

University of Mumbai

Examinations Commencing from 15th June 2021

Program: **Information Technology**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC702 and Course Name: Cloud Computing

Time: 2 hour

Max. Marks: 80

| | |
|------------|------------------------------------------------------------------------------------------------------------------|
| Q1. | Choose the correct option for following questions. All the Questions are compulsory and carry equal marks |
| 1. | What is the full form of Eucalyptus |
| Option A: | Elastic utility computing architecture for linking your program to useful system |
| Option B: | Elastic usability computing architecture for loading your program to useful system |
| Option C: | Enable utility computing architecture for linking useless program to useful system |
| Option D: | Efficient utility calculated architecture for linking your program to useful system |
| 2. | The nodes types of eucalyptus are |
| Option A: | Additive and subtractive |
| Option B: | Static and dynamic |
| Option C: | High level and low level |
| Option D: | Managed, system and static |
| 3. | Utility computing gives |
| Option A: | Provisioning for urgent work with incentive for users |
| Option B: | All cloud services |
| Option C: | All network services |
| Option D: | Client server combination |
| 4. | Cloud computing components are |
| Option A: | Different types of clients |
| Option B: | Grid and utility computing components |
| Option C: | Client, server, data center and internet |
| Option D: | All networking devices |
| 5. | Private cloud |
| Option A: | Its size is always larger then the public cloud |
| Option B: | Has its infrastructure inhouse |
| Option C: | Is accessible to all the users |
| Option D: | All its services are on the cloud |
| 6. | What types of issue is caused by creation of multiple copies of data during date transformation |
| Option A: | Runtime issue |
| Option B: | Redundancy issue |
| Option C: | Implementation issue |
| Option D: | deployment issue |

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| 7. | Which of the following port numbers is used to share files and printers on a |
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| | windows machine |
| Option A: | 50 |
| Option B: | 21 |
| Option C: | 139 |
| Option D: | 23 |
| | |
| 8. | Which one of the following is not a feature of Cloud Storage Gateways |
| Option A: | Caching algorithm |
| Option B: | Data replication process |
| Option C: | Synchronous snapshots |
| Option D: | Routing |
| | |
| 9. | Which of the following layers comprises cloud servers , storage , load balancers and security devices? |
| Option A: | Transport layer |
| Option B: | Compute layer |
| Option C: | Network layer |
| Option D: | User Access layer |
| | |
| 10. | Which one of the following is a technique used to improve cloud database performance |
| Option A: | Normalization |
| Option B: | BCNF |
| Option C: | Sharding |
| Option D: | RBAC |
| | |
| 11. | Which is not cloud host and data security product available |
| Option A: | Secure Cloud |
| Option B: | Deep security |
| Option C: | OSSEC |
| Option D: | Internet Explorer |
| | |
| 12. | SaaS providers manage and secure all the following except: |
| Option A: | Infrastructure |
| Option B: | OS |
| Option C: | Application Stack |
| Option D: | Access Controls |
| | |
| 13. | In which environment do admins have the most control over cloud app security? |
| Option A: | PaaS |
| Option B: | SaaS |
| Option C: | IaaS |
| Option D: | CaaS |
| | |
| 14. | Simple Cloud, jclouds and Libcloud are all examples of: |
| Option A: | Vendor-specific cloud APIs |
| Option B: | Cross-platform APIs |
| Option C: | IaaS APIs |
| Option D: | Apache APIs |
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| 15. | In which of the following phases requires review of various internal and cloud provider features? |
| Option A: | Assessment |
| Option B: | PoC |
| Option C: | Pilot Migration |
| Option D: | Testing |
| 16. | Which of the following tool collect and store data, based on the identified atomic units for each type of billable item? |
| Option A: | Data collection tools |
| Option B: | Arbitration tool |
| Option C: | Billing system |
| Option D: | Capacity analysis tool |
| 17. | Validating a user's identity to permit or reject a login is called -----. |
| Option A: | Availability |
| Option B: | Authorization |
| Option C: | Accounting |
| Option D: | Authentication |
| 18. | Which of the following protocol is used by AAA servers? |
| Option A: | TCP |
| Option B: | RADIUS |
| Option C: | IP |
| Option D: | FTP |
| 19. | Which of the following techniques migrate to and host the old application on a PaaS provider's infrastructure? |
| Option A: | Application Re-hosting |
| Option B: | Application Re-factoring |
| Option C: | Application Revision and Optimization |
| Option D: | Application Re-architecture and re-building |
| 20. | Which layer facilities the clients to store servers and hardware components? |
| Option A: | Data center |
| Option B: | IaaS |
| Option C: | PaaS |
| Option D: | SaaS |

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| Q2. (20 Marks) | Solve any Two Questions out of Three | 10 marks each |
| A | Draw and explain the architecture of eucalyptus. | |
| B | Explain the cloud computing service model with details. | |
| C | What is full virtualization, para virtualization & VMM ? Explain in detail. | |

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| Q3. | Solve any Two Questions out of Three | 10 marks each |
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| (20 Marks) | |
| A | Explain Cloud Service Brokerage (CSB) in detail. |
| B | Write detailed Note on Amazon S3 . |
| C | Explain the architecture of Mobile Cloud Computing. |

Examinations Commencing from 15th June 2021

Program: INFORMATION TECHNOLOGY

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC702 and Course Name: Cloud Computing

Time: 2 hour

Max. Marks: 80

| Question Number | Correct Option (Enter either 'A' or 'B' or 'C' or 'D') |
|------------------------|-----------------------------------------------------------------------|
| Q1. | A |
| Q2. | D |
| Q3. | A |
| Q4 | C |
| Q5 | B |
| Q6 | B |
| Q7 | C |
| Q8. | D |
| Q9. | B |
| Q10. | C |
| Q11. | D |
| Q12. | D |
| Q13. | A |
| Q14. | B |
| Q15. | A |
| Q16. | A |
| Q17. | D |
| Q18. | B |
| Q19. | B |
| Q20. | B |

University of Mumbai
Examinations Commencing from 15th June 2021

Program: **Information Technology**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC7053 and Course Name: Elective I: E-Commerce & E- Business

Time: 2 hour

Max. Marks: 80

| Q1. | Choose the correct option for following questions. All the Questions are compulsory and carry equal marks |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | E-commerce is defined as? |
| Option A: | Doing business electronically |
| Option B: | Buying products |
| Option C: | Selling products |
| Option D: | Doing business |
| 2. | The phases in JSP life cycle are ? |
| Option A: | Initialization, Cleanup, Compilation, Execution |
| Option B: | Compilation, Initialization, Execution, Cleanup |
| Option C: | Cleanup, Compilation, Initialization, Execution |
| Option D: | Initialization, Compilation, Cleanup, Execution |
| 3. | Which one of the following can prevent double spending in e-payment? |
| Option A: | Complex decryption algorithms |
| Option B: | Simple cryptographic algorithms |
| Option C: | Complex cryptographic algorithms |
| Option D: | Complex coding algorithms |
| 4. | Visa and MasterCard are examples of? |
| Option A: | Simple system |
| Option B: | Open and Close loop system |
| Option C: | Open loop system |
| Option D: | Close loop system |
| 5. | The concept considers different types of tasks that are involved with adding value and looks at how the efficiency of these tasks can be improved, this concept is known as? |
| Option A: | Value chain |
| Option B: | Upstream supply chain |
| Option C: | downstream supply chain |
| Option D: | Value stream |
| 6. | In Advertising supported model "General Interest Strategy" is described as? |
| Option A: | Advertisers pay low rates to reach large numbers of undifferentiated visitors |
| Option B: | Advertisers pay high rates to reach small numbers of visitors with specific interests related to the theme of the site |

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| Option C: | Advertisers pay high rates for ads on specific pages that appeal to visitors with specific interests related to those pages or sections of the site |
| Option D: | Advertisers pay low rates to reach specific type of visitors |
| | |
| 7. | E-commerce is about buying and selling of goods around the web, whereas e-business is? |
| Option A: | E-business is also all about buying and selling products online. |
| Option B: | E-business is also about buying and selling products online, but not limited to. |
| Option C: | E-business is subset of e-commerce. |
| Option D: | E-business is equivalent to e-commerce. |
| | |
| 8. | In order to make automatic procurement process in e-business following thing is required? |
| Option A: | RFID |
| Option B: | VLSI |
| Option C: | Electronic procurement system |
| Option D: | Website |
| | |
| 9. | Which is the following shows relationship between these ecommerce and E-business? |
| Option A: | E-business is a subset of E-commerce. |
| Option B: | E-commerce is broadly equivalent to E-business. |
| Option C: | E-commerce is a subset of E-business. |
| Option D: | E-commerce has some overlap with E-business. |
| | |
| 10. | For an e Commerce website which of the following cannot be utilized as a CRM? |
| Option A: | Drupal |
| Option B: | Zoho |
| Option C: | Pipedrive |
| Option D: | Freshsales |
| | |
| 11. | Sell-side e commerce is an interaction between. |
| Option A: | Organization and stakeholders |
| Option B: | Organization and customers |
| Option C: | Organization and suppliers |
| Option D: | Organization and organization |
| | |
| 12. | Which of the following is not the session tracking techniques for building e-commerce applications? |
| Option A: | Hidden form fields |
| Option B: | Cookies |
| Option C: | URL Rewriting |
| Option D: | Using response object |
| | |
| 13. | Agile Wallet is developed by? |
| Option A: | Developed by Cyber |
| Option B: | Developed by Cybersecurity |
| Option C: | Developed by Cybertech |
| Option D: | Developed by cybercash |
| | |
| 14. | The free payment clearing service that PayPal provides to customer uses? Payment model- |

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|-----------|----------------------------------------------------------------------------------------------|
| Option A: | P2P |
| Option B: | P2B |
| Option C: | C2B |
| Option D: | C2C |
| | |
| 15. | With respect to E-business which of the following is true? |
| Option A: | Procurement purchases from intermediate |
| Option B: | Procurement purchases from supplier |
| Option C: | Procurement purchases from another organization |
| Option D: | Procurement purchase from supplier intermediate or another organization |
| | |
| 16. | If a company wants to host its E-commerce website then which of the following is not true? |
| Option A: | Shared hosting is cheaper than the dedicated hosting |
| Option B: | Shared hosting is safer than the dedicated hosting |
| Option C: | Dedicated hosting is safer than the shared hosting |
| Option D: | Dedicated hosting is costlier than shared hosting |
| | |
| 17. | An E-business objective should be SMART, within this acronym meaning of R is? |
| Option A: | Representative |
| Option B: | Responsible |
| Option C: | Reliable |
| Option D: | Relevant |
| | |
| 18. | If an E-Commerce company wants to increase their sale in India then what should be avoided? |
| Option A: | Cash on delivery option |
| Option B: | Use the hardware technology from Shanghai |
| Option C: | Creating product for elders |
| Option D: | Creating product for teenagers |
| | |
| 19. | If a company wants to launch its E-commerce website on the internet they should not contact? |
| Option A: | Hostgator |
| Option B: | Blue Host |
| Option C: | WPX Hosting |
| Option D: | FACEBOOK |
| | |
| 20. | With respect to ecommerce website design which of the following is more correct? |
| Option A: | Just like the look and feel of the website interface is also important |
| Option B: | Responsiveness of the website is important |
| Option C: | Look feel and the responsive interface of the website is important |
| Option D: | Interface is not that much than look and feel of the website |

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| Q2. (20 Marks) | Solve any Two Questions (10 marks each) |
| A | With neat diagram, explain the working of SET protocol used in card payment system. |
| B | Differentiate between traditional commerce and electronic commerce, by elaborating on the following eight points. (1) How the commerce takes place (2) Payment options (3) Any two benefits (4) Any two shortcomings (5) Risks involved (6) Security measures (7) Example application where it cannot be used (8) Example application where it is well suited |
| C | Discuss various categories of e-commerce payment methods along with example of each. |

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| Q3. (20 Marks) | Solve any Two Questions. (10 marks each) |
| A | Discuss the CRM strategy adopted by any company to acquire, convert, retain, growth of the customer worldwide/ nationwide. |
| B | What are 7 P's of e-marketing? Also, discuss at least 5 ethical issues that can affect e marketing. |
| C | What are the different revenue models in ecommerce? Also, explain the SLEPT framework in e-commerce. |

Program: Information Technology
Curriculum Scheme: Rev 2012
Examination: BE Semester VII

Course Code: ITC7053 and Course Name: Elective I: E-Commerce & E- Business

Time: 2 hour

Max. Marks: 80

| Question Number | Correct Option (Enter either 'A' or 'B' or 'C' or 'D') |
|------------------------|-----------------------------------------------------------------------|
| Q1. | A |
| Q2. | B |
| Q3. | C |
| Q4 | D |
| Q5 | D |
| Q6 | A |
| Q7 | B |
| Q8. | C |
| Q9. | C |
| Q10. | A |
| Q11. | B |
| Q12. | D |
| Q13. | D |
| Q14. | A |
| Q15. | D |
| Q16. | B |
| Q17. | D |
| Q18. | B |
| Q19. | D |
| Q20. | C |

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Examinations Commencing from 15th June 2021

Program: **Information Technology**

Curriculum Scheme: Rev2012

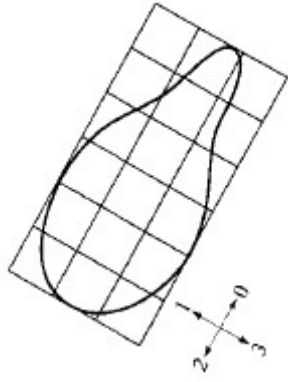
Examination: BE Semester VII

Course Code: ITC7051 and Course Name: **Elective I: Image Processing**

Time: 2 hour

Max. Marks: 80

| Q1. | Choose the correct option for following questions. All the Questions are compulsory and carry equal marks |
|-----------|-----------------------------------------------------------------------------------------------------------|
| 1. | Which statement is true for sampling? |
| Option A: | It determines the contrast of the image. |
| Option B: | It determines the number of grey levels in the digitized images. |
| Option C: | It determines the intensity values of the image. |
| Option D: | It determines the spatial resolution of the digitized images. |
| 2. | For a grayscale images, the pixel value is a single number that represents the |
| Option A: | brightness |
| Option B: | frequency |
| Option C: | position |
| Option D: | origin |
| 3. | Which filter is best suited to remove salt and pepper noise in images? |
| Option A: | Median filter |
| Option B: | Low pass filter |
| Option C: | High pass filter |
| Option D: | High boost filter |
| 4. | Filters used for smoothing are called_____. |
| Option A: | Low pass filters |
| Option B: | Median filters |
| Option C: | High boost filters |
| Option D: | High pass filters |
| 5. | A graph showing the number of pixels in an image at each different intensity value is called ____. |
| Option A: | Resolution |
| Option B: | Histogram |

| | |
|-----------|--------------------------------------------------------------------------------------------------------------------------------|
| Option C: | Contrast |
| Option D: | Pixel connectivity |
| 6. | 2-D DFT can be separated into two 1-D DFT using _____. |
| Option A: | Translation property |
| Option B: | Separability property |
| Option C: | Rotation property |
| Option D: | Linearity property |
| 7. | _____ components are used in Homomorphic filtering. |
| Option A: | illumination and reflectance |
| Option B: | low frequency components |
| Option C: | high frequency components |
| Option D: | value at origin |
| 8. | Which of the following techniques of boundary descriptions have the physical interpretation of boundary shape? |
| Option A: | Statistical Moment |
| Option B: | Fourier Descriptor |
| Option C: | shape number |
| Option D: | curvature |
| 9. |  <p>chain code for this given figure is</p> |
| Option A: | 003010203310321032 |
| Option B: | 000030032232221211 |
| Option C: | 012302301023100321 |
| Option D: | 022332103210201330 |
| 10. | _____ is not a measure of the texture properties of the region. |
| Option A: | smoothness |
| Option B: | coarseness |
| Option C: | regularity |
| Option D: | encoding |
| 11. | The reason for not getting perfect results after segmentation would be |
| Option A: | Noise and bad illumination |

| | |
|-----------|-----------------------------------------------------------------------------------------------|
| Option B: | Good illumination |
| Option C: | High contrast |
| Option D: | Low contrast |
| | |
| 12. | Which of the following segmentation techniques is also known as image enhancement techniques. |
| Option A: | Thresholding based segmentation |
| Option B: | Edge- based segmentation |
| Option C: | Region based segmentation |
| Option D: | Graph Theoretic Technique |
| | |
| 13. | _____ of the gradient component is considered for edge elements. |
| Option A: | Magnitude |
| Option B: | Region |
| Option C: | Slope |
| Option D: | Position |
| | |
| 14. | _____ transform is not suitable for compression. |
| Option A: | Fourier Transform |
| Option B: | Cosine Transform |
| Option C: | Wavelet Transform |
| Option D: | Haar Transform |
| | |
| 15. | _____ is not a type of redundancy. |
| Option A: | crypto |
| Option B: | coding |
| Option C: | inter-pixel |
| Option D: | psychovisual |
| | |
| 16. | Select incorrect statements related to vector quantization. |
| Option A: | It divides into fixed-size blocks |
| Option B: | Use codebook and index for decoding |
| Option C: | It generate Codebook for coding |
| Option D: | Indexed image blocks of variable size |
| | |
| 17. | _____ is used to expand the boundary of an object. |
| Option A: | Opening |

| | |
|-----------|------------------------------------------------------------|
| Option B: | Closing |
| Option C: | Erosion |
| Option D: | Dilation |
| 18. | Basis of the mathematical morphology is _____. |
| Option A: | Matrix Theory |
| Option B: | Vector Theory |
| Option C: | Set Theory |
| Option D: | Array Theory |
| 19. | _____ is a basic feature used in CBIR. |
| Option A: | Texture |
| Option B: | Color |
| Option C: | Shape |
| Option D: | Histogram processing |
| 20. | _____ is not a suitable method for color text compression. |
| Option A: | RLE |
| Option B: | Huffman |
| Option C: | LZW |
| Option D: | Transform Coding |

Descriptive Questions

| Q2 | Solve any Two Questions out of Three | 10 marks each |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| A | Describe in brief the following point processing image enhancement techniques. (i) Contrast stretching (ii) Gray Level Slicing | |
| B | Define region based segmentation. Describe different means to carry out region based segmentation. | |
| C | Perform Arithmetic coding on a 2x2 image [1, 2; 2, 3]. Note: The semicolon is used to end the row. | |

| Q3 | Solve any Two Questions out of Three | 10 marks each |
|-----------|--------------------------------------------------------------------------|----------------------|
| A | State and prove any 2 properties of 2D Discrete Fourier Transform. | |
| B | Write a note on the fourier descriptor and signature. | |
| C | List various morphological operations and explain any two with examples. | |

Program: **Information Technology**
Curriculum Scheme: Rev2012
Examination: BE Semester VII

Course Code: ITC7051 and Course Name: **Elective I: Image Processing**

Time: 2 hour

Max. Marks: 80

| Question Number | Correct Option (Enter either 'A' or 'B' or 'C' or 'D') |
|------------------------|-----------------------------------------------------------------------|
| Q1. | D |
| Q2. | A |
| Q3. | A |
| Q4 | A |
| Q5 | B |
| Q6 | B |
| Q7 | A |
| Q8. | A |
| Q9. | B |
| Q10. | D |
| Q11. | A |
| Q12. | A |
| Q13. | A |
| Q14. | A |
| Q15. | A |
| Q16. | D |
| Q17. | D |
| Q18. | C |
| Q19. | B |
| Q20. | A |

University of Mumbai

Examinations Commencing from 15th June 2021

Program: **Information Technology**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC703 and Course Name: Intelligent System

Time: 1 hour

Max. Marks: 80

Note to the students:- All the Questions are compulsory and carry equal marks .

| | |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------|
| Q1. | Thinking humanly is |
| Option A: | The laws of thought approach |
| Option B: | The Turing Test approach |
| Option C: | The cognitive modelling approach |
| Option D: | The rational agent approach |
| Q2. | Which of the following is FALSE? |
| Option A: | Reflex agents respond immediately to percepts |
| Option B: | Goal-based agents act so that they will achieve their goal(s) |
| Option C: | Utility-based agents try to maximize their own "happiness." |
| Option D: | Learning agent work on condition action rule |
| Q3. | Taxi driving agent is an example of _____ Environment |
| Option A: | Episodic |
| Option B: | Static |
| Option C: | Deterministic |
| Option D: | Fully observable |
| Q4. | What is the space complexity of Iterative deepening search? |
| Option A: | $O(bl)$ |
| Option B: | $O(bd)$ |
| Option C: | $O(bm)$ |
| Option D: | $O(bb)$ |
| Q5. | Where does the values of alpha-beta search get updated? |
| Option A: | Along the path of the search |
| Option B: | At the beginning of the search |
| Option C: | At the end of the search |
| Option D: | At the mid of the search |
| Q6. | In SELECT-UNASSIGNED-VARIABLE method which of the following is used as a tie breaker for MRV(Minimum Remaining Values) heuristic? |
| Option A: | Least Constraining Value |
| Option B: | Degree heuristic |
| Option C: | Arc consistency |
| Option D: | Backtracking |

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| Q7. | Which search uses the problem specific knowledge beyond the definition of the problem? |
| Option A: | Informed search |
| Option B: | Depth-first search |
| Option C: | Breadth-first search |
| Option D: | Uninformed search |
| Q8. | Which search uses only the linear space for searching? |
| Option A: | Best-first search |
| Option B: | Recursive best-first search |
| Option C: | Depth-first search |
| Option D: | Breadth-first search |
| Q9. | What is the other name of informed search strategy? |
| Option A: | Linear search |
| Option B: | Heuristic search |
| Option C: | Online search |
| Option D: | Breadth-first search |
| Q10. | Which function will select the lowest expansion node at first for evaluation? |
| Option A: | Greedy best-first search |
| Option B: | Best-first search |
| Option C: | Depth-first search |
| Option D: | None of the mentioned |
| Q11. | To eliminate the inaccuracy problem in planning problem or partial order planning problem we can use _____ data structure/s. |
| Option A: | Stacks |
| Option B: | Queue |
| Option C: | BST (Binary Search Tree) |
| Option D: | Planning Graphs |
| Q12. | What are the two major aspects which combines AI Planning problem? |
| Option A: | Search & Logic |
| Option B: | Logic & Knowledge Based Systems |
| Option C: | FOL & Logic |
| Option D: | Knowledge Based Systems |
| Q13. | Forward chaining systems are _____ whereas backward chaining systems are _____ |
| Option A: | Goal-driven, goal-driven |
| Option B: | Goal-driven, data-driven |
| Option C: | Data-driven, goal-driven |
| Option D: | Data-driven, data-driven |

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|-----------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Q14. | Which of the following is a Planning approach where the actions in the plan can occur without the rule that specific action has to come prior? |
| Option A: | Partial Order Planning |
| Option B: | Total Order Planning |
| Option C: | Planning task |
| Option D: | None of the given choices |
| Q15. | _____ search belongs to totally ordered plan search |
| Option A: | Forward state-space search |
| Option B: | Hill-climbing |
| Option C: | Best first search |
| Option D: | Depth-first search |
| Q16. | In probability theory, the set of all sample worlds is called? |
| Option A: | Sample Space |
| Option B: | Sample Worlds |
| Option C: | Sample Distribution |
| Option D: | Sample Certainty Space |
| Q17. | not the commonly used programming language for AI? |
| Option A: | PROLOG |
| Option B: | Perl |
| Option C: | Java |
| Option D: | LISP |
| Q18. | The DECISION-TREE-LEARNING algorithm adopts: |
| Option A: | Divide and conquer strategy |
| Option B: | Dynamic programming |
| Option C: | Greedy Algorithm |
| Option D: | Brute force |
| Q19. | What is Machine learning? |
| Option A: | The autonomous acquisition of knowledge through the use of manual programs |
| Option B: | The selective acquisition of knowledge through the use of computer programs |
| Option C: | The autonomous acquisition of knowledge through the use of computer programs |
| Option D: | The selective acquisition of knowledge through the use of manual programs |
| Q20. | In which of the following methods, an expert is asked to verbalize his thought process while solving a problem or making a decision? |

| | |
|-----------|-------------------------|
| Option A: | Protocol analysis |
| Option B: | Repertory Grid Analysis |
| Option C: | Knowledge discovery |
| Option D: | Observations |

| | | | |
|----|-----|--------------------------------------------------------------------------|-------|
| Q2 | A | Answer Any Two | Marks |
| | I | Compare the rational agent approach with the Turing Test approach. | 05 |
| | II | "THIS + IS = HERE" Solve this Cryptarithmic Puzzle. | 05 |
| | III | Briefly describe the breadth-first and the depth-first search for trees. | 05 |
| | B | Answer Any One | |
| | I | Explain working of Utility and Learning Agent | 10 |
| | II | Find the solution using Min-Max and Alpha Beta Pruning | 10 |
| | | | |
| Q3 | A | Answer Any Two | Marks |
| | I | Explain the architecture of a knowledge based agent. | 05 |
| | II | Explain Conditional Probability. | 05 |
| | III | Explain Decision Trees | 05 |
| | B | Answer Any One | |
| | I | What is partial ordered planning? Give example. | 10 |
| | II | What is Bay's theorem and Belief Network? | 10 |

Program: **Information Technology**
Curriculum Scheme: Rev2012
Examination: BE Semester VII

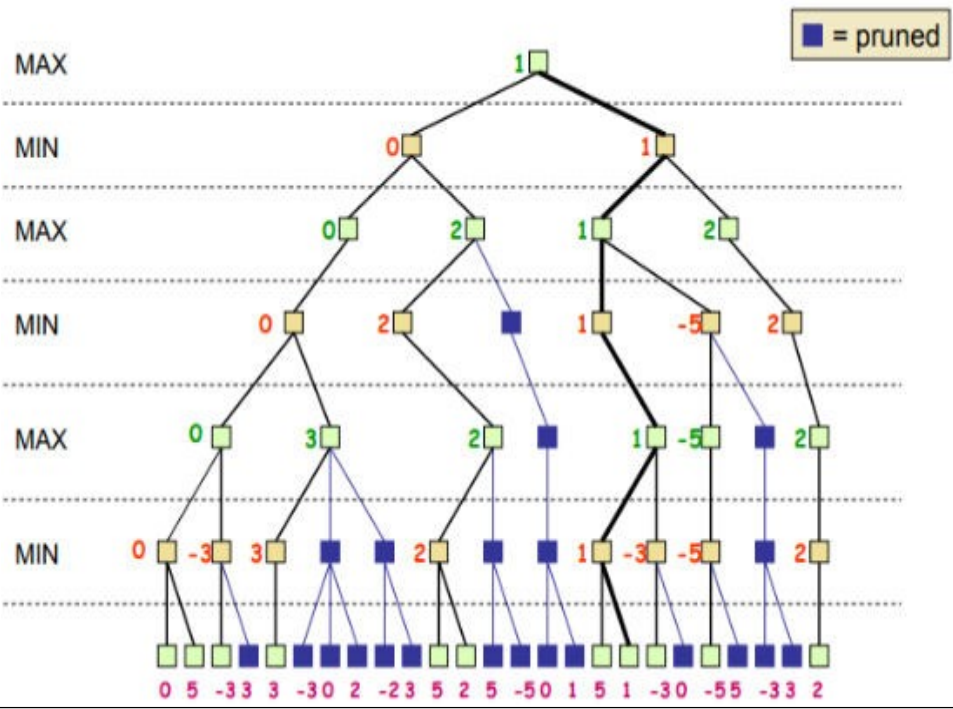
Course Code: ITC703 and Course Name: Intelligent System

Time: 1 hour

Max. Marks: 80

| Question | Correct Option (Enter either 'A' or 'B' or 'C' or 'D') |
|-----------------|-----------------------------------------------------------------------|
| Q1. | C |
| Q2. | D |
| Q3. | A |
| Q4 | B |
| Q5 | A |
| Q6 | B |
| Q7 | A |
| Q8. | B |
| Q9. | B |
| Q10. | B |
| Q11. | D |
| Q12. | A |
| Q13. | C |
| Q14. | A |
| Q15. | A |
| Q16. | A |
| Q17. | B |
| Q18. | A |
| Q19. | C |
| Q20. | A |

| | | | |
|----|----|--------------------------------------------------------|-------|
| Q2 | A | Answer Any Two | Marks |
| | II | H = 9, E = 0, T = 8, S = 5, I = 6, R = 3 | 05 |
| | B | Answer Any One | |
| | II | Find the solution using Min-Max and Alpha Beta Pruning | 10 |



University of Mumbai

Examinations Commencing from 15th June 2021 to 1st July 2021.

Program: B.E. Information Technology

Curriculum Scheme: Rev 2012

Examination: BE Semester: VII

Course Code:ITC7054 and Course Name: Multimedia Systems

Time: 2 hour

Max. Marks: 80

| | |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Q1. | Choose the correct option for following questions. All the Questions are compulsory and carry equal marks |
| 1. | Which program has pre-programmed elements for the development of interactive multimedia elements. |
| Option A: | Authoring System |
| Option B: | Interactive Audio |
| Option C: | Interactive Video |
| Option D: | Hypermedia documents |
| 2. | MIDI files may makes different sound when played back through different sound synthesizers and sound cards. What is the solution to overcome this problem |
| Option A: | General MPEG should be used. |
| Option B: | General MIDI should be used. |
| Option C: | Standardization in sound cards |
| Option D: | Standardization in synthesizers. |
| 3. | Which file format provides animation. |
| Option A: | TIFF |
| Option B: | JPEG |
| Option C: | BMP |
| Option D: | GIF |
| 4. | Following is not the standard for Analog video |
| Option A: | National Television System Committee |
| Option B: | Phase Alternate Line |
| Option C: | Sequential Color with Memory |
| Option D: | Audio Video Interleave |
| 5. | ----- file format allows us to represent virtual world via internet and with world wide web hyper linking. |
| Option A: | Virtual Reality Animation |
| Option B: | Virtual Reality Movie Maker |
| Option C: | Virtual Reality Encoder |
| Option D: | Virtual Reality Modeling Language |
| 6. | Which components contain significant visual information. |

| | |
|------------------|----------------------------------------------------------------------------------------------------------------------|
| Option A: | Luminance |
| Option B: | Chrominance |
| Option C: | Hue |
| Option D: | Saturation |
| | |
| 7. | Following is not the standard format for Digital audio. |
| Option A: | MPEG audio layer 3 file format |
| Option B: | Windows Media Viewer |
| Option C: | Waveform Audio File |
| Option D: | Free Lossless Audio Codec |
| | |
| 8. | Lossy compression indicates presence of |
| Option A: | Quantization |
| Option B: | Sampling |
| Option C: | Entropy |
| Option D: | Correlation |
| | |
| 9. | In JPEG 2000, which transformation is used to convert data from spatial domain to frequency domain. |
| Option A: | Sine Transform |
| Option B: | Discrete Cosine Transform |
| Option C: | Wavelet Transform |
| Option D: | Walsh Transform |
| | |
| 10. | Which techniques are used to capture temporal aspect of video? |
| Option A: | Motion estimation & compensation |
| Option B: | Thresholding |
| Option C: | Comparing |
| Option D: | Compression |
| | |
| 11. | This standard is handling Multimedia Content Description Interface |
| Option A: | MPEG-21 |
| Option B: | MPEG-7 |
| Option C: | MPEG-2 |
| Option D: | MPEG-1 |
| | |
| 12. | Theoretical foundations for lossy data compression is given by |
| Option A: | Trigonometry |
| Option B: | Economics |
| Option C: | Financial Analysis |
| Option D: | Rate Distortion Theory |
| | |
| 13. | -----method of sending Internet Protocol (IP) datagrams to a group of interested receivers in a single transmission. |
| Option A: | IEEE multicast |
| Option B: | TCP multicast |
| Option C: | IP multicast |
| Option D: | UDP multicast |
| | |

| | |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 14. | ATM supports which types of video bit rates |
| Option A: | Constant Bit Rate (CBR) |
| Option B: | Variable Bit Rate (VBR) |
| Option C: | Available Bit Rate (ABR) |
| Option D: | All of the above |
| 15. | Aim of this organization is to make strong communication framework which will connect all telecommunications and computer networks worldwide. |
| Option A: | Global Information Infrastructure |
| Option B: | Universal Multimedia Access |
| Option C: | Digital Multimedia broadcasting |
| Option D: | Wide Area Network |
| 16. | ATM can be used for |
| Option A: | Wide area network |
| Option B: | Local area network |
| Option C: | Networks covering any range |
| Option D: | Campus area network |
| 17. | Which technology converts Internet signal into radio waves. |
| Option A: | Ethernet |
| Option B: | Wi-Fi |
| Option C: | TCP and UDP protocol |
| Option D: | IP protocol |
| 18. | Who is creating and publishing Internet Standards |
| Option A: | ISO |
| Option B: | IEEE |
| Option C: | IETF |
| Option D: | CSI |
| 19. | ----- is a framework for Multimedia Standardization |
| Option A: | IETE |
| Option B: | MEDIACOM 2004 |
| Option C: | ACCESS |
| Option D: | MOSYN |
| 20. | -----audio/video refers to on-demand requests for compressed audio/video files. |
| Option A: | Streaming live. |
| Option B: | Interactive |
| Option C: | Streaming stored |
| Option D: | Real-time streaming |

Subjective:

| | |
|-----|---------------------------------------------|
| Q2. | Solve any Four out of Six. (5 marks each) |
| A | Explain different types of Authoring System |
| B | Explain TIFF file structure. |

| | |
|---|----------------------------------------------------------------------------------|
| C | Explain type of video signals: 1) Composite video 2) Component video 3) S-Video. |
| D | What is the role of Quantization in lossy compression. |
| E | Explain JPEG compression with block diagram. |
| F | Explain ADPCM in speech coding. |

| | |
|-----|----------------------------------------------------------------------------------|
| Q3. | Solve any Four out of Six. (5 marks each) |
| A | Explain different motion vector search technique. |
| B | Explain in detail Video on demand (VoD) concept. |
| C | What is mean by Standardization. How it is achieved for Multimedia Communication |
| D | Explain Multimedia over ATM Network |
| E | Explain Global Information Infrastructure (GII) |
| F | Explain in detail Universal Multimedia Access (UMA) |

Program: B.E. Information Technology
 Curriculum Scheme: Rev 2012
 Examination: BE Semester: VII
 Course Code: ITC7054 and Course Name: Multimedia Systems

Time: 2 hour

Max. Marks: 80

Q1. Choose the correct option for following questions. All the Questions are compulsory and carry equal marks

| Question Number | Correct Option (Enter either 'A' or 'B' or 'C' or 'D') |
|-----------------|-----------------------------------------------------------|
| Q1. | A |
| Q2. | B |
| Q3. | D |
| Q4. | D |
| Q5. | D |
| Q6. | A |
| Q7. | B |
| Q8. | A |
| Q9. | B |

| | |
|------|---|
| Q10. | A |
| Q11. | B |
| Q12. | D |
| Q13. | C |
| Q14. | D |
| Q15. | A |
| Q16. | C |
| Q17. | B |
| Q18. | C |
| Q19. | B |
| Q20. | C |

Q2. Whichever option(1/2/3) you Select for subjective/descriptive questions(total-20 Marks)

Model Answer: (with marks distribution)

| | |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Q2. | Solve any Four out of Six. (5 marks each) |
| A | Explain different types of Authoring System |
| Ans | <ol style="list-style-type: none"> 1. Dedicated Authoring System 2. Timeline-based Authoring 3. Structured Multimedia Authoring 4. Programmable Authoring System 5. Multisource Multi-user Authoring Systems 6. Telephone Authoring Systems |

| | |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Explanation of two to three lines expected on each type of authoring system. |
| B | Explain TIFF file structure. |
| Ans | TIFF Structure: File Organization: TIFF files are organized into three sections. 1. Image File Header (IFH) 2. Image File Directory (IFD) 3. Bitmapped Data (Images) Explanation on each point is expected of 4 to 5 lines. |
| C | Explain type of video signals: 1) Composite video 2) Component video 3) S-Video. |
| Ans | Basic structure, use, advantages and disadvantages. |
| D | What is the role of Quantization in lossy compression. |
| Ans | Definition of Quantization, Formula, Its significance, Reason for Lossy expected. |
| E | Explain JPEG compression with block diagram. |
| Ans | Block diagram of JPEG and explanation of each sub block is expected. Sub block are: Image Preparation Block, Forward DCT Transform, Quantization , DC coefficient, Run-length Coding (RLC) on AC coefficients, Zig-zag scan, DPCM on DC coefficients, Entropy Coding, Huffman coding, Arithmetic Coding |
| F | Explain ADPCM in speech coding. |
| Ans | Basic concept, block diagram of Encoder and Decoder, Role of Quantizer, Its applications expected. |

Q3. Whichever option(1/2/3) you Select for subjective/descriptive questions (total-20 Marks)

Model Answer: (with marks distribution)

| | |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Q3. | Solve any Four out of Six. (5 marks each) |
| A | Explain different motion vector search technique. |
| Ans | 1) Sequential Search 2) 2D Logarithmic Search 3) Hierarchical search. Explanation of each type with example. |
| B | Explain in detail Video on demand (VoD) concept. |
| Ans | Concept of Video on Demand (VoD), underlying network, basic requirements and applications are expected. |
| C | What is mean by Standardization. How it is achieved for Multimedia Communication |
| Ans | Need and advantages of standardization. Various types standard compression names for text, audio, video and image is expected. Also various standard protocol which are used for multimedia communication are expected. |

| | |
|-----|-------------------------------------------------------------------------------------------------------------------|
| D | Explain Multimedia over ATM Network |
| Ans | ATM concept, Why beneficial for multimedia, types of bit rate, applications that are suitable on ATM is expected. |
| E | Explain Global Information Infrastructure (GII) |
| Ans | What is GII, need, functionality or their projects provided by GII is expected. |
| F | Explain in detail Universal Multimedia Access (UMA) |
| Ans | Concept of UMA, requirement and approaches, advantages of UMA is expected. |

University of Mumbai

Examinations Commencing from 15th June 2021

Program: Information Technology

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC7052 and Course Name: Software Architecture

Time: 2 hour

Max. Marks: 80

| Q1. | Choose the correct option for following questions. All the Questions are compulsory and carry equal marks |
|------------|------------------------------------------------------------------------------------------------------------------|
| 1. | Which architecture style does Multi-level client server belong to? |
| Option A: | Object oriented style |
| Option B: | Mobile code style |
| Option C: | Blackboard style |
| Option D: | Layered style |
| 2. | Which architecture style is used in signal processing? |
| Option A: | Pipe and Filter style |
| Option B: | Publish Subscribe style |
| Option C: | Implicit Invocation style |
| Option D: | Event based style |
| 3. | What are elements that encapsulate processing and data in a system's architecture are referred to as ? |
| Option A: | Stakeholders |
| Option B: | Connectors |
| Option C: | Components |
| Option D: | Configurations |
| 4. | What is the role of connector which controls delivery of data called? |
| Option A: | Communication |
| Option B: | Coordination |
| Option C: | Conversion |
| Option D: | Facilitation |
| 5. | Bittorrent is an example of which well-known composite connector. |
| Option A: | Grid connectors |
| Option B: | Event-based connectors |
| Option C: | Peer-to-peer connectors |
| Option D: | Client-server connectors |
| 6. | What is a model characteristic open to more than one interpretation called? |
| Option A: | Ambiguous |
| Option B: | Accurate |
| Option C: | Static |

| | |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Option D: | Precise |
| 7. | What is the viewpoint that capture how logical entities are mapped onto physical entities called? |
| Option A: | Physical viewpoint |
| Option B: | Deployment viewpoint |
| Option C: | Concurrency viewpoint |
| Option D: | Behavioral viewpoint |
| 8. | What is the visualization in which each visualization communicates with each other visualization for updates called? |
| Option A: | Pull-based |
| Option B: | Push-based |
| Option C: | Peer-to-peer |
| Option D: | Master-slave |
| 9. | XML visualization is an example of which type of visualization? |
| Option A: | Graphical visualization |
| Option B: | UML visualization |
| Option C: | Textual visualization |
| Option D: | Hybrid visualization |
| 10. | Which architecture analysis goal ensures that different models do not contradict each other? |
| Option A: | Completeness |
| Option B: | Consistency |
| Option C: | Compatibility |
| Option D: | Correctness |
| 11. | Architecture trade off and Analysis method (ATAN) belongs to which architecture technique category? |
| Option A: | Inspection-and Review-based |
| Option B: | Model-based |
| Option C: | Simulation-based |
| Option D: | Hypothesis-based |
| 12. | Which framework does stdio used in C programming belong to? |
| Option A: | Pipe and Filter |
| Option B: | Publish Subscribe style |
| Option C: | C2 style |
| Option D: | Event based style |
| 13. | Which Non Functional Property is a quality that reflects a software system's ability to meet its performance requirements while minimizing its usage of the resources in its computing environment? |
| Option A: | Efficiency |
| Option B: | Complexity |
| Option C: | Scalability |
| Option D: | Heterogeneity |

| | |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14. | Which framework does java.io used in Java programming belong to? |
| Option A: | Pipe and Filter style |
| Option B: | C2 style |
| Option C: | Implicit Invocation style |
| Option D: | Event based style |
| 15. | Which Non Functional Property is the capability of a software system to be adapted to meet new requirements of size and scope? |
| Option A: | Efficiency |
| Option B: | Complexity |
| Option C: | Scalability |
| Option D: | Heterogeneity |
| 16. | Which architecture among the following is used for Space exploration? |
| Option A: | Decentralized architecture |
| Option B: | Peer to peer architecture |
| Option C: | Grid Protocol |
| Option D: | Robotics subsumption architecture |
| 17. | Which Non Functional Property is a software system's ability to satisfy new requirements and adjust to new operating conditions during its lifetime? |
| Option A: | Scalability |
| Option B: | Adaptability |
| Option C: | Complexity |
| Option D: | Heterogeneity |
| 18. | Which architecture among the following does Gnutella belong to? |
| Option A: | Decentralized architecture |
| Option B: | Peer to peer architecture |
| Option C: | Grid Protocol |
| Option D: | Robotics subsumption architecture |
| 19. | Which among the following is an example of Consumer electronics? |
| Option A: | Game suite |
| Option B: | GNU Compiler suite |
| Option C: | Boeing 747 Family |
| Option D: | Sony WEGA TVs |
| 20. | Which domain does Boeing 747 family product line belong to? |
| Option A: | Consumer electronics |
| Option B: | Compilers |
| Option C: | Aviation |
| Option D: | Video games |

| | |
|-------------------------------------|-------------------------------------------------------------------------------|
| Q2 (20 Marks Each) | |
| A | Solve any Two 5 marks each |
| i. | Differentiate between software architectural erosion and architectural drift. |
| ii. | Explain Domain Specific Software Architecture in Detail |
| iii. | What is C2 type architecture? |
| B | Solve any One 10 marks each |
| i. | Differentiate between perspective and descriptive architecture with example. |
| ii. | What are the different criteria for evaluating implementation frameworks? |

| | |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Q3. (20 Marks Each) | |
| A | Solve any Two 5 marks each |
| i. | Define product line architecture |
| ii. | What do you mean by stakeholder driven modeling |
| iii. | Explain how middleware and component framework induces architectural styles |
| B | Solve any One 10 marks each |
| i. | Explain with example software system mobility and architecture |
| ii. | Explain the Design issues for non-functional properties a) Efficiency and complexity. b) Scalability and heterogeneity |

Program: **Information Technology**
Curriculum Scheme: Rev2012
Examination: BE Semester VII
Course Code: ITC7052 and Course Name: Software Architecture

Time: 2 hour

Max. Marks: 80

| Question Number | Correct Option (Enter either 'A' or 'B' or 'C' or 'D') |
|------------------------|-----------------------------------------------------------------------|
| Q1. | D |
| Q2. | A |
| Q3. | C |
| Q4 | B |
| Q5 | C |
| Q6 | A |
| Q7 | B |
| Q8. | C |
| Q9. | C |
| Q10. | B |
| Q11. | A |
| Q12. | A |
| Q13. | A |
| Q14. | B |
| Q15. | C |
| Q16. | D |
| Q17. | B |
| Q18. | B |
| Q19. | D |
| Q20. | C |

University of Mumbai

Program: **Information Technology**
Curriculum Scheme: Rev-2012

Examination: BE
Course Code: ITC701
Time: 2 hour

Semester VII
Course Name: Software Project Management
Max. Marks: 80

| | |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Q1. | Choose the correct option for following questions. All the Questions are compulsory and carry equal marks |
| 1. | Which one is not applicable for successful factors for project execution? |
| Option A: | User involvement |
| Option B: | Executive management support |
| Option C: | Lack of user input |
| Option D: | Clear vision and objective |
| 2. | The newly added project management knowledge area is |
| Option A: | Time management |
| Option B: | Quality management |
| Option C: | Quantity Management |
| Option D: | Stakeholder management |
| 3. | Payback period is |
| Option A: | Total Investment/Net cash flow |
| Option B: | Partial Investment/Net cash flow |
| Option C: | Total Investment/Cash flow |
| Option D: | Total budget/Total investment |
| 4. | In which phase, Project charter is delivered? |
| Option A: | Define |
| Option B: | Planning |
| Option C: | Closure |
| Option D: | Execution |
| 5. | What is expected as the output of scope control process except |
| Option A: | Change Requests |
| Option B: | Project document updates |
| Option C: | Scope changes |
| Option D: | Work performance measurements |
| 6. | The project management activity which deals with examining the entire project process, methodologies used, budgets and the completion is term as: |
| Option A: | Project Outsourcing |

| | |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Option B: | Project budgeting |
| Option C: | Project Audit |
| Option D: | Project Contracting |
| | |
| 7. | CCPM stands for |
| Option A: | Critical chain project management |
| Option B: | Critical chain product management |
| Option C: | Critical Path Method |
| Option D: | Critical chain project mechanism |
| | |
| 8. | There are 4 activities A,B,C & D with activity time 4, 5,6 & 7 days respectively . Activities B & C has predecessor A. D has predecessor B &C. find the critical path. |
| Option A: | ABD |
| Option B: | AB |
| Option C: | ACD |
| Option D: | ABCD |
| | |
| 9. | An inter-task dependency in which two tasks must finish at the same time is called : |
| Option A: | Start-to-finish (FS) |
| Option B: | Finish-to-start (FS) |
| Option C: | Finish-to-finish (FF) |
| Option D: | Start-to-start (SS) |
| | |
| 10. | Subcontractors, consultants, travel, telephone, computer time, material costs, purchased parts, freight constitute to_____. |
| Option A: | Direct labor expense |
| Option B: | Direct nonlabor expense |
| Option C: | Overhead expense |
| Option D: | General and administrative expense |
| | |
| 11. | Using the LCC model a sensitivity analysis can be performed to show 1) best-case scenarios 2) most-likely scenarios 3) worst-case scenarios |
| Option A: | Only 1 is correct |
| Option B: | Only 1 and 3 are correct |
| Option C: | Only 1 and 2 are correct |
| Option D: | All 1,2 and 3 are correct |
| | |
| 12. | Project team quality implies that each person: 1) Is able and willing to meet those expectations 2) Knows the extent to which he/she meets the expectations 3) Knows Life cycle cost of the project. |
| Option A: | Only option, a is correct |
| Option B: | Options, a and c are correct |
| Option C: | Optios, a and b are correct |
| Option D: | All options a, b and c are correct |
| | |
| 13. | Which of the following is a ground rule for project team building? |
| Option A: | Perform frequent performance appraisals |
| Option B: | Ensure that each team member reports to his or her functional manager in addition to |

| | |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | the project manager |
| Option C: | Start early |
| Option D: | Try to solve team political problems |
| | |
| 14. | Major difficulties arise when multiple projects need to be managed in the functional organizational structure because of_____. |
| Option A: | The level of authority of the project manager |
| Option B: | Conflicts over the relative priorities of different projects in competition for limited resources |
| Option C: | Project team members who are focused on their functional specialty rather than on the project |
| Option D: | The need for the project manager to use interpersonal skills to resolve conflicts informally |
| | |
| 15. | Which one of the following means that the communication occurs? |
| Option A: | The transmission of knowledge |
| Option B: | The outputting of knowledge |
| Option C: | The presence of knowledge |
| Option D: | The transfer of knowledge |
| | |
| 16. | What is earned value analysis? |
| Option A: | Technique for analyzing cost and schedule together |
| Option B: | Form of trend analysis |
| Option C: | form of status reporting. |
| Option D: | A method of information distribution. |
| | |
| 17. | The basic approaches to analyzing and assessing project risk are _____ |
| Option A: | Qualitative and Quantitative analysis |
| Option B: | Project and product analysis |
| Option C: | Process and product analysis |
| Option D: | Process and prototype analysis |
| | |
| 18. | Project risk management provides warning_____. |
| Option A: | Before implementation |
| Option B: | After implementation |
| Option C: | Before and after implementation |
| Option D: | which is randomly generated either before or after implementation |
| | |
| 19. | Which is not phase of Project Procurements ? |
| Option A: | Selection |
| Option B: | Specification |
| Option C: | Contracting |
| Option D: | Designing |
| | |
| 20. | Performed when a project is canceled or ends prematurely. It describes the reasons for cancellation or failure and documents the deliverables that were completed. |
| Option A: | Starvation |
| Option B: | Close procurements |
| Option C: | post-mortem analysis |
| Option D: | post-project review |

| Q2 . (20 Marks Each) | Solve any Four out of Six | 5 marks each |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------|
| A | What is project infrastructure? | |
| B | Why do we need a project charter ? | |
| C | Why must a project's scope be tied to the WBS? | |
| D | Differentiate CPM and PERT. | |
| E | What are the advantages of including milestones in the WBS with respect to time management? | |
| F | List three main steps that you would like to bring in practice to effectively reduce/control the cost of your project. | |

| Q3. (20 Marks Each) | Solve any Four out of Six | 5 marks each |
|--------------------------------|---------------------------------------------------------|---------------------|
| A | Explain IT project quality plan. | |
| B | What is the role of PMIS in Project Management? | |
| C | Explain the three categories of communication. | |
| D | Explain the fishbone diagram. | |
| E | Describe procurement processes. | |
| F | What are the steps involved in terminating the project? | |

University of Mumbai

Program: **Information Technology**
Curriculum Scheme: Rev-2012

Examination: BE
Course Code: ITC701
Time: 2 hour

Semester VII
Course Name: Software Project Management
Max. Marks: 80

| Question Number | Correct Option (Enter either 'A' or 'B' or 'C' or 'D') |
|-----------------|--------------------------------------------------------------|
| Q1. | C |
| Q2. | D |
| Q3. | A |
| Q4 | B |
| Q5 | C |
| Q6 | C |
| Q7 | A |
| Q8. | C |
| Q9. | C |
| Q10. | B |
| Q11. | D |
| Q12. | C |
| Q13. | C |
| Q14. | B |
| Q15. | D |
| Q16. | A |
| Q17. | A |
| Q18. | A |
| Q19. | D |
| Q20. | C |

Program: BE Information Technology
Curriculum Scheme: Rev2012
Examination: Final Year Semester VII
Course Code: ITC7055 and Course Name: Usability Engineering

Time: 1 hour

Max. Marks:80

Note to the students: - All the Questions are compulsory and carry equal marks.

| | |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Q1. | _____ means “The system is good enough to satisfy the need and all requirements of the users and other potential stakeholders, such as user’s clients and managers”. |
| Option A: | System Acceptability |
| Option B: | Learnability |
| Option C: | Efficiency |
| Option D: | Memorability |
| Q2. | “Having fewer options will often mean better usability because the users can then concentrate on understandings those fewer options”. Select correct usability slogan related to the above statement. |
| Option A: | Your Best Guess Is Not Good Enough |
| Option B: | The User Is Always Right |
| Option C: | User Are Not Designers |
| Option D: | Less Is More |
| Q3. | ___ is a usability attribute that refers to how easy a system is to learn so that the user can rapidly start getting some work done with the system. |
| Option A: | Memorability |
| Option B: | Learnability |
| Option C: | Error |
| Option D: | Efficiency |
| Q4. | ___ is a relatively new approach to designing products. It successfully involves the stakeholders, designers, researchers, and end-users in the design process to help ensure that the end product meets the needs of its intended user |

| | |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | base. |
| Option A: | Serial design |
| Option B: | parallel design |
| Option C: | Participatory design |
| Option D: | Complete Design |
| | |
| Q5. | _____ interfaces include higher dimensionality with more media types and that they will be highly portable and personal and noncommand user interfaces. |
| Option A: | Line oriented |
| Option B: | Full-Screen |
| Option C: | Graphical |
| Option D: | Next generation |
| | |
| Q6. | Cutting down on the number of features is called _____. Since the result is a narrow system that does include in depth functionality, but only for a few selected features. |
| Option A: | Vertical prototyping |
| Option B: | Complex prototyping |
| Option C: | Simple prototyping |
| Option D: | Horizontal prototyping |
| | |
| Q7. | As a part of user-centered design the terminology in user interface should be based on the users' language and not on system oriented terms. As far as possible, dialogues should be in the users' native language and not in a foreign language. The usability Heuristic related with the above statements is_____ |
| Option A: | Help and Documentation |
| Option B: | Minimize User Memory Load |
| Option C: | Speak the users' Language |
| Option D: | Consistency, Feedback |
| | |
| Q8. | The good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for |

| | |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | them and present users with a confirmation option before they commit to the action. The usability Heuristic related to it is _____. |
| Option A: | Recognition rather than recall |
| Option B: | Flexibility and efficiency of use |
| Option C: | Aesthetics and minimalist design |
| Option D: | Error prevention |
| | |
| Q9. | A method that does not require human participants serving as test users is the |
| Option A: | Usability test. |
| Option B: | Pluralistic walkthrough. |
| Option C: | Rubin's comparison test. |
| Option D: | Heuristic evaluation. |
| | |
| Q10. | If the test plan calls for a _____ approach with very few test users, one should not choose users from outlier groups but should take additional care to involve average users. |
| Option A: | uncharged usability |
| Option B: | pivot usability |
| Option C: | in-charged usability |
| Option D: | discount usability |
| | |
| Q11. | Questionnaires and _____ are also useful methods for studying how users use systems and what features they particularly like or dislike. |
| Option A: | Heuristic evaluation |
| Option B: | Face reading |
| Option C: | Interviews |
| Option D: | Wizard of OZ |
| | |
| Q12. | _____ is a question of whether the usability test in fact measures something of relevance to usability of real products in real use outside the laboratory. |
| Option A: | Validity |
| Option B: | Reliability |

| | |
|-----------|----------------------------------------------------------------------------------------------------------|
| Option C: | Visualization |
| Option D: | Availability |
| | |
| Q13. | Which is not a type of usability standard _____ |
| Option A: | National and international standards |
| Option B: | Industry standards |
| Option C: | In-house standards |
| Option D: | IEEE standards |
| | |
| Q14. | The most famous analytic method is known as GOMS stands for _____ |
| Option A: | good, operators, methods, and selection rules |
| Option B: | Goals of methods, and selection rules |
| Option C: | goals, operators, module, and selection rules |
| Option D: | goals, operators, methods, and selection rules |
| | |
| Q15. | The specification of window and dialog box layouts for graphical user interfaces can be stored in _____. |
| Option A: | user databases |
| Option B: | admin databases |
| Option C: | resource databases |
| Option D: | service databases |
| | |

Q.2 a) Explain Usability Testing.

Or

Q.2 b) Write short note on

i) User Feedback

ii) Iterative Design

Q.3 a) Design website for online payment of college fee, Explain which usability concepts are required to consider while designing and testing of website.

Or

Q.3 b) Explain following Usability Heuristics with example.

- i) Simple and Natural Dialogue
- ii) Speak the users' Language

Program: BE Information Technology

Curriculum Scheme: Rev2012

Examination: Final Year Semester VII

Course Code: ITC 7055 and Course Name: Usability Engineering

Time: 1 hour

Max. Marks:

| Question | Correct Option (Enter either 'A' or 'B' or 'C' or 'D') |
|-----------------|-----------------------------------------------------------------------|
| Q1. | A |
| Q2. | D |
| Q3. | B |
| Q4 | C |
| Q5 | D |
| Q6 | A |
| Q7 | C |
| Q8. | D |
| Q9. | D |
| Q10. | D |
| Q11. | C |
| Q12. | A |
| Q13. | D |
| Q14. | D |
| Q15. | C |

University of Mumbai

Examinations Commencing from 15th June 2021

Program: **Information Technology**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC704 and Course Name: _Wireless Technology

Time: 2 hour

Max. Marks: 80

| | |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Q1. | Choose the correct option for following questions. All the Questions are compulsory and carry equal marks |
| 1. | The maximum rate at which data can be transmitted over a given communication path or channel under given conditions. |
| Option A: | Bandwidth |
| Option B: | Channel Capacity |
| Option C: | Infrared |
| Option D: | FDM |
| 2. | Method of transmitting radio signals by rapidly switching a carrier among many frequency channels using a pseudorandom sequence known to both transmitter and receiver. |
| Option A: | DSSS |
| Option B: | FHSS |
| Option C: | Parity Check |
| Option D: | CRC |
| 3. | A communication standard that is designed to allow mobile device users to move from one network to another while maintaining a permanent IP address |
| Option A: | Mobile IP |
| Option B: | Handoff |
| Option C: | GPRS |
| Option D: | Hamming Code |
| 4. | Temporary database which updates whenever new Mobile Station(MS) enters its area which is used to assign a TMSI (Temporary Mobile Subscriber Identity) |
| Option A: | HLR |
| Option B: | VLR |
| Option C: | IMSI |
| Option D: | AUC |
| 5. | What is function of OMC in GSM Architechture? |
| Option A: | Switching |
| Option B: | Registration of Users |
| Option C: | Maintenance and Operations |
| Option D: | Authentication |
| 6. | Which multiple access is achieved by allocating different time slots for the different users. |

| | |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Option A: | TDMA |
| Option B: | CDMA |
| Option C: | FDMA |
| Option D: | FGMA |
| | |
| 7. | Piconets in bluetooth have a minimum of two and a maximum of _____ Bluetooth peer devices. |
| Option A: | Five |
| Option B: | Eight |
| Option C: | Nine |
| Option D: | Ten |
| | |
| 8. | An unused part of the radio spectrum between radio bands for purpose of preventing interference |
| Option A: | Interference factor |
| Option B: | Guard Band |
| Option C: | Spectrum |
| Option D: | Demultiplexer |
| | |
| 9. | _____ is the anticipation of unauthorized access or break to computers or data by means of wireless networks. |
| Option A: | Wireless access |
| Option B: | Wireless security |
| Option C: | Wired Security |
| Option D: | Wired device apps |
| | |
| 10. | Which charging method is the network classified under different traffic classes and each class has different capacities and involves different charges |
| Option A: | Expected Capacity |
| Option B: | Packet |
| Option C: | Metered |
| Option D: | Paris Metro |
| | |
| 11. | In a _____ handoff the mobile station can communicate with two base stations at the same time |
| Option A: | Hard |
| Option B: | Soft |
| Option C: | Medium |
| Option D: | Rare |
| | |
| 12. | What is frequency reuse? |
| Option A: | Process of selecting and allocating channels |
| Option B: | Process of selection of mobile users |
| Option C: | Process of selecting frequency of mobile equipment |
| Option D: | Process of selection of number of cells |
| | |
| 13. | Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs? |
| Option A: | IEEE 802.16 |
| Option B: | IEEE 802.3 |

| | |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Option C: | IEEE 802.11 |
| Option D: | IEEE 802.15 |
| | |
| 14. | Which property of OFDMA system allows adjacent subcarriers to be used without interference? |
| Option A: | Orthogonality |
| Option B: | Orthodoxy |
| Option C: | Octagonality |
| Option D: | Originality |
| | |
| 15. | Which of the following standard committee specifies Bluetooth and other Personal Area Networks (PAN)? |
| Option A: | IEEE 802.11b |
| Option B: | IEEE 802.15 |
| Option C: | IEEE 802.11g |
| Option D: | IEEE 802.16 |
| | |
| 16. | _____ carries digitally encoded user data. |
| Option A: | Traffic channels |
| Option B: | Control channels |
| Option C: | Signalling channels |
| Option D: | Forward channels |
| | |
| 17. | In transmission, the channel capacity is shared by both communicating devices at all times. |
| Option A: | Simplex |
| Option B: | Half-duplex |
| Option C: | Full-duplex |
| Option D: | Automatic |
| | |
| 18. | Of the total channels present in the cellular system, what is the percentage of voice and control channels? |
| Option A: | 95% voice channels, 5% control channels |
| Option B: | 5% voice channels, 95% control channels |
| Option C: | 50% voice channels, 50% control channels |
| Option D: | 25% voice channels, 75% control channels |
| | |
| 19. | LMDS is an acronym for which of the following? |
| Option A: | Link multipoint digital service |
| Option B: | Local multipoint distribution service |
| Option C: | Low-speed multiple data streams |
| Option D: | Local multimedia distribution service |
| | |
| 20. | The signal quality of the calls is constantly monitored by the base station, when the quality of the calls drops below a certain specified level. The base request the MTSO to try and find a better cell site |
| Option A: | Hand-off |
| Option B: | Cell splitting |
| Option C: | Roaming |

| | |
|-----------|-----------------|
| Option D: | Frequency reuse |
|-----------|-----------------|

| | |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Q2 (20 Marks) | |
| A | Solve any Two 5 marks Each |
| i. | Elaborate Electromagnetic Spectrum with neat diagram. |
| ii. | State the differences between Hard Handoff and Soft Handoff. |
| iii. | Discuss role of WEP in wireless security |
| B | Solve any One 10 marks Each |
| i. | Consider a cellular network with 64 cells. Each hexagonal cell has an approximate area of 10km^2 . The total number of radio channels allotted for the network is 336. Find the total number of channels of the network, if i) $N = 4$ ii) $N = 7$ iii) $N = 12$. Where N denotes cell reuse. |
| ii. | Discuss applications of Zigbee. Explain the IEEE 802.15.4 topology models |

| | |
|---------------------------------|--------------------------------------------------------------------------------------------------------|
| Q3. (20 Marks) | |
| A | Solve any Two 5 marks Each |
| i. | Explain Frequency Hopping Spread Spectrum while also specifying any real-life application of the same. |
| ii. | State differences between 3G and 4G technology. |
| iii. | Describe MMDS with respect to WLL systems |
| B | Solve any One 10 marks Each |
| i. | Draw and explain the IEEE 802.11 WLAN Architecture |
| ii. | What is scatternet? Also using neat diagram explain Bluetooth connection establishment states. |

University of Mumbai

Program: **INFORMATION TECHNOLOGY**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: C704 and Course Name: Wireless Technology

Time: 2 hour

Max. Marks: 80

| Question Number | Correct Option (Enter either 'A' or 'B' or 'C' or 'D') |
|------------------------|-----------------------------------------------------------------------|
| Q1. | B |
| Q2. | B |
| Q3. | A |
| Q4 | B |
| Q5 | C |
| Q6 | A |
| Q7 | B |
| Q8. | B |
| Q9. | B |
| Q10. | D |
| Q11. | B |
| Q12. | A |
| Q13. | C |
| Q14. | A |
| Q15. | B |
| Q16. | A |
| Q17. | C |
| Q18. | A |
| Q19. | B |
| Q20. | C |