MAR GREGORIOS COLLEGE OF ARTS & SCIENCE
QUESTION BANK (UNIVERSITY PATTERN)

SUBJECT NAME: VISUAL PROGRAMMING
CLASS: III BCA

2 MARK QUESTIONS

UNIT I

1. List out the steps to be followed in starting up a new project
2. List out some common Form properties
3. What are the three options available in altering a form?
4. List out some common properties in Properties Window
5. List out tools available in Tool Box
6. Create a simple Visual Basic application to perform arithmetic option
7. Differentiate Caption & Name property
8. Differentiate Locking and Deleting a control
9. What is Access Keys?
10. List out the properties of Image Control
11. Define Typos
12. What is the use of CLS keyword?
13. List out the step to be followed in saving a project
14. What is Grid Control?
15. Define Variable and how to declare it
16. List out all Data Types available in VB
17. List out the Scale properties available in VB

UNIT II

1. List out all Font properties applicable for form
2. Write how to display table in the form
3. What is Picture Box and write its uses?
4. List out some Date and Time functions
5. List out some Financial functions
6. Define Function
7. Define Procedures
8. Define Sub Programs
9. What is nested if and write its syntax?
10. Write syntax for Goto statement and Select case

UNIT III

1. Define Arrays and list its types
2. Define Dynamic array and Static array
3. Write the use of Erase, Lbound, Ubound statements
4. What is Record?
5. Define Control arrays
6. Write the use of Width, Load, Unload statements
7. List out the properties of List Box
8. List out the properties of Combo Box
9. Write the syntax for Adding and Removing element in to the List and Combo box
10. Write down the general properties of Flex Grid control
11. Write down the Cell properties of Flex Grid control
12. How to Startup a Form and how to execute more than one form at a time?
13. Write the use of set and getfocus
14. How to set Modality for a form?
15. What is the use of Do and submain keyword?
16. What is Idle time?
17. Define Error Trapping
18. Difference between Resume and Resume Next statements
19. Write the syntax and explanation of On Error Goto statement
20. Difference between Err and Erl function

21.How to disable the given Error statement?
22.How to Clear an error and Raise up an error?

UNIT IV

1. Define Object Browser
2. List out the different Project elements in Object Browser
3. Write the syntax to create Object in VB
4. What is the use of Common Dialog Box
5. Write down the methods available in Dialog Box
6. Write the syntax to create Dialog Box
7. List out all Microsoft common controls and Define it
8. What is Menu and write the steps involved to create menu?
9. What is the use of Menu Editor?
10. Explain MDI and write its uses
11. Define Testing
12. Define Debugging
13. What is Stub Programming?
14. Define Bugs and list its types
15. Define Grammatical and Logical bugs
16. Define Immediate, Local and Watch window
17. List out the Debugging Tools available in VB
18. What is Quick Watch and Variable Watch?
19. List out Watch items available in VB
20. What is Watch Point?
21. Write about Auto Redraw property and Refresh method
22. How to save pictures and write its syntax?
23. List out Scale Modes available in graphics
24. List out Shape controls available in graphics
25. List out four ways to fill colors into objects
26. What is Pixel Control and Point Method?
27. Write about Draw Width and Draw Style properties
28. Write syntax to draw Circle and Ellipse

UNIT V

1. List out all Mouse Event Procedures
2. List out all Mouse Buttons & define it
3. What is POP - UP menu?
4. Write Mouse Mode Event
5. What is Manual Dragging?
6. Write the use of SetAttr and GetAttr functions
7. What is Sequential & Random access in files?
8. Define Binary files
9. What is the use of Seek and Put command?
10. Define Pattern & Path
11. List out the properties of Drive Object
12. What is COM/OLE?
13. Define DLL servers
14. List container control methods
15. What is OLE Drag and Drop option?

5 MARK QUESTIONS

UNIT I

1. Write short notes on Scale & Color properties
2. Write about Name property & Access keys
3. Explain Visual Basic data types in detail
4. What is Text Box and list its properties?
5. Explain Label and list its properties
6. Explain Command Button and list all its properties

7. Explain about Grid Control and Message Box
8. Explain the step to be followed in printing and saving the visual basic project

UNIT II

1. List all String Functions with syntax & example
2. Give the structure of a Visual Basic program.
3. List all Numeric Functions with example
4. Write short note on Rich Text Box and list its properties
5. Explain about Print Object with its properties

UNIT III

1. Write short note on List
2. Write about Record with suitable example
3. Explain Array with its types
4. Explain Do Events and Sub Main
5. Explain Grid Control with properties
6. Explain the concept of Error trapping
7. Describe how to add elements in the Control Arrays

UNIT IV

1. Explain Dialog Boxes with its properties
2. Explain how to create Menus in Visual Basic project
3. Explain about MDI Forms and state its uses
4. How to draw various Shapes using Graphics in Visual Basic?

UNIT V

1. Explain about File Objects
2. Explain about File Commands
3. How to create OLE Objects?
4. Write about OLE Container Control methods
5. Write short note on OLE Automation
6. Write short note on DLL properties

10 MARK QUESTIONS

UNIT I

1. Explain about Tool Box in detail
2. Explain briefly about Visual Basic Editing Tools
3. Explain about Properties Window
4. Explain how to create Controls & how to set its properties

UNIT II

1. Explain Determinant and Indeterminant Loops with example
2. Explain Decision Making statements with example
3. Explain Function and Procedures in detail
4. Design a program to develop student marklist using Control Structures.
5. Write a program in VB to calculate the value of functions of a given integer using Recursion.

UNIT III

1. Explain Sorting and Searching techniques and list its types with suitable example
2. Explain Project with Multiple Forms with suitable example
3. Explain about List Box and Combo Box with its properties in detail

UNIT IV

1. Explain Visual Basic Objects in detail
2. Explain Testing and Debugging Tools with suitable example
3. Explain Common Controls in Visual Basic with suitable example

UNIT V

1. Explain Mouse Activities in detail
2. Explain File Handling System in Visual Basic with example?
3. Explain about COM/OLE with example
4. Explain OLE Drag and Drop options in detail

MAR GREGORIOS COLLEGE OF ARTS AND SCIENCE

QUESTION BANK

STATICS

CLASS: II MATHS **SUBJECT CODE: TAM4B**

UNIT – I

TWO MARKS

1. Define force.
2. Define momentum or linear momentum.
3. State Lami's theorem.
4. Define friction.
5. State (λ, μ) theorem.
6. Define Tension.
7. Define statical friction.
8. Define limiting force friction.
9. Define coefficient of friction.
10. Define cone friction.
11. Define resultant force.
12. State parallelogram law of force.
13. Define dynamical friction.
14. Define equilibrium of forces.
15. Define angle of friction.
16. If S is the circumcentre of a triangle ABC, show that the resultant of the forces $\overline{SA}, \overline{SB}$ and $\overline{SC}$ acting at a S is $\overline{SH}$, where H is the orthocentre.
17. Force P and Q acting at a point have a resultant R. when the first force is double, the new resultant bisects the angle between the former resultant and P. show that $|P| = |R|$.
18. Define equilibrium of a particle.
19. Define Reaction.
20. State the converse of triangle law of forces.
21. State Hooke's Law.
22. Define Triangle law of force.
23. State the necessary and sufficient condition for a system of forces to keep a particle in equilibrium.
24. Two forces F_1 and F_2 act a point A. P is a moving point such that the moment of F_1 and F_2 about P are equal. Find the locus of P.

25. If the resultant of two forces acting at a point with magnitudes 7 and 8 is a force with magnitude 13, find the angle between the two given forces.

FIVE MARKS

26. State and prove the Parallelogram law of forces.
27. Three forces act along the bisectors of angles A, B, C of a triangle ABC. S.T if the forces are in equilibrium then their magnitudes are in the ratio $\cos\left(\frac{A}{2}\right) : \cos\left(\frac{B}{2}\right) : \cos\left(\frac{C}{2}\right)$.
28. State and prove Lami's theorem.
29. The resultant of two forces P and Q is R. if one of the forces is reversed in direction, the resultant become's R'. $R^2 + R'^2 = 2(P^2 + Q^2)$.
30. State Law of friction.
31. State and prove Lami's theorem.
32. OA, OB, OC are the lines of action of two forces P and Q and their resultant R respectively. Any transversal meets the lines in L, M and N respectively, Prove that $\frac{P}{OL} + \frac{Q}{OM} = \frac{R}{ON}$

TEN MARKS

33. If forces of magnitude P,Q,R act at a point parallel to sides CB, CA, AB of A triangle respectively, prove that the magnitude of their resultant $(P^2 + Q^2 + R^2 - 2QR\cos A - 2RP\cos B - 2PQ\cos C)^{1/2}$.
34. Suppose a particle of mass m is placed on a rough inclined plane inclined at an angle α to the horizontal and a force of magnitude S acts on it in a direction making an angle θ with the plane.if the equilibrium is limiting, to find S.
35. Suppose a particle of weight W lying on a rough inclined plane inclined at an angle α to the horizontal is subjected to a force P along the plane in the upward direction. If the equilibrium is limiting, to find P.
36. Forces of magnitudes 2, $\sqrt{3}$, 5, $\sqrt{3}$, 2 respectively act at one of the angular points of a regular hexagon towards the other five points in order. S.T their resultant is of magnitude 10 and makes an angle of 60° with the first force.

UNIT – II
TWO MARKS

1. Define moment of a force.
2. Define Sign of moment.
3. Define Scalar moment.
4. Define rigid body.
5. Define applied forces.
6. Define effective forces.

7. Define like parallel forces.
8. Define unlike parallel forces.
9. Define kinetic energy of a rigid body.
10. Define equivalent system of forces.
11. Define couples.
12. Define arm and axis of a couple.
13. Define moment of a couple.

FIVE MARKS

14. Two like parallel forces P and Q act on a rigid body at A and B respectively. If P and Q be interchanged in position, Show that the point of application of the resultant will be displaced along AB through a distance (P-Q/P+Q) AB.
15. Three forces acting along the sides of a triangle in the same order are equivalent to a couple. S.T they are proportional to the sides of the triangle.
16. Forces of magnitudes $3P, 4P, 5P$,acts along the sides BC, CA, AB of an equilibrium triangle of side . find the moment of the resultant about A.

TEN MARKS

17. Find the resultant of two like parallel forces acts on a rigid body.
18. State and prove Varigon's theorem.
19. Three like parallel forces P, Q, R act A, B, C of a triangle ABC. P.T if their resultant passes through the circumference of a triangle, then $\frac{P}{\sin 2A} = \frac{Q}{\sin 2B} = \frac{R}{\sin 2C}$.
20. Three like parallel forces P, Q, R act at the vertices of a triangle ABC. P.T their resultant passes through i) the incentre of a triangle if P = Q = R ii) the centroid if $\frac{P}{a} = \frac{Q}{b} = \frac{R}{c}$.
21. P, Q, R are forces along the sides BC, CA, AB of a triangle ABC taken in order. Show that , if their resultant passes through
    i) the incentre, then $P + Q + R = 0$.
    ii) The centroid, then $\frac{P}{\sin A} = \frac{Q}{\sin B} = \frac{R}{\sin C}$.
    iii) The circumcentre, then $P \cos A + Q \cos B + R \cos C = 0$

UNIT - III

TWO MARKS

1. Define coplanar forces.
2. S.T two couples of equal moments are equivalent.
3. When will three coplanar forces keep a rigid body in equilibrium?
4. Write down condition of equilibrium a rigid body in which two coplanar couples act.
5. Write down cotangent formulae.

FIVE MARKS

6. S.T a system of coplanar forces reduces either to a single force or to a single couple.

7. S.T the forces AC, CE, EA acting respectively at A, C, E are equivalent to a couple whose moment equal to the area of the hexagon.
8. Three coplanar forces represented by and acting along the sides of a triangle, taken in order, reduce to a couple, the magnitude of whose moment being equal to twice the area of the triangle.
9. S.T a couple and a force in the same plane reduce to a single force.
10. A rod whose centre of gravity divides it into two portional of lengths a, b rests with in a smooth sphere inclined at an angle Θ to the horizontal. If it subtends an angle 2α at the centre of the Sphere. Show that $(b + a)\tan\theta = (b - a)\tan\alpha$

TEN MARKS

11. Prove that any finite collection C of co-planar couple is equivalent to a single couple whose (vertex) moment equal to a vector sum of the moments of all the couples in C.
12. A uniform ladder is in equilibrium with one end resting on the ground and the other against a vertical wall. If the ground and the wall are rough, the coefficient of friction being μand μ', and if the ladder is on the point of slipping, show that the inclination of the ladder to the horizon is given by $\tan\theta = \frac{1-\mu\,\mu}{2\mu}$
13. If Forces of magnitude $2, \sqrt{3}, 5, \sqrt{3}, 2$respectively act at one of the angular points of a regular hexagon towards the other five points in order, Show that their resultant is of magnitude 10, and makes an angle 60° with the first force.

UNIT – IV
TWO MARKS

1. Define stable equilibrium.
2. Define centre of gravity.
3. Define centre of mass.
4. Where will be the centre of gravity of quadrant of elliptic lamina?
5. If the position vector of centre of gravity (OG)of a thin wire in the form of a circular wire of radius "a", which subtends an angle 2α at the centre is $\frac{a\sin\alpha}{\alpha}$, find OG when the wire is a semicircle.

FIVE MARKS

6. Find the C.G of a uniform Circular arc subtending an angle 2α at the centre.
7. A rough solid hemisphere rests on a fixed rough sphere of equal radius. Show that the equilibrium is stable and unstable if the flat surface of the hemisphere and the curved surface of the hemisphere rests on the sphere respectively.
8. Find the centre of gravity of rods forming a triangle.
9. Forces P,Q,R act along the sides BC, AC, BA respectively of an equilateral triangle. If their resultant is a force parallel to BC through the centroid of the triangle prove that $Q = R = P/2$.

TEN MARKS

10. Find the centre of gravity of a solid right circular cone.
11. Find the center of gravity of hollow hemisphere.

UNIT – V

TWO MARKS

1. Define sag and span.
2. Define catenary.
3. Define vertex and directrix.
4. Define work.
5. Define virtual work
6. Define virtual displacement.
7. What is a suspension bridge?
8. Define common catenary..
9. What are the two forces acting on a hanging body is equilibrium?

FIVE MARKS

10. Derive the equation of catenary.
11. Show that the lenght of an endless chain which will hangover a circular pulley of radius "a" so as to be in contact with two-thirds of the circumference of the pulley is $a\alpha\left(\frac{3}{\log(2+\sqrt{3})}+\frac{4\pi}{3}\right)$.
12. To calculate approximately the sag of a telephone wire in terms of its length and span when the wire is tightly pulled and to find the tension if w is the weight of the wire per unit length.

TEN MARKS

13. A telegraph wire, stretched between two points at a distance 'a' feet apart sags n feet in the middle. Prove that the tension at the ends is approximately $w\left(\frac{a^2}{8n}+\frac{7}{6}n\right)$, where is the weight per unity lenght of the wire.
14. A solid hemisphere is supported by a string fixed to a point A on its rim and to a point O on a smooth vertical wall with which the curved surface is in contact at P. If θ and Φ are the inclination of the string and the plane base of the hemisphere to the vertical. Prove that $\tan\varphi=\frac{3}{8}+\tan\theta$.
15. A uniform string of length l is suspended from the points A,B in the same horizontal line.
    i) If the tension at A is n times the tension at the lowest point C, then show that the span $\frac{1}{\sqrt{n^2-1}}\log\left(n+\sqrt{n^2-1}\right)$.
    ii) If the tension at A is twice that at the lowest point C, then show that the span $\frac{1}{\sqrt{3}}\log\left(2+\sqrt{3}\right)$.
16. State and prove the principle of virtual work.

MAR GREGORIOS COLLEGE OF ARTS AND SCIENCE
DEPARTMENT OF COMPUTER SCIENCE
QUESTION BANK
SUBJECT: COMPILER DESIGN

Unit – I

2 Mark Questions

1. What is meant by Assembler?
2. Define Pass.
3. Define Three-Address Code.
4. What is a compiler?
5. Define NFA.
6. What is regular expression?
7. Write an advantage of Regular expressions.
8. Define translator and compiler.
9. Identify the tokens of the following statement.
10. IF (5.EQ. MIN) go to 200
11. Define macro.
12. What are tokens?
13. What is NFA?
14. Give the regular expression for binary strings with atleast a single 1.
15. What is Pass?
16. Write one valid operation on symbol table.
17. What is meant by Book keeping?
18. What is cross compiler?

Unit – I

5 Mark Questions

1. Discuss on Error-handling.
2. Explain the functions of lexical analyzer.
3. Discuss on the need of translators.
4. Write a note on Compiler writing tools.
5. Discuss the phases of a compiler.
6. What is a macro? Give example.
7. Find the tokens of the following statement :
   If (a>b) and (c<d) then c:=c+1
8. What are terminals and non terminals?

Unit – I

10 Mark Questions

1. Explain the implementation of a lexical analyzer.
2. Explain the structure of a compiler.
3. Explain the different phases of compiler with neat diagram.

Unit – II

2 Mark Questions

1. What are the two types of parser for context free grammars?
2. Define Parser.
3. Define Handle.
4. Define ambiguous grammar.
5. What is a recognizer for a language?
6. Write down examples for top down parsers.
7. Write any two functions of lexical analysis.
8. Define NFA.
9. What is Context free grammar?
10. What is a parse tree?
11. List out the rules of regular expression.
12. What are the four quantities of a grammar?
13. Write the representation of a parse tree.
14. Define LR parser
15. Define 'Syntax Tree'.
16. What is a leaf of parse tree called?
17. What are right most derivations otherwise called?
18. Write the name of one Top down parsing technique.
19. Expand NFA and DFA.

5 Mark Questions

1. Write notes on NFA.
2. Discuss the minimization procedure of DFA.
3. Explain the stack implementation of shift reduce parsing.
4. Discuss on the operator precedence parsing technique using associativity and precedence relationship.
5. Explain the procedure for reducing the states of a DFA.
6. Discuss the draw backs on Top down parsing techniques.
7. Explain the functions using the shift reduce parsing.
8. Write the procedures for finding FIRST of a nonterminal with examples.
9. Explain the syntax of grammar with an example.
10. Discuss on problems in Top down parsing.

10 Mark Questions

1. Illustrate context free grammers.
2. Construct the DFA for the regular expression (a/b)* abb.
3. Discuss on the procedure for constructing DFA for a regular expression.
4. Give a detailed note on finite automata.
5. Explain Top-down parser.
6. Explain the procedure for constructing NFA from regular expression.
7. Discuss on 'NFA to DFA conversion

Unit – III

2 Mark Questions

1. What is meant by translation?
2. Define Inherited translation.
3. What are the disadvantages of operator precedence grammar?
4. Define syntax directed translation scheme.
5. What is Context free grammar? Give an example.
6. Write down the procedure for eliminating left recursive productions.
7. Write down the advantages of indirect triples.
8. Define operator grammar.
9. What is a semantic action?
10. Define syntax directed translation.
11. List any one storage allocation technique.
12. What is ambiguous grammar?
13. List the actions of SR parser.
14. What is syntax tree?
15. Define operator precedence grammar.
16. What is 'reduce' action in SR parsing?

5 Mark Questions

1. Write notes on predictive parsers.
2. Discuss the parse trees.
3. Explain back patching with example.
4. Discuss on the procedure for representing parse trees with examples.
5. Explain the shift reduce parsing.
6. Explain procedure for constructing an LALR parsing table.
7. Write a note on Three address code representation.
8. Explain the various three Address Codes.
9. What is operator precedence grammar? Give example.
10. 16. Write a note on LR parsers.
11. Explain the actions of S-R parser with example.
12. Construct a parse tree for
13. '5+3+7' using P={E->E+E/0,1,..9}
14. Construct the syntax tree for the expression a*(b+c)/d and for the statement if a=b then a:=c+d else b:=c-d.

10 Mark Questions

1. Explain shift reduce parsing.
2. Explain the predictive parser with suitable examples.
3. Construct the SLR parsing table for the grammar
4. E->E+T/T; T->T*F/F; F->(E)/id
5. Construct operator precedence parsing table for
6. the following grammar.
   E->E+T/T;
   T->T*F/F;
   F->(E)/id
7. Explain the SLR parser.

8. Construct operator precedence parsing table for the following grammar.
   S->a|^|(T)

   T->T,S|S
9. Construct the collection of sets of items using SLR parsing for the
10. following grammar.

    E->E+T/T;
    T->T*F/F;
    F->(E)/id
    Discuss the techniques used by recursive descent parser to avoid backtracking. Give examples.
11. Explain in detail canonical LR technique with example.

Unit – IV

2 Mark Questions

1. What is flow graph?
2. What are the various interrelated areas of code optimization?
3. Write the principal draw backs of LR parsers.
4. Define semantic action.
5. Write the postfix of: (a+b)*(c+d)/e.
6. Write the principal draw backs of LR parsers.
7. Define LR grammar.
8. Define syntax directed translation scheme.
9. Define semantic action.
10. What is symbol table?
11. Define Code Optimization.
12. List out the four kinds of intermediate code.
13. How sematic errors can be detected?
14. What is the significance of syntax directed translation scheme?
15. List any one data structure used to implement symbol table.
16. Write one notation used for intermediate code.
17. Define postfix notation.
18. What is intermediate code?

5 Mark Questions

1. Discuss on data structures for symbol tables.

2. Discuss any one method of translating Boolean expressions.

3. Explain 'Back patching'.
4. List the required capabilities of symbol table.
5. What is the use of postfix notation in compilers? Explain.
6. Explain the procedures First ( ) and Follow ( )
7. Explain the LR parsing technique.

8. Find the operator precedence relations for the grammar :
   a. E->E+E|E-E|E*E|(E)|id.
9. Explain the contents of symbol table.

10 Mark Questions

1. Describe loop optimization.
2. Describe the contents of a symbol table.
3. Discuss on various representations of intermediate code generation
4. Discuss the implementation of syntax directed translation.
5. Discuss any four code optimization techniques.
6. . Explain the data structure used for symbol table.

Unit – V

2 Mark Questions

1. What is meant of loop optimization?
2. What is the use of GETREG function?
3. What is register descriptor?
4. What is basic block?
5. Define DAG.
6. Define register descriptor.
7. Name any two major tasks in code generation.
8. What do you mean by dynamic error?
9. What is the purpose of an address descriptor?
10. Define induction variable of loop L.
11. What is the "90 – 10" rule?
12. What is the need for optimization?
13. What is meant by code optimization?
14. List one characteristic of basic block.
15. What is the function of register descriptor?
16. What is code motion?
17. List a requirement imposed on a code generator.
18. . What is the input given to code generator?
19. Give one example for syntactic errors.
20. What is address descriptor?

5 Mark Questions

1. Write notes on code motion.
2. Discuss on syntactic errors
3. Discuss on the peephole optimization
4. Explain the sources of errors.
5. Explain the principal sources of optimization.
6. Discuss the problems of code generation.
7. Explain any three error types.
8. Discuss on dominators.
9. Discuss on semantic errors.

10 Mark Questions

1. Illustrate notes on code generation from DAG.
2. Explain the principal sources of optimizations.
3. Discuss on the Code generation algorithm with example.
4. Discuss the syntactic-phase errors in detail.
5. Discuss various types of Errors.
6. Write notes on data flow analysis.
7. Give a detailed note on simple code generator.
8. Explain the problems in code generation phase.
9. Explain the syntactic and semantic error handling. Give examples.
10. Discuss on 'Data flow analysis'.
11. Explain in detail the code generation phase of compiler.
12. Explain loop optimization.

13. What are the primary sources of errors and explain with example syntactic errors.