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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

February / March 2023 Semester End Main Examinations

Programme: B.E. **Semester: V**
Branch: Computer Science and Engineering **Duration: 3 hrs.**
Course Code: 22CS5HSSPM **Max Marks: 100**
Course: Software Project Management and Finance **Date: 23.02.2023**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

UNIT - I

1 a) Discuss the characteristics of a Project. **05**

b) An initial investment of Rs.8,320 thousand on plant and machinery is expected to generate cash inflows of Rs.3,411 thousand, Rs.4,070 thousand, Rs.5,824 thousand and Rs.2,065 thousand at the end of first, second, third and fourth year respectively. **10**

i. Calculate the Net Present Value (NPV) of the investment if the discount rate is 18%.
ii. Should the equipment be purchased according to NPV analysis?

c) Assume yourself as a Project Manager of IT Company. A new project has been assigned to your team for developing a website for your new customer who has started his business for retail shopping. Analyze your role as a project manager to ensure smooth operation of the project completion. Depict the sequence of hierarchy you will follow for ensuring credibility with the tie-up company and your customer. **05**

OR

2 a) Define Programs, Portfolio, Mission, Goals and Objective with an example for each. **05**

b) Due to increased demand, the management Company is considering to purchase a new equipment to increase the production and revenues. The useful life of the equipment is 10 years and the company's maximum desired payback period is 4 years. The inflow and outflow of cash associated with the new equipment is given below: **10**

The initial cost of equipment	Rs.47,500
<u>Annual cash inflow:</u>	
Sales	Rs.85,000
<u>Annual cash outflow:</u>	
Cost of ingredients	Rs.35,000
Salaries expenses	Rs.10,500
Maintenance expenses	Rs.2,000

Should the Company purchase the new equipment? Use payback method for your answer.

c) Suppose Company 'A' wants to start its new branch in Rajastan. Analyse how the Environment affects the project in a Company. (Hint: based on working environment, Team coordination, transportation etc.) **05**

UNIT - II

3 a) Write a Project Plan to design a web application to support online classes for your institution. **10**

b) Waleed just purchased a new house for Rs. 120,000. He was able to make a down payment equal to 25% of the value of the house; the balance was mortgaged. The rate by the bank is 10% compounded annually. The mortgage has a 20 year amortization period (this means that payments are calculated assuming it will take 20 years to pay off the loan). **10**

i. What will be the size of the payments by factor formula?
ii. What will be the balance remaining on the mortgage after 5 years?

UNIT - III

4 a) Design a Project charter for E-commerce website development system. **05**

b) Consider a company consisting of different teams such as an advertising team, a development team, and an IT department. Construct a Priority matrix and analyze how the triple constraints are affected with respect to the importance that can be given to the teams. Justify your answer. **05**

c) Write the vision and scope document for an online book store management system. **10**

UNIT - IV

5 a) i) Assume you are organizing your Mother's Birthday Party at your home. You need to order Cool drinks and Starters for 100 guests. The party will be from 7:00 PM to 10:00 PM. Number of Starters that will be served are 100. Determine the Total cost of the drinks and starters for the Birthday Party (Cool drinks and Starters) using Parametric Estimate. **10**
Note: Cool drinks: Rs. 20 each, Starters: Rs. 40 each.

ii) You are implementing a form in the BMSCE website with the following data elements. 30 SE,20 BE and 10 DE. Calculate the Adjusted Specification Effort(ASE) for a Web form. Also list and explain the classification of data elements of ASE.

b) As the company XXXX has a project with two tasks, building a fence and laying sod. The initial cost baseline is: **10**

ID	Task	Start date	End Date	Budget
100	Build Fence	Feb. 10	Feb. 20	$4,000
200	Lay Sod	Feb. 12	Feb. 25	$3,000
TOTAL				$7,000

Let's say it's Feb. 15. Determine the Cost Performance Index for the project. Assume the percentage of completion as 75% and 10% respectively.

OR

6 a) i) Assume that you are planning to develop a website for the online conference on effects of Digital Revolution, you analyze the scope and decide that you need 2 login forms for name and addresses, 3 forms for the referee's background and 4 forms to select the papers. Two forms to print out the paper titles when the referee has completed the assignment. As to data entities, we estimate 40 are associated with the referee's name and address, 10 with their qualifications, and 20 with each paper. Calculate the Programming Entities and Total Effort. **10**

ii) Assume that you are organizing Kitty party for your friends at home. You are planning to invite 15 friends for the party. Calculate the number of pizzas you need to order for 15 guests using Cost estimation formula.

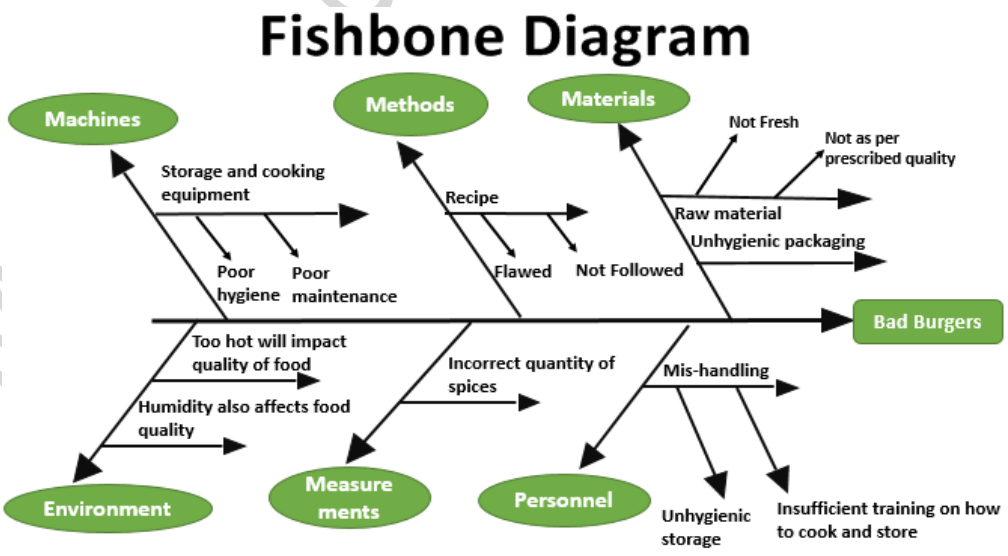
b) Discuss the different types of cost estimates. **05**

c) A project manager estimates the time to develop a new project as follows: Most likely, the project takes 4 months. In the worst case, the completion takes 8 months, if there are no hurdles, the completion takes 1 month. Calculate the PERT Mean and Project Schedule Estimate and Discuss about the Confidence Level. **05**

UNIT - V

7 a) Discuss the importance of Control charts. **08**
The goal =10 errors per week, upper limit=13 errors per week, lower limit= 7 errors per week.
Considering the above data:
i) Create a control chart with one data point outside the control limits.
ii) Create a control chart to represent "The rule of seven".
Support your diagram with explanation

b) **08**



Analyze how the above fishbone diagram helps in identifying the cause and effect for the delay in custom orders and also explain the different notations used in the above diagram.

c) Define risk. Explain positive risk. **04**

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