SIXTH SEMESTER

BCA-610 SOFTWARE TESTING AND QUALITY ASSURANCE

Maximum Time : 3 Hrs. University Examination : 70 Marks
Total Marks : 100 Continuous Internal Assessment : 30 Marks
Minimum Pass Marks : 40%

(A) Instructions for the Paper setter:
The question paper will consist of five sections: A, B, C, D and E. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 15% of the total marks (12 marks) each. Section E will consist of 10 short answer type questions, which will cover the entire syllabus uniformly and will carry 40% of the total marks (32 marks) in all.

(B) Instructions for the Candidates:
1. Candidates are required to attempt one question each from the section A, B, C and D of the question paper and the entire section E.
2. Use of non-programmable scientific calculator is allowed.

SECTION A
Definition of testing, goals, psychology, model for testing, effective testing, limitations of testing, Definition of testing Definition of failure faults or bug, error incident, test case, test ware, life cycle of bug, bug effects, bug classification, test case design, testing methodology, development of test strategy, verification, validation, testing life cycle mode, testing techniques, testing principles.

SECTION B
Verification activities, verification of requirements, verification of HL design, verification of data design, verification of architectural design, verification of UI design, verification of LL design, intro. to validation activites.

SECTION C
Boundary value analysis, equivalence class portioning, state table based testing, decision table based, grappling, error guessing, Logic coverage criteria, basic path testing, graph matrices, loop testing, mutation testing.

SECTION D
Types of static testing, technical reviews, inspections, inspection process, structured walk through, walk through process, adv. Of static testing, Unit testing drivers stubs, integration testing, methods, effect of module coupling and cohesion, functional testing, system testing, recovery testing, security testing, stress testing, performance testing, usability testing.

Reference:-

1. R.E. Fairley, "Software Engineering Concepts", McGraw-Hill, 1985.
2. P. Jalota, "An Integrated Approach to Software Engineering", Narosa Publishing House, 1992
3. M. Shooman, "Software Engineering", McGraw-Hill, 1983.
4. Boris Beizer, “Software Testing Techniques”, Second Edition, Van Nostrand Reinhold, 1990.
5. Roger. S. Pressman, “Software Engineering - A Practitioner’s Approach”, Third Edition, McGraw Hill, 1992
6. Rajib Mal, “Software Engineering’.

BCA-620 (E-I) Artificial intellegence

Maximum Time : 3 Hrs.
Total Marks : 100
Minimum Pass Marks : 40%

University Examination : 70 Marks
Continuous Internal Assessment : 30 Marks

(A) Instructions for the Paper setter:
The question paper will consist of five sections: A, B, C, D and E. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 15% of the total marks (12 marks) each. Section E will consist of 10 short answer type questions, which will cover the entire syllabus uniformly and will carry 40% of the total marks (32 marks) in all.

(B) Instructions for the Candidates:
1. Candidates are required to attempt one question each from the section A, B, C and D of the question paper and the entire section E.
2. Use of non-programmable scientific calculator is allowed.

SECTION A
Turing test, characteristic of AI approach for problem solving, problem representation in AI, State space Representation, Problem reduction..

SECTION B
Rearing :- Propositional and predicate logic, POPL, Modes Ponen, Modus tollen, Universal and Esthetical qualifier.
AI searching techniques : Breadth first, Depth first search, Hill climbing, Problem of Hill climbing, Best first search , A*, AO*, Beam Search, Constraint Satisfaction.

SECTION C
Knowledge Representation :- Frames, scripts, Semantic nets, production systems , procedural representation.
Natural language processing :- Need, Problem of NLP, Keyword analysis, syntactic Driver, RTN, ATN.

SECTION D
Expert system :- Characteristic of Expert system, Architecture of ES, Knowledge Base, Inference Engine (Forward & Backward Chaining) Production system, User interface, Knowledge acquisition facility, External Interface.

Reference:

1. D. Hearn & M.P. Baker, “Computer Graphics”, (2ND Edition), PHI.

BCA-620 (E-II) COMPUTER GRAPHICS

Maximum Time : 3 Hrs. University Examination : 70 Marks
Total Marks : 100 Continuous Internal Assessment : 30 Marks
Minimum Pass Marks : 40%

(A) Instructions for the Paper setter:
The question paper will consist of five sections: A, B, C, D and E. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 15% of the total marks (12 marks) each. Section E will consist of 10 short answer type questions, which will cover the entire syllabus uniformly and will carry 40% of the total marks (32 marks) in all.

(B) Instructions for the Candidates:
Candidates are required to attempt one question each from the section A, B, C and D of the question paper and the entire section E.

SECTION A
Input device - Keyboard, Touch Panel, Light pens, Graphic tablets, Joysticks, Touch balls, Image scanner, Mouse.
Handy copy device :- Zero impact and Non impact printers, Dot matrix, Laser printer, Inkjet printer, Dectrostate, flatted and drum plotters.

SECTION B
Video display devices :- Cathode ray tube, Resistance, Resolution, aspect ration vertical and horizontal, colour CRT monitors, Direct view storage tube, Flat panel displays, LCD, virtual reality, Faster scan system, random scan system.
Memory device :- Memory (RAM,ROM), CD, Floppy Disk, Magnetic tapes, Magnetic disks.

SECTION C
Scan conversion algorithm for line (DDA, Bresenham's algorithm) midpoint circle, ellipse, two dimensional graphics, Geometric transformation (translation, scaling, relation).

SECTION D
Three dimensional graphics :- Geometric transformation (translation, scaling, rotation) 2-D & 3-D viewing transformation and clipping.

Reference:-

1. O. Hearn and Banes "Computer Graphics".
2. J.O. Foley, A.V. Oom, "Introduction to computer Graphics".
3. Baber, "Computer Graphics".

BCA-620 (E-III) MULTIMEDIA

Maximum Time : 3 Hrs.
Total Marks : 100
Minimum Pass Marks : 40%

University Examination : 70 Marks
Continuous Internal Assessment : 30 Marks

(A) Instructions for the Paper setter:
The question paper will consist of five sections: A, B, C, D and E. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 15% of the total marks (12 marks) each. Section E will consist of 10 short answer type questions, which will cover the entire syllabus uniformly and will carry 40% of the total marks (32 marks) in all.

(B) Instructions for the Candidates:
1. Candidates are required to attempt one question each from the section A, B, C and D of the question paper and the entire section E.
2. Use of non-programmable scientific calculator is allowed.

SECTION A
Definition of Multimedia, Multimedia in Business, Multimedia in schools, Multimedia in public places, Introduction to mobbing multimedia (Hardware, Software, Creativity, Organization), Multimedia skills.

SECTION B
Text :- The power of Meaning, About fonts and faces, Using text in Multimedia, Hypermedia and Hypertext.
Sound :- Te power of sound, Digital Audio, Mobbing Midi Audio, Audio file formats, Midi V/s Digital Audio.

SECTION C
Images :- Mobbing still images (Bitmaps, Vector drawing and Rendering) Image file formats.
Animation :- The power of motion principle of Animation, Animation by computers,
Video :- Using video, Analog display standards (NTSC,PAL,SECAM) Digital video, digital display standards.

SECTION D
Basic software tools :- Text editing and word processing tools, OCR software painting and drawing tools, 3-D modeling and animation tool , sound editing tools.
Multimedia authoring tools :- Types of authoring tools, Card and page based authority tools, Icon and ` based authority tools.
Planning and cost :- The process of mobing multimedia, idea analysis, pre-testing, Task planning, prototype development, Alpha Development, Bera Development), Scheduling, Estimating.

Reference:-

1. Tay Vaughan, “Multimedia :- Mobing work by”(7Th Edition), Tata McGrawHILL.

BCA-630 P SOFTWARE LAB – V (WEB TECHNOLOGY)

Maximum Time : 3 Hrs. University Examination : 70 Marks
Total Marks : 100 Continuous Internal Assessment : 30 Marks
Minimum Pass Marks : 40%

Programming in DHTML & XML.

BCA-640 P SOFTWARE LAB – VI (. NET FRAMEWORK AND C#)

Maximum Time : 3 Hrs. University Examination : 70 Marks
Total Marks : 100 Continuous Internal Assessment : 30 Marks
Minimum Pass Marks : 40%

Programming in C#.