| Subject<br>Time: 10<br>Instructio<br>1.<br>2.   | GUJARAT TECHNOLOGIO<br>BE - SEMESTER-V(New) • EXAMIN<br>Code:2151506<br>Name:Design of Facilities Layout<br>0:30 AM to 01:00 PM  | NATION – WINTER 2016<br>Date:24/11/2016<br>Total Marks: 70 |
|---|--|--|
|   | t the RIGHT Answer:( each of one mark)   | 14   |
|   |  | ons is most effectively utilized" is known as              |
| ope<br>a.<br>b.<br>c.<br>d.   | all the processing equipment and machines are a crations of a product the layout is known as  Product layout  Process layout  Fixed position layout  Combination layout  following type of layout is preferred to manufate product layout  Process layout  Process layout  Fixed position layout  Combination layout  Combination layout                               |  |
| <ul> <li>4. The</li> <li>a.</li> <li>b.</li> <li>c.</li> <li>d.</li> <li>5. In s</li> <li>a.</li> <li>b.</li> <li>c.</li> <li>d.</li> </ul> | Product layout Process layout Fixed position layout Combination layout Combination layout Process layout Combination layout Process layout Process layout Process layout Process layout Fixed position layout Combination layout Combination layout Sometimes chart is a graphic representation of all the process chart Flow process chart Templates All of the above | is   |
| 7 Tr  | ravel charts provide<br>an idea of the flow of materials at various stages   | S  |

| (e) solution to handling techniques to achieve most optimum results.                                     |          |  |
|--|----------|--|
| 8 A low unit cost can be obtained by following   |          |  |
| (a) product layout   |          |  |
| (b) functional layout  |          |  |
| (c) automatic material handling equipment  |          |  |
| (d) specialization of operation  |          |  |
| (e) minimum travel time plan and compact layout.   |          |  |
| 9. Which is an advantage for product layout?   |          |  |
| A. Huge capital outlay B. Little flexibility.  |          |  |
| C. Discontinuity in production D. Lower cost of material handling  |          |  |
| 10. What is an advantage for process layout?   |          |  |
| A. Larger production cycle B. Higher material handling costs   |          |  |
| C. Interesting to workers D. Higher wage bill  |          |  |
| 11. "O" type flow pattern used in industry.  |          |  |
| A) bottling plant B) steel plant C) cement plant D) paper plant  |          |  |
| 12. The location of plant should be in such a place where the are available                              |          |  |
| A) Larger production cycle B) Higher material handling costs   |          |  |
| C) Interesting to workers D) Large scale economics   |          |  |
| 13. Flexibility cannot be achieved with  |          |  |
| A) Moveable equipment B) Inexpensive equipment   |          |  |
| C) Sophisticated electronic equipment D) Immovable equipment   |          |  |
| 14. Which layout facilitates high degree of automation to minimize fatigue and error?                    |          |  |
| A) Product layout B) Process layout C) Flexible layout D) Fixed layout                                   |          |  |
| Q.2  |          |  |
| (a) What is the basic difference between product and process layout?                                     | 03       |  |
| <ul><li>(b) Explain the circumstances when revising and improving the layout become necessary.</li></ul> | 04       |  |
| (b) Explain the encumstances when revising and improving the layout become necessary.                    | 01       |  |
| (c) Suppose that you are asked to recommend the location for a hospital that is to be placed in          | n a 07   |  |
| major city within the state. What criteria would be appropriate in evaluating alternative sites?         |          |  |
|  |          |  |
| OR   |          |  |
| (c) What factors would you consider in choosing between extension of factory or working                  | 07       |  |
| another shift when increased production become necessary?  |          |  |
| ·  |          |  |
| Q.3  |          |  |
| (a) Describe the factors that should be taken into account in deciding the location of plant?            | 03       |  |
|  |          |  |
| (b) What is the importance of location in business?  | 04       |  |
| (c) What do you mean by location analysis?   | 07       |  |
| OR   |          |  |
|  |          |  |
| Q.3  |          |  |
| (a) What are the principles for planning the layout of a new factory?                                    | 03<br>04 |  |
| (b) Explain the suitability of fixed position layout   |          |  |
| (c) What is plant layout? Discuss the objectives and advantages of a good layout                         | 07       |  |
|  |          |  |

(b) a compact estimate of the handling which must be done between various work sections (c) the information for changes required in rearranging material handling equipment

(d) an approximate estimate of the handling which must be done at a particular station

| Q.4   |    |  |
|---|----|--|
| (a) Why travel chart is to be prepared?   | 03 |  |
| <ul><li>(b) Write short note on String diagram: Application, importance and limitations.</li><li>(c) How facilities layout is affected by equipment repair or replacement decision?</li></ul> |    |  |
|   |    |  |
| OR  |    |  |
| Q.4   |    |  |
| (a) W hat is the necessity of travel chart?   | 03 |  |
| (b) Write short note on String diagram : Application, importance and limitations.   |    |  |
| (c) Discuss how 'Group technology - Production flow analysis' is useful in design of facilities layout.   | 07 |  |
| Q.5   |    |  |
| (a) How knowledge of layout design will be useful for any industrial engineer?  |    |  |
| (b) Why layout and material handling system must be designed simultaneously?  |    |  |
| (c) Write note: Use of software in layout design  | 07 |  |
| OR  |    |  |
| Q.5   |    |  |
| (a) Define 'line balancing'.  | 03 |  |
| (b) Why line balancing is important in a manufacturing concern?   | 04 |  |
| (c) Explain with the help of sketches the inter-relationship between the receiving, storage, warehousing and shipping in a layout.  | 07 |  |

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