



SLR-TX – 14

Seat No.	
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Set	P
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**F.E. (Part – II) (New) (CBCS) Examination, 2018
BASIC CIVIL ENGINEERING**

Day and Date : Tuesday, 20-11-2018
Time : 10.00 a.m. to 1.00 p.m.

Total Marks : 70

- Instructions :** 1) Q. No. 1 is **compulsory**. It should be solved in **first 30 minutes** in Answer Book Page No. 3. Each question carries **one** mark.
2) **Answer MCQ/Objective type questions on Page No. 3 only. Don't forget to mention, Q.P. Set (P/Q/R/S) on Top of Page.**

MCQ/Objective Type Questions

Duration : 30 Minutes

Marks : 14

1. Choose the correct answer :

- 1) Following is the branch of Civil Engineering
 - a) Mechanical Engineering
 - b) Electrical Engineering
 - c) Environmental Engineering
 - d) None of these
- 2) The full length of metric chain is marked on
 - a) Link
 - b) Tally
 - c) Handle
 - d) Eye bolt
- 3) In WCB system, a line is said to be free from local attraction, if the difference between F.B. and B.B. is
 - a) 0°
 - b) 90°
 - c) 180°
 - d) 360°
- 4) The main principle of surveying is to work from
 - a) The centre to the boundary
 - b) The whole to part
 - c) The part to the whole
 - d) All the above
- 5) The portion of a road surface, which is used by vehicular traffic, is known as
 - a) carriage-way
 - b) shoulder
 - c) express way
 - d) all of the above

P.T.O.



- 6) Dam which resist the water pressure by its own weight is known as
a) Timber dam b) Arch dam c) Gravity dam d) Steel dam
 - 7) When higher values are outside the loop; it indicates a
a) Hill b) Pond
c) Sloping ground d) Overhanging cliff
 - 8) The following element of a framed structure is designed to carry self weight only
a) Foundation b) Wall c) Column d) Beam
 - 9) For better roominess the desirable ratio of length to breadth of room is
a) 0.2 to 0.5 b) 0.5 to 0.8 c) 0.8 to 1.2 d) 1.2 to 1.5
 - 10) _____ has eastern aspect.
a) Bedroom b) Kitchen c) Study room d) Verandah
 - 11) Pleasing Red colour is imported to bricks due to
a) Iron oxide b) Lime c) Silica d) Magnesia
 - 12) The Global Positioning System (GPS) is a network of following number of Navstar satellites
a) 21 b) 22 c) 23 d) 24
 - 13) The study of something without making actual contact with the object of study is
a) GPS b) Triangulation
c) Levelling d) Remote sensing
 - 14) The lowermost part of a structure which transmits the load to the soil is known as
a) Superstructure b) Plinth
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Marks : 56

- Instructions :** 1) *All questions are compulsory.*
2) *Non programmable calculators are allowed to use.*
3) *Draw neat figures wherever necessary.*

2. Solve **any four** out of seven : **(3×4=12)**

- a) Explain applications of Civil Engineering to Mechanical Engineering.
- b) What is the role of a Civil Engineer in Construction of a Building ?
- c) Explain the types of Bearing.
- d) Describe with suitable sketch Metric Chain.
- e) Write characteristics of Contour map.
- f) Explain Rain Water Harvesting with neat sketch.
- g) Draw a cross section of Road indicating its structural layers.

3. Solve **any two** out of three : **(8×2=16)**

- a) The old map was drawn to a scale of 1 cm = 8 m, but now the paper is found to have shrunk. A line originally 200 mm long now measures 190 mm only. The area of a plan now measures 100.5 cm². There was also a note that the 30 m chain used was 100 mm too short. Find the true area of the plot.
- b) Below are the bearings observed in a traverse survey conducted with a prismatic compass at a place where local attraction was suspected.

Station	A	B	C	D
FB	11°30'	111°	201°	292°
BB	111°	191°30'	292°	20°

At what station do you suspect local attraction ? Find the corrected bearings of the lines and also calculate the included angles.

Set P



- c) The following staff readings were taken with a dumpy level. The instrument having been shifted after 3rd, 6th and 9th readings. The R.L. of the starting BM is 100.000 m. Enter the readings in a tabular form and calculate the reduced levels by collimation plane method. Apply the arithmetic checks. Show specimen calculations.

1.000, 2.000, 3.000, 1.000, 2.000, 3.000, 4.000, 0.500, 1.500, 2.500, 3.500.

4. Solve **any four (each 4 marks)**. **(4×4=16)**

- a) Explain Shallow and Deep foundation with neat sketch.
- b) Explain load bearing wall and framed structure in brief.
- c) What is building byelaws ? Explain it in brief.
- d) Give properties and uses of any two building material.
- e) Explain the various grades of concrete with their uses.
- f) Define GIS and GPS. Give application of each.

5. Solve **any two (each 6 marks)**. **(6×2=12)**

- a) Draw neat sketch showing typical cross section of building. Explain the function of each component in brief.
 - b) Explain :
 - i) Aspect
 - ii) Roominess
 - iii) Grouping with neat sketch.
 - c) What is RST ? Give the application of Remote Sensing Techniques.
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2) **Answer MCQ/Objective type questions on Page No. 3 only. Don't forget to mention, Q.P. Set (P/Q/R/S) on Top of Page.**

MCQ/Objective Type Questions

Duration : 30 Minutes

Marks : 14

1. Choose the correct answer :

- 1) The following element of a framed structure is designed to carry self weight only
a) Foundation b) Wall c) Column d) Beam
- 2) For better roominess the desirable ratio of length to breadth of room is
a) 0.2 to 0.5 b) 0.5 to 0.8 c) 0.8 to 1.2 d) 1.2 to 1.5
- 3) _____ has eastern aspect.
a) Bedroom b) Kitchen c) Study room d) Verandah
- 4) Pleasing Red colour is imported to bricks due to
a) Iron oxide b) Lime c) Silica d) Magnesia
- 5) The Global Positioning System (GPS) is a network of following number of Navstar satellites
a) 21 b) 22 c) 23 d) 24
- 6) The study of something without making actual contact with the object of study is
a) GPS b) Triangulation
c) Levelling d) Remote sensing

P.T.O.



- 7) The lowermost part of a structure which transmits the load to the soil is known as
 - a) Superstructure
 - b) Plinth
 - c) Foundation
 - d) Basement
 - 8) Following is the branch of Civil Engineering
 - a) Mechanical Engineering
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 - d) None of these
 - 9) The full length of metric chain is marked on
 - a) Link
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 - 10) In WCB system, a line is said to be free from local attraction, if the difference between F.B. and B.B. is
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 - 11) The main principle of surveying is to work from
 - a) The centre to the boundary
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 - d) All the above
 - 12) The portion of a road surface, which is used by vehicular traffic, is known as
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 - 13) Dam which resist the water pressure by its own weight is known as
 - a) Timber dam
 - b) Arch dam
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 - 14) When higher values are outside the loop; it indicates a
 - a) Hill
 - b) Pond
 - c) Sloping ground
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Marks : 56

- Instructions :** 1) *All questions are compulsory.*
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2. Solve **any four** out of seven : **(3×4=12)**

- a) Explain applications of Civil Engineering to Mechanical Engineering.
- b) What is the role of a Civil Engineer in Construction of a Building ?
- c) Explain the types of Bearing.
- d) Describe with suitable sketch Metric Chain.
- e) Write characteristics of Contour map.
- f) Explain Rain Water Harvesting with neat sketch.
- g) Draw a cross section of Road indicating its structural layers.

3. Solve **any two** out of three : **(8×2=16)**

- a) The old map was drawn to a scale of 1 cm = 8 m, but now the paper is found to have shrunk. A line originally 200 mm long now measures 190 mm only. The area of a plan now measures 100.5 cm². There was also a note that the 30 m chain used was 100 mm too short. Find the true area of the plot.
- b) Below are the bearings observed in a traverse survey conducted with a prismatic compass at a place where local attraction was suspected.

Station	A	B	C	D
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At what station do you suspect local attraction ? Find the corrected bearings of the lines and also calculate the included angles.

Set Q



- c) The following staff readings were taken with a dumpy level. The instrument having been shifted after 3rd, 6th and 9th readings. The R.L. of the starting BM is 100.000 m. Enter the readings in a tabular form and calculate the reduced levels by collimation plane method. Apply the arithmetic checks. Show specimen calculations.

1.000, 2.000, 3.000, 1.000, 2.000, 3.000, 4.000, 0.500, 1.500, 2.500, 3.500.

4. Solve **any four (each 4 marks)**. **(4×4=16)**

- a) Explain Shallow and Deep foundation with neat sketch.
- b) Explain load bearing wall and framed structure in brief.
- c) What is building byelaws ? Explain it in brief.
- d) Give properties and uses of any two building material.
- e) Explain the various grades of concrete with their uses.
- f) Define GIS and GPS. Give application of each.

5. Solve **any two (each 6 marks)**. **(6×2=12)**

- a) Draw neat sketch showing typical cross section of building. Explain the function of each component in brief.
 - b) Explain :
 - i) Aspect
 - ii) Roominess
 - iii) Grouping with neat sketch.
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MCQ/Objective Type Questions

Duration : 30 Minutes

Marks : 14

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 - b) shoulder
 - c) express way
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