.
   (i) Deine colon ideal with suitable example. (j) Define radical ideal. Give two examples of radical ideal.

Time Allowed: 3 hours	Maximum Marks	: 70
	Pass Marks	: 25

Note: -
(1) The candidates are required to attempt any two questions out of four from each Section A and
B. **Section C is compulsory.**
(2) Each question of Section A and B carries 10 marks and Section C carries 30 marks.

Sec-A

1) Consider the linear space of all n-tuples x=(x_1, x_2, x_3,…… x_n) of scalars and define the norm by $\|x\|_\infty = \max\{|x_1|, |x_2|, ……|x_n|\}$. Show that l_∞^n is Banach space under this norm.

2) Consider the linear space of all n-tuples x=(x_1, x_2, x_3,…… x_n) of scalars and define the norm by $\|x\| = \sup\{|x_n|\}$. Show that l_∞ is Banach space under this norm.

3) Let N be a normed linear space. Prove that N is Banach space iff $\{x : \|x\| = 1\}$ is complete.

4) State and prove Riesz Fischer theorem.

Sec-B

5) State and prove Uniform boundedness theorem.

6) State and Prove Open mapping theorem.

7) State and prove Hahn Banach theorem.

8) State and prove closed graph theorem.

Sec-C

1) Define normed linear space.

2) Define Banach space. Is it inner product space normed linear space?

3) Give an example of normed linear space which is not Banach space.

4) State and prove Parallelogram Law.

5) Define conjugate space & Reflexive space.

6) State Uniform boundedness principle.

7) State and Prove Pathagorian theorem.

8) Define projection.

9) State open mapping theorem.

10) State closed graph theorem.

American Literature

MST-May 2022

M.M. 75   **Pass Percentage: 35%**

Time Allowed: 3 hours

UNIT-1

Attempt any two questions from unit 1:

Q.1 Examine the major themes of the play "Desire Under the Elms".

Q.2 Write critical appreciation of the Robert Frost's poem "Home Burial".

Q.3 Discuss chief characteristics of Robert Frost as an American poet.   11+11= 22

UNIT-2

Attempt any two questions for unit 2:

Q.4 Is the title "A Street Car Named Desire" appropriate?

Q.5 Discuss in detail the major discrimination faced by African-American in America as discussed by Ta-Nahishi Coates in "Between the World and Me".

Q.5 Discuss in detail the major themes of the poetry of Maya Angelou.   11+11= 22

UNIT-3

Attempt all question from part A and Part B

Part A

a) What is the role of Maw in "Desire Under the Elms"?   4
b) Do you agree with ending of the play "A Street Car Named Desire".   3
c) What is theme of the poem "My Guilt"?   3
d) What is theme of the poem "Fire and Ice".   3

Part B

e) What is American Literature ?
f) What are the major themes of American literature during the colonial period?
g) What are the chief characteristics of Revolution Period of American Literature (1760-1800)?
h) What are the salient features of American Literature of The Civil War period?
i) Explain American Dream.
j) What are the major themes of contemporary American Literature?   6*3= 18

M. A. English (2) CORE COURSE- XIII

LITERRAY AND CULTURAL THEORY

M.M. 75   **Pass Percentage:35%**

Time Allowed: 3 hours

UNIT-1

Attempt any two questions from unit 1:

Q.1 What are the advantages and disadvantages of assuming, as Barthes does, that "a text's unity lies not only in its origin but in its destination"?

Q.2 "Every human society has its own shape, its own culture, purposes, its own meanings, every human society expresses these, in institutions and in arts and learning". Discuss in detail.

Q.3 What are the three theories of representation? What are the strategies and weaknesses of each theory?   11+11= 22

UNIT-2

Attempt any two questions for unit 2:

Q.4 What is Jameson's main thesis in his essay "Postmodernism or the Cultural Logic of Late Capitalism"?

Q.5 Discuss how Jameson's analysis of postmodernism stems from his Neo-Marxist understanding of the relationship between a society's culture and its economic base?

Q.6 Discuss the content in the book "The Invention of Tradition" by Eric Hobsbawm.   11+11= 22

UNIT-3

Attempt all question from part A and Part B

Part A

a) Schizophrenia and paranoia as understood by Jameson.   4
b) Writerly Text.   3
c) What do you mean by "The Work of Representation"?   3
d) Why Raymond Williams says culture is ordinary?   3

Part B

e) What is Cultural Theory?
f) What do you mean by popular and mass culture?
g) What are the major methods of cultural studies for analysis of literature?
h) What is identity in Cultural Studies?
i) Explain Late Capitalism.
j) What are the major areas of discussion in Cultural Studies?   6*3= 18

M. A. English (1) COURSE -V

Literary Criticism

MST-May 2022

M.M. 75   **Pass Percentage:35%**

Time Allowed: 3 hours

UNIT-1

Attempt any two questions from unit 1:

Q.1 Examine the merits and demerits of William Shakespeare as discussed by Samuel Johnson in "Preface to Shakespeare".

Q.2 Explain in detail William Shakespeare's theory of poetry as explained in "Preface to Lyrical Ballads".

Q.3 Explain in detail touchstone method and the role of criticism in literature as discussed by Matthew Arnold in "The Function of Criticism at the Present Time".   11+11= 22

UNIT-2

Attempt any two questions for unit 2:

Q.4 How does Eliot differentiates between Tradition and Individual talent in essay "Tradition and the Individual Talent"? Write in detail the characteristics of a critic as discussed by T. S. Eliot.

Q.5 Explain in detail the ideas Immanuel Kant for Enlightenment.

Q.5 Explain Riti, Dhvani, Vokrokti and Guna/Dosa as discussed by Kapil Kapoor in "Brief Introduction to Major Literary Theories".   11+11= 22

UNIT-3

Attempt all question from part A and Part B

Part A

    a) How does Johnson take defence of tragic-comedies of Shakespeare?   4
    b) Explain Wordsworth's theory of Meter.   3
    c) What do you mean by Objective Corelative as explained by Eliot?   3
    d) What is the main reason behind the nonage of human beings as discussed by Kant? 3

Part B

    e) What is Literary Criticism?
    f) What is the importance of literary criticism in literature?
    g) What are the chief qualifications of a literary critic?
    h) What is judicious criticism?
    i) Explain the importance of objectivity in literary criticism?
    j) What isevaluative criticism?   6*3= 18

Guru Nanak College, Budhlada

MST- May, 2022

Subject: Differential Equations   **Class: M.Sc.-I**

Time: 3 hrs.   **Maximum Marks: 70**

Note: Attempt two questions each from Section A and B carrying 10 marks each. Section C consisting of 10 short questions carrying 3 marks each is compulsory.

Section – A

1. State and prove Abel-Liouville Formula.
2. State and prove Strum's Fundamental Comparison theorem.
3. Find the unique solution ϕ of the non-homogenous differential equation

$$\frac{dx}{dt} = \begin{pmatrix} 6 & -3 \\ 2 & 1 \end{pmatrix} x + \begin{pmatrix} e^{5t} \\ 4 \end{pmatrix}, \text{ that satisfies the initial condition } \phi(0) = \begin{pmatrix} 9 \\ 4 \end{pmatrix}.$$

4. Let ϕ_0 be any solution nonhomogeneous differential equation $\dfrac{dx}{dt} = A(t)x + F(t)$, let

   $\phi_1, \phi_2, \phi_3, ..., \phi_n$ be a fundamental set of solutions of the corresponding homogeneous

   differential equation $\dfrac{dx}{dt} = A(t)x$, let $c_1, c_2, ..., c_n$ be n numbers, then $\phi_0 + \sum\limits_{k=1}^{n} c_k \phi_k$ is

   also solution of nonhomogeneous differential equation.

Section – B

5. Let ϕ be a fundamental matrix of a homogeneous linear vector differential equation and let ϕ be an arbitrary solution on the real interval [a,b]. Then $\ni$ a constant vector

$$c = \begin{pmatrix} c_1 \\ c_2 \\ \vdots \\ c_n \end{pmatrix} \text{ such that } \phi = \Phi \text{ on [a,b].}$$

6. Find the characteristic values and characteristic functions of following Strum-Liouville problem

$$\frac{d^2 y}{dx^2} + \lambda y = 0, \ y(0) = 0, \ y'(\pi) = 0.$$

7. Let f be a non-trivial solution of the nth order homogenous differential equation. Using transformation x=f(t)v reduce order of equation to n-1.

8. State and probe Strum separation theorem.

Section – C

1. Show that $\Phi(t) = \begin{pmatrix} e^t & e^{3t} & 0 \\ e^t & e^{3t} & e^{-2t} \\ 3e^t & 2e^{3t} & e^{-2t} \end{pmatrix}$ is a fundamental matrix of the linear system

$$\frac{dx}{dt} = \begin{pmatrix} 5 & 2 & -2 \\ 7 & 0 & -2 \\ 11 & 1 & -3 \end{pmatrix} x.$$

2. Find the unique normalized homogeneous linear differential equation of order 3 whose fundamental set on some interval $a \le t \le b$ is given as $e^t, t^2, t^2 e^t$.

3. State and prove Abel's Formula.

4. Transform $(t^4 + t^2)\dfrac{d^2 x}{dt^2} + 2t^3 \dfrac{dx}{dt} + 3x = 0$ into an equivalent self-adjoint equation.

5. A linear combination of m solutions of the homogeneous differential equation is also a solution of the homogeneous differential equation.

6. State Lipschitz condition. Hence, check whether the function $f(x, y) = xy^2$ satisfies Lipschitz condition.

7. If the n vector $\phi_i (1 \le t \le n)$, be n solutions of the linear homogeneous vector differential equation, then prove that their Wronskian is either zero for all t or never zero on the entire interval.

8. Show that $\sin(t^3)$ and $\cos(t^3)$ is fundamental set of $t\dfrac{d^2 x}{dt^2} - 2\dfrac{dx}{dt} + 9t^5 x = 0$ on [a,b].

9. Reduce $\phi_n = c_n \sin nx$ to orthonormal characteristic function.

10. Define orthogonality of functions and give example.

Guru Nanak College, Budhlada

MST- May, 2022

Subject: Operation Research   **Class: M. Sc.-II**

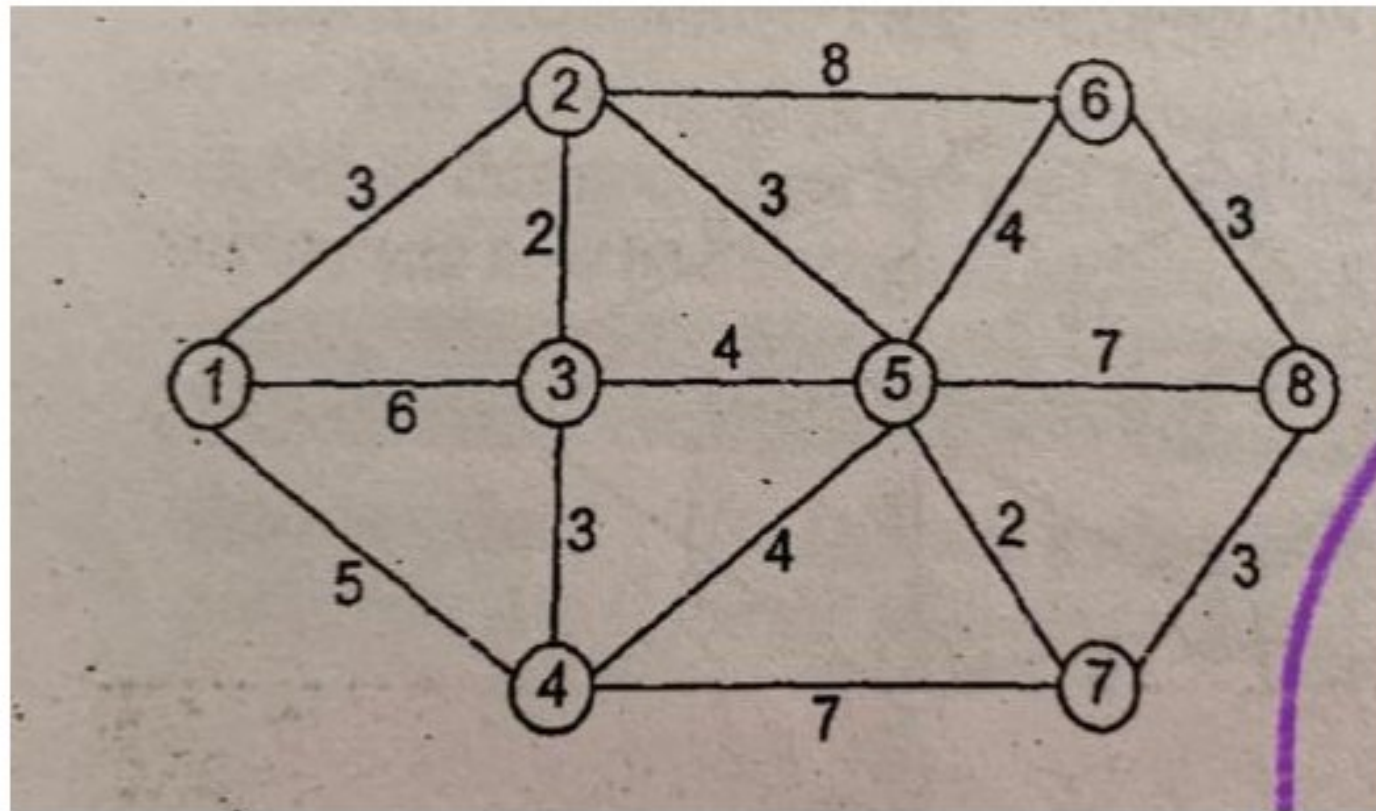**Time: 3 hrs.**   **Maximum Marks: 70**

Note: Attempt two questions each from Section A and B carrying 10 marks each. Section C consisting of 10 short questions carrying 3 marks each is compulsory.

Section – A

1. The distance (in miles) between different stations is shown on each link. Determine the shortest route from station 1 to station 8.

2. Find the minimum spanning tree in the following undirected graph

Arc	(1,2)	(1,3)	(1,4)	(2,3)	(2,8)	(2,10)	(3,4)	(3,8)	(4,5)	(4,6)
Length	7	4	8	3	9	14	4	10	15	12
Arc	(4,8)	(5,6)	(5,7)	(6,7)	(6,8)	(6,9)	(7,9)	(8,9)	(8,10)	(9,10)
Length	10	4	1	2	20	16	18	3	4	6

3. A project has the following time schedule:

Activity	Time in months	Activity	Time in months
1-2	2	4-6	3
1-3	2	5-8	1
1-4	1	6-9	5
2-5	4	7-8	4
3-6	8	8-9	3
3-7	5		

Construct PERT network and compute

(i) Total float for each activity.

(ii) Critical path and its direction.

Determine the following:

(i) Expected task time and their variance,

(ii) The earliest and latest expected times to reach each node,

(iii) The critical path,

(iv) The probability of node occurring at the proposed completion date if the original contract time of completing the project is 41.5 weeks.

4. (a) One should group replace at the end of period if the cost of individual replacement of tth period is greater than avg. cost per period through the end of the tth period.

(b) One should not group replace at the end of period if the cost of individual replacement at the end of $(t-1)^{th}$ period is less than avg. cost per period through the end of the tth period.

Section-B

5. A project is represented by the network shown below and has the following data:

Task	A	B	C	D	E	F	G	H	I
Least time	5	18	26	16	15	6	7	7	3
Greatest time	10	22	40	20	25	12	12	9	5
Most likely time	8	20	33	18	20	9	10	8	4
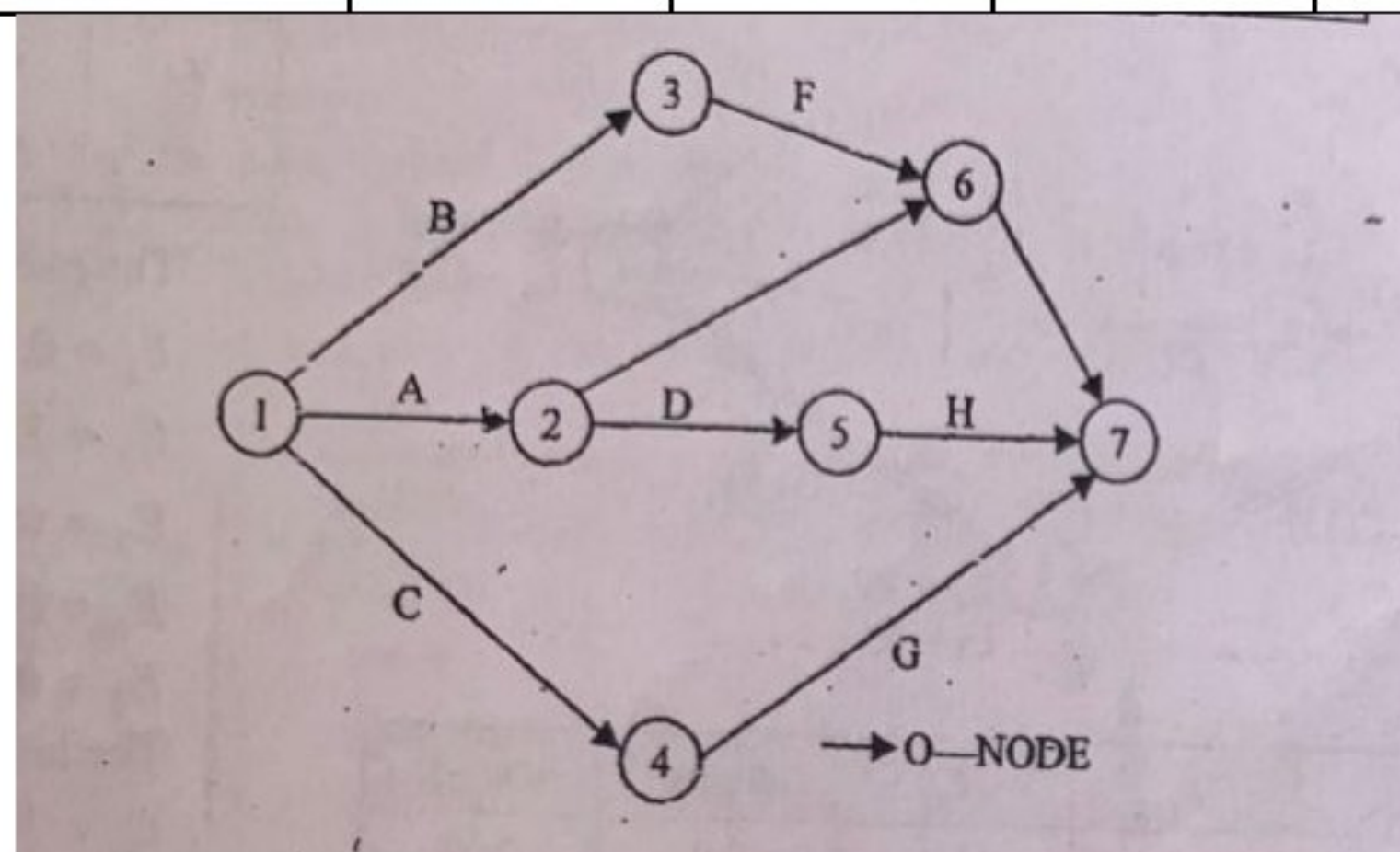
6. Let the value of money be assumed to 10% per year and suppose that machine A is replaced after every 3 years whereas machine B is replaced after every 6 years. The yearly cost of both the machines is given below:

Year	1	2	3	4	5	6
Machine A	1000	200	400	1000	200	400
Machine B	1700	100	200	300	400	500

Determine which machine should be purchased.

7. A machine owner finds from his past records that the cost per year of maintaining a machine whose purchase price is Rs. 6000 are as given below:

| Year	1	2	3	4	5	6	7	8
Maintenance Cost (Rs.)	1000	1200	1400	1800	2300	2800	3400	4000
Resale price	3000	1500	750	375	200	200	200	200

Determine at what age a replacement is due?

8. State and prove Mortality theorem.

Section - C

1. Distinguish between CPM and PERT.
2. Define critical path, free float and total float.
3. Distinguish between minimal spanning tree algorithm and Dijkastra's algorithm.
4. What is replacement problem?
5. Define direct cost, normal cost and crash cost.
6. Draw a network, given the following precedence relationship

Event	A	B,C	D	E	F	G
Proceed by	-	A	B,C	C	D,E	E,F

7. Find a directed path from node 1 to 6, three directed cycles and three undirected paths.
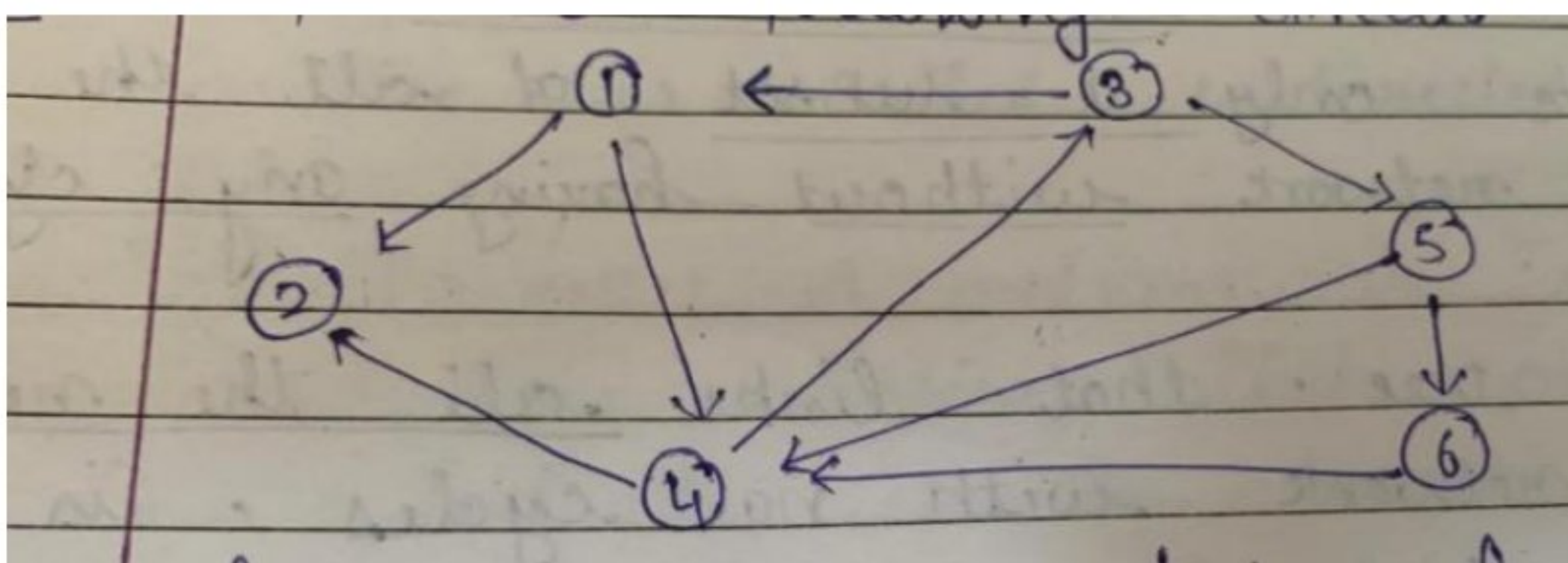
8. Define looping and dangling.
9. Find critical activities of the following network
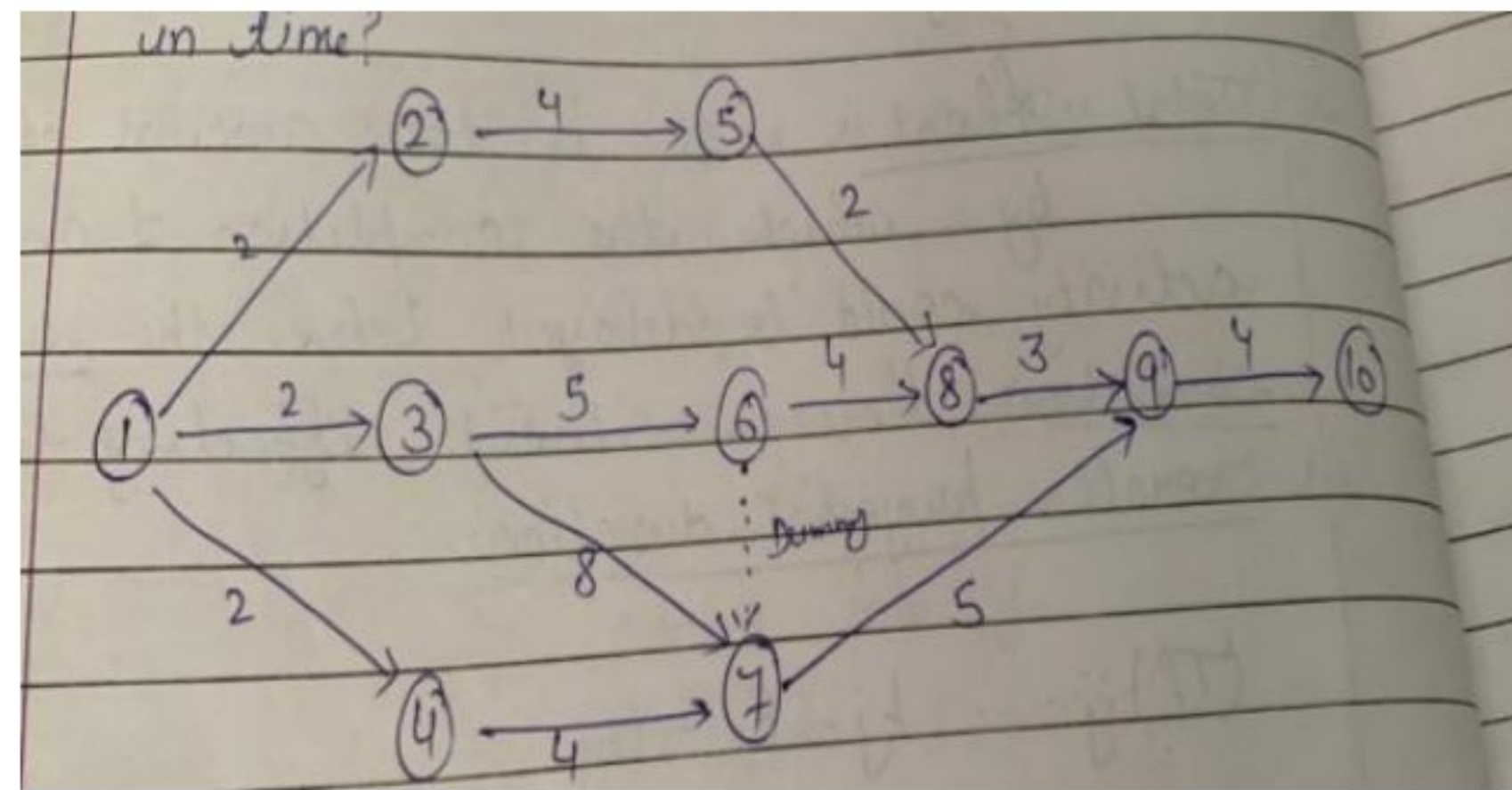
10. Define present worth factor and discount rate.

Guru Nanak College, Budhlada

MST-May 2022

Class: M.A I   **Subject: Liberal Political Theory**

Time: 3 Hrs   **M.M: 70**

Note: Attempt any two questions from both Sections A and B and Section C is compulsory.

Section – A

1. What is Liberalism? Write the main features of classical liberalism?
2. What is the difference between socialist liberalism and neo- liberalism?
3. Explain Social contract of John Locke?
4. Critically analyze Rousseau concept of General Will?

Section – B

5. Write the contribution of Montesquieu to the Political Thought?
6. Critically Explain Jeremy Bentham views on Utility?
7. Analyze J.S Mill views on Liberty?
8. Write the Contribution of T.H Green on Rights?

Section - C

1. Define Liberalism
2. Locke views on State
3. Four supporters of Neo-Liberalism
4. Laissez –faire
5. Locke views on Natural Rights
6. Locke as Individualist
7. Kinds of Law according to Montesquieu
8. Montesquieu view on Slavery
9. Life sketch of Rousseau
10. Human Nature according to Rousseau
11. Felicific Calculus
12. Books written by J.S Mill
13. Green views on War
14. Green views on Crime

Time Allowed: 3hrs
Max Marks: 75
Note:- Attempt any two questions each from unit I and II, Unit III is compulsory

Unit I   (11+11=22)

I. How is "The Rape of the Lock" a work of social Satire?

II. Give in detail the critical appreciation of William Blake's poetry 'Tyger' assessing all the poetic trends of the writer.

III. Give a critical account of the supernatural element in 'The Rime of the Ancient Mariner'.

Unit II   (11+11=22)

I. Attempt a critical appreciation of 'Ode on a Grecian Urn'. Give the fundamental elements of Keats poetry in detail?

II. Bring out the various aspects of Robert Browning's poetry referring the poetry prescribed?

III. Write a note on the technical features of any two poems of Christina Rossetti?

Part A

i. What does the toilet scene symbolize.   (4)

ii. What is the message of Kubla Khan.   (3)

iii. Describe Pope's epic machinery critically.   (3)

iv. Theme of John Keat's 'Ode to Psyche'.   (3)

Part B   (3x6=18)

v. Describe the three main features of romantic poetry.

vi. Explain the form Dramatic Monologue with specific example.

vii. What are the elemental features of Victorian poetry.

viii. Describe the characteristics of the Neo-Classical school of poetry.

ix. The religious spirit in the poetry of Christina Rossetti.

x. Write a note on Pre-Raphaelite

Class: M.A II   **Subject: Research Methodology**

Time: 3 Hrs   **M.M: 70**

Note: Attempt any two questions from both Sections A and B and Section C is compulsory.

Section –A

1. Examine the relevance of Research in Social Science?
2. Write the various Types of Social science Research?
3. What are various Ethics in Social science Research?
4. Discuss the types and characteristics of Social science Research?

Section – B

1. Discuss various steps of research Design in Social science Research?
2. What do you understand by sampling? Discuss various types of Sampling?
3. Examine the importance of Interview in Data Collection.
4. Explain various features of Thesis writing in Political Science?

Section - C

1. Define Social Research
2. Two aim of Social Research
3. Write the method used in Social Science research
4. Importance of Hypothesis
5. Write two Advantages of Sampling
6. Characteristics of Observation method
7. Participant observation
8. Group Observation
9. Characteristics of Good Questionnaire
10. Types of Questionnaire
11. Limitation of Questionnaire
12. Define Research Design
13. Advantages of Research Design
14. Two main feature of Report writing

Time: 3 hours   **MM: 50**

MCA-1st (2nd SEMESTER)

MCAM 1205E5 SOFTWARE PROJECT MANAGEMENT

NOTE: Attempt any two Question each from section A and B and attempt All Questions from Section C.

Section A

Q1. Explain the concept of Software Project Lifecycle.   10

Q2. What is Software? Write the difference between Software and Programme.   10

Q3 .Explain the concept of COCOMO Model.   10

Q4. What is Project which activities are covered by Software Project Manager. 10

Section B

Q5. What is the role of Team in Software Project Manager.   10

Q6. What is Risk? Why it is important for Risk Management Cycle.   10

Q7. Write the Concept Quality Control.   10

Q8. Expalin the concept Waterfall Model.   10

Section C

Q9. Write the short note on following

  a. Feedback

  b. PERT CHART

  c. Software Project Management

  d. Risk Mitigation

  e. software project management document   2x5=10

Guru Nanak College,Budhlada

Department: Commerce and Management   Date: .05.2022
Subject: International Finance   Session: 2021-2022
 Class : M.Com 2ⁿᵈ Year
Teacher Name: Dr. Neena Brar
Max. Time Allowed : 3 hrs.   **Max. Marks: 70**
_____

Section – A

Attempt any ten: **10*3=30**

Q1. Write a note on Mint Parity found in Gold Standard.
Q2. Direct Quote *Vs.* Indirect Quote.
Q3. Give the objectives of WTO?
Q4.What is Globalisation. Explain its'salient features.
Q5. Draw a demarcation between Balance of Trade and Balance of Payment.
Q6. Write a note on FDI and FII.
Q7. Call Option Vs. Put Option.
Q8. Explain the Concept of ADRs and GDRs.
Q9. Give the difference between Futures and Options.
Q10. Money Market Hedge.
Q11. What is Multinational Working Capital Management.
Q12. Factoring

Section -B
Attempt any two out of four given below: **2*10=20**

Q11. Finance Manager plays an indispensable role in MNC's? Explain. Or
Q12. What is International Monetary System? Explain the various systems emerged in IMS.
Or
Q13. What do you understand by BOP? Explain the various components of BOP?   Or
Q14. Write a note on the following Trade Blocs:
   a) NAFTA
   b) SAARC.

Section -C
Attempt any two out of four given below: **2*10=20**

Q15. Discuss the various theories of determination of exchange rate.
 Or
Q16. What is FOREX Market? Explain the structure and functions of Foreign Exchange Market.
Or
Q17. Define Foreign Exchange Exposure. What are the various types of foreign exchange exposures? Comment on the type of exposure which do you think is easy to manage.
Or
Q18. Write a detailed note on Multinational Receivable Management.

Time: 3 hours   **MM: 70**

MSC-1ˢᵗ (2nd SEMESTER) MS-123 Visual Basic

NOTE: Attempt any two Questions each from section A and B and attempt All Questions from Section C.

Section A

Q1. Explain the concept of Basic Active X Controls with its properties and Example. 15

Q2. How many types of Common Dialog box are there in VB? Describe each with suitable example?   15

Q3 .What is Menu Editor? Explain with Example?.   15

Q4. Explain the concept of Form with its properties, methods? Example.   15

Section B

Q5. Explain the concept of MDI Form with suitable example?   15

Q6. Write the procedure to create a form and use a data control on it, to connect any MS Access database.   15

Q7. Write the Concept of Web browsing Object and History object.   15

Q8. Draw line, circle, point using vector graphics   15

Section E

Q9. Write the short note on following

- Explain about Picture Box Control.

- List any two Relational operators.

- List main properties of Label Control.

- What is Combo Box.

- What is shape control   2x5=10

Data and File Structures
M.Sc IT-I + LE
SEMESTER-II

MAX MARKS: 70   **TIME: 3HOURS**

Note: Attempt two questions from Section A and two questions from Section B. Section C is compulsory.

Section A

I. Explain Array. Define types of Array. How 2D array is represented in memory.

II. What is Stack? Define operations on stack.Write an algorithm to insert and delete elements in stack.

III. What do you mean by Linked List? What operations we can perform on Linked list. Explain insertion in linked list.

IV. Define Queue.Explain types of queues in detail   10.5*2=21

Section B

V. What do you mean by Graph? How we can represent graph in memory? Explain Adjacency matrix representation.

VI. Explain Quick Sort with the help of example.

VII.What is File organization? Explain Sequential file organization in detail giving it's merits and demerits.

VIII.Define Hashing. Explain various Hashing techniques.   10.5*2=21

Section C

XI. Attempt all questions

(a)What do you mean by Time Space trade off.

(b) Differentiate between Tree and Graph

(c) Differentiate between Stack and Queue.

(d) Define Types of File organization

(e) What is Complexity and it's types.

(f) Define Binary tree,binary search tree with example.

(g) What are types of sorting. Explain any one .   7*4=28

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<div align="center">

M.Sc. Physics I
Paper- Mathematical Methods of Physcis

</div>

Duration: 3 Hrs. **Max. Marks. 60**

Attempt two questions each from section A and section B and entire section C. Each question of section A and B carry 10 marks and section C carries 20 marks.

<div align="center">

Section-A

</div>

1. Find the Fourier series of the following function:
$$f(x) = \begin{cases} 0 & \text{when } -\pi \le n \le 0 \\ k & \text{when } 0 \le n \le \pi \end{cases}$$
(10)

2. Find the finite Fourier sine and cosine transforms of the function $f(x) = x^2; \ 0 < x < 4$ (10)

3. Define group, subgroup and class. Show that there are classes in the group of symmetry operations of the equilateral triangle. (10)

4. State and prove Convolution theorem. (10)

<div align="center">

Section-B

</div>

5. Give the Fourier series solution for motion of the vibrating string. (10)

6. Dervie the equation for vibrating string in one dimension. (10)

7. Find the inverse Laplace transform of $\frac{1}{(s+1)(s^2+1)}$ (10)

8. Solve $y_{xx} - 2y_x + 2y = 0; \ y_0 = y_1 = 1$ using Lapace transformation method. (10)

<div align="center">

Section-C

</div>

9. Answer in short:
   (i) Describe Dirichlet conditions for existence of Fourier Series. (3)
   (ii) What is the necessary condtion for existence of Laplace Transform. (2)
   (iii) State Parseval's identity for Fourier Series. (2)
   (iv) What do you mean by Partial Diff. Equation. Explain the order and degree of PDE by suitable examples. (4)
   (v) Solve: $2xu_x - 3yu_y = 0$ by variable separable method. (4)
   (vi) What are the basic assumptions required to study heat equation. (5)