Total No. of Questions : 12]

SEAT No. :

P3301

[Total No. of Pages : 4

[4959]-11

B.E. (Civil)

C : TQM and MIS in Civil Engineering (Elective - II)

(2008 Pattern)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6 from Section- I and Questions 7 or 8 , 9 or 10, 11 or 12 from Section-II.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right side indicate full marks.***
5) ***Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.***
6) ***Assume suitable data if necessary.***

SECTION - I

Q1) a) Discuss any 9 factors which affect the quality of concrete used in RCC work. **[9]**

b) Explain with examples, why globalization in general and entry of multinational companies in the Indian construction market in particular are forcing Indian firms to re-define their quality policy. **[9]**

OR

Q2) a) Explain contributions from Deming, Juran and Crosby in the domain of quality with appropriate examples. **[9]**

b) Recently, in Maharashtra in a particulars city, many floors of existing buildings collapsed. What were the reasons? How these can be prevented? Explain. **[9]**

Q3) a) Differentiate with examples between **[8]**

i) Quality control and quality assurance.

ii) TQC and TQM

P.T.O.

b) Enlist any 4 ISO principles of 9001 series and explain their application in the context of a construction organisation constructing roads. **[8]**

OR

Q4) a) What is TQM? How is it different from other methods? What are its advantages? **[8]**

b) Explain with practical examples how the 8 principles of ISO : 9001 enable the organisation to improve its construction processes, which otherwise would not happen. **[8]**

Q5) a) What is Kaizen? How Kaizen concept is useful in TQM applied to construction sector. Explain with examples. **[8]**

b) Determine 6 Sigma level based on the following data. **[8]**

Sr.No.	Length of PQC(M) Cast	Defective Length with cracks, distresses (M)
1	200	nil
2	150	nil
3	300	75
4	400	25
5	500	35
6	150	10
7	250	nil
8	350	25
9	425	30
10	175	nil

OR

Q6) a) Explain following defects with examples : **[6]**

i) Rework

ii) Scrap

iii) Backlogs

b) Explain PDCA cycle application in formwork activity. **[4]**

c) Explain pre-requisites for achieving success in TQM programs. **[6]**

SECTION - II

Q7) a) With any practical example explain the 3 basic interacting components of a dynamic system. **[8]**

b) Define MIS. Explain why MIS is necessary. Discuss limitations and pluspoints of an MIS developed for a contractor's organisation bidding for road projects. **[10]**

OR

Q8) a) With practical examples explain basic foundation concepts of information systems and information technologies used in civil engineering. **[8]**

b) Develop a decision support system for a government client executing buildings for economically weaker sections of society through a contract system. **[10]**

Q9) a) Explain use of an MIS in the operational management of a consultant's organisation, working as client's representative on a road project (expressway). **[8]**

b) "PRRT software is a boom to the total quality management". Justify the above statement by explaining salient features of the above software. **[8]**

OR

Q10) a) Define "e-business". Discuss achievement of the following objectives based on a flow diagram. **[9]**

i) Promotion of enterprise internal stakeholder communication, co-ordination, collaboration.

ii) Implementing e-commerce systems with external customers and suppliers.

iii) Re-engineering of internal processes.

b) Explain relationship between operational management and an MIS with the help of practical examples. **[7]**

Q11) a) As a project manager of a building construction project you are required to integrate various internal departments, external customers, other stake holders such as suppliers of various resources, financiers etc in a real time online communication, for increasing the effectiveness of working. Is there any software which helps you to do so? Is it an MIS? Why? What are its capabilities and how is it useful to you? Explain with examples. **[10]**

b) Discuss development processes and information technologies as inputs to the information systems, with examples from construction projects for each. **[6]**

OR

Q12) a) Explain the type of information necessary to develop an MIS for a construction organisation constructing a bungalow, in order to minimize its inventories and increase the turnover. **[8]**

b) What are expert systems? How are they used on building projects? How are they developed. **[8]**