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| It is always important to determine the viability of an idea ensuring that a project is technically and economically justifiable. From your perspective as a project manager, identify the importance of feasibility analysis for your organization. Enlist and explain the different types of feasibility study that you would conduct pertinent to the various constraints related to your proposed project. (2+8) |
| You intend to develop a working replication of a product that has to be engineered offering a small-scale facsimile and then progressively develop the final product. Name and explain the software development model you could adopt in this case. Also highlight the features of any other model that would be applicable.  (5+5) |
| Your company wants to develop software with agility. You are aware that there are various software development methodologies under the agile manifesto following few common principles. Highlight and explain the twelve most important principles. (10) |
| Draw the class diagram for a courseware system that is used to manage courses and classes. The Institute offers courses in a variety of areas such as learning management techniques and software languages. Each course is made up of a list of topics. Lecturers are assigned courses to teach according to their area of specialization and availability. The Institute maintains calendar of the courses taught and assigns lecturer every year. There is also a group of course administrators in the organization who manage the courses including course content, assignment of lecturers to the courses and defining the course schedule. (10) |
| For the following code snippet, identify the classes and explain the concept of inheritance and polymorphism based on this scenario. (5+5)  **class** Bank{  **float** getRateOfInterest(){**return** 0;}  }  **class** SBI **extends** Bank{  **float** getRateOfInterest(){**return** 8.4f;}  }  **class** ICICI **extends** Bank{  **float** getRateOfInterest(){**return** 7.3f;}  }  **class** AXIS **extends** Bank{  **float** getRateOfInterest(){**return** 9.7f;}  }  **class** Test{  **public** **static** **void** main(String args[]){  Bank b;  b=**new** SBI();  System.out.println("SBI Rate of Interest: "+b.getRateOfInterest());  b=**new** ICICI();  System.out.println("ICICI Rate of Interest: "+b.getRateOfInterest());  b=**new** AXIS();  System.out.println("AXIS Rate of Interest: "+b.getRateOfInterest());  }   . |

For each of the following systems, which attributes of quality do you think would be most important and the least important?

1. A web-based banking system, enabling the user to do all aspects of banking on-line
2. An air traffic control system
3. A program that will enable users to view digital images or movies stored in all known formats
4. A system to manage the work schedule of nurses that follow all the constraints and regulations in force at a particular hospital
5. An application that allows you to purchase any item seen while watching television.

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| Consider the following online shopping portal-  A customer visits online shopping portal. A customer may buy item or just visit the page and logout. The customer can select a segment, than a category and brand to get different products in the desired brand.  The customer can select product for purchasing. The process can be repeated for more items. Once the customer finishes selecting the product/s, the cart can be viewed. If the customer wants to edit the final cart it can be done here. For final payment the customer has to register with the site, else the customer must use the login page to proceed. Final cart is submitted for payment and card details and address details are to be confirmed with customer. Customer is confirmed with the shipment id and delivery of goods within 15 days. Draw a detailed class diagram for the above case study. |
| Which class/set of classes can illustrate polymorphism in the following code? Explain your answer with valid reason.  abstract class student  {  public : int marks;  calc\_grade();  }  class topper:public student  {  public : calc\_grade()  {  return 10;  }  };  class average:public student  {  public : calc\_grade()  {  return 20;  }  };  class failed{ int marks; }; |
| For each of the following documents, indicate in which phase(s) of the software life cycle it is produced: final user manual, architectural design, SQA plan, module specification, source code, statement of work, test plan, preliminary user manual, detailed design, cost estimate, project plan, test report, documentation.  final user manual  arch design  SQA plan  Module specification  Source code  Statement of work  Test plan  Prelim, user manual  Detailed design  Cost estimate  Project plan  Test report  Documentation |
| Explain how the principles underlying agile methods lead to the accelerated development and deployment of software. |