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| **1** | Describe the Software Selection Maturity Scale? What is its relationship to technology adoption in the Enterprise?  Software Selection Maturity Scale (SSMS) is a 5-level scale which measures the maturity of a given enterprise for its technology evaluation and acquisition process. Many enterprises or their parts perform low down in the scale.  The following shows the diagram of the above-mentioned scale | 10 Marks |

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| **2** | Compare and contrast the monolithic and SOA models of enterprise application software. Describe the benefits of a SOA composition approach to application construction.   |  |  | | --- | --- | | Monolithic | SOA | | Monolithic software is small number of large applications providing many diverse functions on a widely variety of data sources. |  | | Problems arose such as the cost of maintaining large and complex systems. Lack of flexibility also existed in regards to providing solutions. |  | | Monolithic applications have been decomposed into smaller single purpose services. |  | |  |  | |  |  | |  |  | |  |  | | 10 Marks |

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| **3** | Why have enterprises moved towards web technologies for service software construction? What are the principal benefits? | 10 Marks |

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| **4** | What are the advantages and disadvantages of HTTP statelessness as the basis of a service application protocol tier? | 10 Marks |

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| **5** | Describe the architectural constraints of the REST architectural pattern | 10 Marks |

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| **6** | Explain the relationship between resources, models and views? What is meant by view aggregation? | 10 Marks |

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| **7** | Describe the five RESTful operations, giving examples using HTTP. What is meant by idempotence? Mention which of the REST operations are idempotent and why. | 10 Marks |

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| **8** | Explain the problem of failure propagation in SOA systems. What are the desirable characteristics of an API versioning system? What are the two kinds of API compatibility? | 10 Marks |

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| **9** | Describe the major elements of the logical data model. Describe how it abstracts the details of database access in the application tier. | 10 Marks |

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| **10** | Describe in detail the pathology of a SQL injection exploit. What should the application developer to avoid this kind avoid this kind of vulnerability. | 10 Marks |