Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages : 04**

Total No. of Questions : 15

MBA (2015 to 2017)   (Sem.–3)
SOFTWARE ENGINEERING
Subject Code : MBA-983
M.Code : 70761

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A contains SIX questions carrying FIVE marks each and students has to attempt any FOUR questions.**

2. **SECTION-B consists of FOUR Subsections : Units-I, II, III & IV. Each Subsection contains TWO questions each carrying EIGHT marks each and student has to attempt any ONE question from each Subsection.**

3. **SECTION-C is COMPULSORY and consists of ONE Case Study carrying EIGHT marks.**

SECTION-A

1. What is Software Requirement Specification?

2. What is spiral model?

3. Explain SDLC

4. What is Black Box Testing?

5. What is White Box Testing?

6. What is Batch Processing?

SECTION-B

UNIT-I

7. Discuss the importance of Software Engineering in present competitive world.

8. Discuss various software engineering challenges. Explain by giving examples.

UNIT-II

9. Write notes on :

    a. Data Flow Diagrams

    b. Data Dictionary

10. Write notes on :

    a. ER Diagrams

    b. COCOMO model

UNIT-III

11. Discuss the difference between structured design and object oriented design.

12. Discuss the difference between modular design methodology and object oriented methodology.

UNIT-IV

13. Write notes on :

    a. Integration Testing

    b. Validation Testing

14. Write notes on :

    a. Testing Strategies

    b. Unit Testing

SECTION-C

15. **Case Study :**

    Just as everyone today has (or wants) a mobile phone, every business wants mobile apps. Companies of all stripes realize that the target audience for their applications has shifted from users of personal computers to users of mobile devices. Businesses are frantically struggling to become more mobile, and they want them developed in a very short time frame. That's not so easy. Developing successful mobile apps poses some unique challenges. The user experience on a mobile device is fundamentally different from that on a PC. There are special features on mobile devices such as location-based services that

give firms the potential to interact wish customers in a meaningful new ways. Firms need to be able to take advantage of those features while delivering an experience that is appropriate to a small screen. There are multiple mobile platforms to work with, including iOS, Android, and Windows 8, and a firm may need a different version of an application to run on each of these. System- builders need to understand how, why, and where customers use mobile devices and how these mobile experience change business interactions and behaviour. You can't just port a website or desktop application to a smartphone or tablet. It's a different systems development process. Intercontinental Hotels Group (1HG), which includes Inter Continental Hotels, Crowne Plaza Hotels & Resorts, and Holiday Inns clearly needs a mobile app to stay competitive. The Group must compete with other hotel chains and also online services with mobile apps such as Booking.com, Orbitz.com, and Hotels.com which handle reservations for hundreds of thousands of hotels. Mobile devices are quickly becoming the preferred method of booking reservations online, and IHG doesn't want to miss the opportunity. Guests can use IHG mobile app, IHG Mobile, to book room at any of IHG's 4,800 hotels. In addition, the IHG Mobile app Includes customer reviews, photos of the hotel and surrounding neighbourhood, maps, direction, to nearby locales, push notifications, access to special corporate rates, and'the ability to manage points for the IHG Reward, program. The app is available for 8 different mobile platforms. Maintaining this app requires constant teamwork between marketing and mobile applications developers. Bill Keen. Director of IHG mobile solution works with a team of eight product managers and 12information technology specialists on IHG Mobile. The 12 mobile developers have expertise in mobile application design and building API'S that access IHG's transaction systems and public Information services such as weather and maps. An API is an application programming interface that specifies how software components should interact. Both groups are housed in the same budding and have face-to-face meetings every morning to test new features and discuss next steps. The team works on app features and enhancements in two-week sprints. The product managers select the next mobile app feature to work on and the mobile application developers then inform them what can be done in the next two-week sprint. The product managers make the final decision about what to do in that time frame. Both groups use an Agile development process and operate as a single unit sharing responsibilities and accountability. Supporting the team are an information architect and graphic designer. They analyze what hotel guests need from the app, based on customer feedback, and establish the Interactive pattern design, photo and graphics. The design is then handed to the developers to code into software programs and deploy. Mobile apps should not be built for the sake of going mobile but for genuinely helping the company become more successful. The mobile app will need to be connected in a meaningful way to the systems that power the business. Alex and Ani learned this when it developed a mobile app for employees in its stores to use to help customers make selections, and then complete the purchase transaction. Alex and Ani, founded in 2004, designs. Produces and sells high-quality, eco-friendly jewelry in the U.S. using artisanal techniques, and is dedicated to helping Its customers find inner peace and positive energy. Having Customers in Alex and Ani stores wait on long checkout lines ran counter to the company's philosophy and brand Image. Working with Mobiquity a developer of enterprise mobile solutions, Alex and Ani created a mobile Point-of-sales and payment solution where Alex and Ani's Bangle Bartenders can swipe credit cards, scan Bar codes and print, allowing a customer to sign and receive a copy of the credit-card receipt at the time of purchase while they are

in the store aisles. They do not have to wait in line for a cashier. The mobile app helps store sales staff to be more attentive to customers while reducing time to pay for purchases. This enhances the in-Store customer experience, improves brand perception, and provides better customer service, thereby increasing sales revenues. The starting point for developing a mobile app is to identify the mobile moments (occasions when someone would pull out a mobile device to get something done) where a mobile app would be especially helpful. Alex and Ani's chief technology officer Joe Lezon and head of retail operations Susan Soards mapped out the mobile moments where employees interact with customers. They then specified the context—the situation, preferences, and attitudes of customers and employees in these mobile moments. Lezon and Soards determined where physically in the store mobile moments occur, how long they last the stage of the checkout process, what information is available, and customer expectations. The second step is to design the mobile engagement. Business people, designers, and app developers get together to decide how to engage a customer during mobile moments, and which moments benefit both the customer and the company. A mobile app for moments that benefit both customers and the company is more likely to be successful. Alex and Ani had a small team draw pictures to design the mobile engagement, mapping out exactly how an employee would use an iPod Touch application and a credit card reader/printer linked directly to the company's point-of-sales system to engage customers. The design specifications included screen layouts, the sequence of events, and transactions needed at each step. The third step is to engineer people, processes, and platforms to deliver the mobile experience. An effective mobile app often requires changing the firm's internal systems, such as those for inventory management, customers, and reservations. Changing those systems typically requires new API's and tuning the systems to respond more quickly to requests; such changes account for 80 percent of the cost of most mobile projects. Alex and Ani connected their mobile app to the company's point-of-sale systems as well as to systems with detailed product information. The fourth final step is to monitor performance and improve outcomes, Alex and Anil analyzed its mobile retail application to determine the length of time for checkouts, whether the app reduces check out time from minutes to seconds and which customers' complete transactions.

Questions :

a) What management, organization and technology issues need to be addressed when building a mobile application?   3

b) How does user requirement definition for mobile applications differ from traditional systems analysis?   3

c) Describe Alex and Ani's sales process before and after the mobile application was deployed.   2

NOTE : Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC case against the Student.