

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**  
**Bachelor of Technology (Computer Science and Engineering) SEMESTER - 1 Summer 2025 ( Supply. )**  
**Course : Bachelor of Technology (Computer Science and Engineering) Branch : Engineering and Technology**  
**Semester : SEMESTER - 1**  
**Subject Code & Name: 24AF1000ES108 - BASIC CIVIL AND MECHANICAL ENGINEERING**

**Time : 3 Hours]**

**[Total Marks : 60**

**Instructions to the Students:**

1. Each question carries 12 marks.
2. Question No. 1 will be compulsory and include objective-type questions.
3. Candidates are required to attempt any four questions from Question No. 2 to Question No.6
4. Use of non-programmable scientific calculators is allowed.
5. Assume suitable data wherever necessary and mention it clearly.

**Q1. Objective type questions. (Compulsory Question)**

**12**

- 1 Which of the following is an example of a shallow foundation?
  - a) Pile foundation
  - b) Caisson foundation
  - c) Spread Footing
  - d) Pier Foundation
- 2 What is the primary function of mortar in masonry?
  - a) To provide structural support
  - b) To bind brick or stones together
  - c) To improve drainage
  - d) To enhance aesthetic appeal
- 3 The entire assembly of styles, panels and rails is known as .....
  - a) Putty
  - b) Horn
  - c) Sash
  - d) Shutter
- 4 What is the primary function of an RCC lintel?
  - a) To provide structural support to walls
  - b) To distribute the loads over openings
  - c) To enhance aesthetic appeal
  - d) To improve insulation
- 5 An offset is a ..... distance of an object measured from the survey line.
  - a) Lateral
  - b) Horizontal
  - c) Normal
  - d) Inclined

- 6 .....Instrument is used to sight to an object in plane table surveying.  
 a) Compass  
 b) U-Frame  
 c) Plumbing fork  
 d) Alidade
- 7 Horizontal distance between two points in two consecutive contours is known as.....  
 a) Horizontal equivalent  
 b) Vertical equivalent  
 c) Contour interval  
 d) All of the above
- 8 Which of the following kind of energy output is obtained from a steam power plant?  
 a) Electricity  
 b) Thermal energy  
 c) Sound energy  
 d) Heat energy
- 9 Which of the following is a type of thermodynamic system?  
 a) Open System  
 b) Closed system  
 c) Isolated system  
 d) all of the above
- 10 Petrol engine are .....than diesel engine .  
 a) Lighter  
 b) Unpredictable  
 c) Heavier  
 d) None of the above
- 11 Which of the following operation is not carried out lathe machine?  
 a) Welding  
 b) Facing  
 c) Turning  
 d) Parting
- 12 Sand mould & permanent mould are the part of .....manufacturing process.  
 a) Machining  
 b) casting  
 c) welding  
 d) None of the above
- Q2. Solve the following.
- A) Define foundation along with its function. 6  
 B) Describe concrete along with its properties. 6
- Q3. Solve the following.
- A) Describe in detail Panelled doors with sketch. 6  
 B) Describe in detail RCC Lintel with weather shed along with sketch. 6
- Q4. Solve Any Two of the following.
- A) Describe in detail Metric Chain with sketch. 6  
 B) Describe the advantages and disadvantages of Plane Table Surveying. 6

C) Describe 'Contouring' along with its purpose. 6

Q5. Solve Any Two of the following.

A) What is the function of Power Plant? Explain in brief working of thermal power plant with suitable sketch. 6

B) Describe any six operations performed on lathe machine with suitable diagrams. 6

C) Explain the working of four stroke petrol engine with suitable diagram. 6

Q6. Solve Any Two of the following.

A) Explain the law of conservation of energy. How it is related with first law of thermodynamics? 6

B) Classify engineering material. Describe in detail properties and applications of any two non-ferrous metals. 6

C) What is the difference between Machine and Mechanism? Explain any two types of Mechanism with suitable diagram. 6

\*\*\* End \*\*\*

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**

**Regular/Supplementary Winter Examination – 2024**

**Course: Engineering**

**Branch: Common To All Branches**

**Semester : 1<sup>st</sup> Sem**

**Subject Code & Name: 24AF2CMEE108 (Basic Civil and Mechanical Engineering)**

**Max Marks: 60**

**Date: 22/02/2025**

**Duration: 3 Hr.**

**Instructions to the Students:**

1. Each question carries 12 marks.
2. Question No. 1 will be compulsory and include objective-type questions.
3. Candidates are required to attempt any four questions from Question No. 2 to Question No. 6.
4. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.
5. Use of non-programmable scientific calculators is allowed.
6. Assume suitable data wherever necessary and mention it clearly.

		(Level/CO)	Marks
<b>Q. 1</b>	<b>Objective type questions. (Compulsory Question)</b>	<b>Remember</b>	<b>12</b>
1	A..... is a horizontal member which is placed across an opening to support the position of the structure above it.		
	<div>a. Doors</div> <div>b. Windows</div> <div>c. Sill</div> <div>d. Lintel</div>		
2	what is the primary function of a shallow foundation		
	<div>a. To transfer loads to a deeper</div> <div>b. To distribute loads over a larger area to reduce soil pressure</div> <div>c. To provide Lateral Support to the superstructure</div> <div>d. To resist uplift forces</div>		
3	What is the primary function of cement in concrete?		
	<div>a. To provide Strength</div> <div>b. To improve workability</div> <div>c. To reduce shrinkage</div> <div>d. To increase durability</div>		
4	The entire assembly of styles, Pannels & rails is known as the.....		
	<div>a Putty</div> <div>b. Horn</div> <div>c. Sash</div> <div>d. Shutter</div>		
5	What is surveying?		
	<div>a. To find elevations w.r to datum</div> <div>b. Show's the relative positions of the object on the</div> <div>c. To find elevations of points having</div> <div>d. All of above</div>		

		surface of the earth	same contour intervals			
6	What is the term used for an Imaginary line on the ground Joining of equal elevations					1
	a. Level Line	b. Line of sight	c. Datum	d. Contour		
7	Which of the following kind of energy output is obtained from a 'Steam Power Plant'					1
	a. Electricity	b. Thermal energy	c. Sound energy	d. Heat energy		
8	Which of the following is a classification of automobiles based on Load?					1
	a. Heavy transport vehicle (HTV)	b. Sedan Hatchback car	c. Four wheeler vehicle	d. Front-wheel drive		
9	Petrol engines are..... than diesel engines.					1
	a. Lighter	b. Unpredictable	c. Heavier	d. None of the mentioned		
10	Which of the following is a type of thermodynamic system?					1
	a. Open system	b. Closed system	c. Thermally isolated system	d. All of the mentioned		
11	Sand mold and permanent mold are the parts of..... manufacturing process.					1
	a. Machining	b. Casting	c. Welding	d. None of above		
12	Which of the following operation is not carried out on Lathe Machine.					1
	a. Welding	b. Facing	c. Turning	d. Parting		
Q. 2	Solve the following.				C02	12
A)	Describe in detail concrete with its types & properties?					6
B)	Explain the role of Civil engineer in the field of Construction engineering?					6

Q.3	Solve the following.	CO3	12
A)	Explain the foundation with its types & function of foundation?		6
B)	Describe in detail 'lean to roof' with sketch?		6
Q. 4	Solve Any Two of the following.	CO4	12
A)	Describe in detail "Metric chain" with sketch?		6
B)	Describe Advantages & Disadvantages of "Plane Table surveying"?		6
	Define the terms? i) Reduced level ii) Height of instrument iii) Contour line iv) Bench marks v) Change Point vi) Contour interval		6
Q.5	Solve Any Two of the following.	CO5	12
A)	Describe first law of thermodynamics. Enlist the limitations of the same?		6
B)	Classify Internal combustion engines based on (i) Cycle of operation, ii) Fuel used, iii) Cylinder Arrangement, (iv) No. of strokes, (v) Application, (vi) Ignition method.		6
	What is the function of Power plant. Explain in brief working of thermal power plant with suitable sketch?		6
Q. 6	Solve Any Two of the following.	CO5	12
A)	What is the difference between machine and mechanism? Explain any two types of mechanism with suitable diagrams.		6
B)	Classify engineering materials. Describe in detail properties and applications of any two non-ferrous metals?		6
	With suitable diagrams describe any six operations performed on Lathe machine?		6
*** Eng ***			



**SLR-TX – 18**

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**F.E. (Part – II) (Old – CGPA Pattern) Examination, 2018**  
**BASIC CIVIL ENGINEERING**

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

Max. Marks : 70

- Instructions :** 1) **Assume** suitable data **if necessary** and state it clearly.  
2) Q. No. 1 is **compulsory**. It should be solved in **first 30 minutes** in Answer Book Page No. 3. **Each** question carries **one** mark.  
3) **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 alternative :

**(1×14=14)**

- 1) Contour lines are widely spaced in case of
  - a) Steep slope ground
  - b) Gentle slope ground
  - c) Undulated ground
  - d) None of the above
- 2) Following is the sub branch of Civil Engineering deals with air pollution and water supply
  - a) Geotechnical Engineering
  - b) Environmental Engineering
  - c) Transporation Engineering
  - d) Structural Engineering
- 3) The useful storage is the volume of the water stored in reservoir between
  - a) Minimum pool level to maximum pool level
  - b) Minimum pool level to normal pool level
  - c) Normal pool level to maximum pool level
  - d) River bed and minimum pool level
- 4) As per IRC recommendation, maximum limit of super elevation for mixed traffic in plain terrain is
  - a) 1 in 15
  - b) 1 in 10
  - c) 1 in 12.5
  - d) 1 in 20
- 5) Following angles can be set by open cross staff
  - a) only 45°
  - b) only 90°
  - c) either 45° or 90°
  - d) any angle

**P.T.O.**



- 6) In whole circle bearing, a quadrantal bearing  $N66^{\circ}30'W$  expressed as  
a)  $295^{\circ}30'$       b)  $293^{\circ}30'$       c)  $290^{\circ}30'$       d)  $294^{\circ}30'$
- 7) The roads are classified as per  
a) road material      b) road width      c) road location      d) all of these
- 8) A combined footing is commonly used  
a) When two columns are spaced close to each other  
b) When two columns are spaced far apart  
c) Under a set of columns  
d) Under a set of walls
- 9) The lowest part of a structure which transmits the load to the soil is known as  
a) super-structure      b) plinth      c) foundation      d) basement
- 10) In earthquake resistant structure, following is desirable  
a) Continuous band at plinth, lintel and Sill  
b) Use of rich mortar  
c) Use of through headers  
d) All the above
- 11) Arrangement of doors and windows on external walls of a building to reveal desirable view and conceal undesirable views is called  
a) Aspect      b) Prospect      c) Ventilation      d) Privacy
- 12) A good building stone should have  
a) strength      b) hardness and toughness  
c) resistance to fire      d) all of the above
- 13) Initial setting time of cement concrete should not be less than  
a) 30 min      b) 120 min      c) 180 min      d) 360 min
- 14) Objectives of GIS are  
a) Maximize the efficiency of decision making and planning  
b) Provide efficient means for data distribution and handling  
c) To work from part to whole  
d) Only a) and b)
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**F.E. (Part – II) (Old – CGPA Parttern) Examination, 2018**  
**BASIC CIVIL ENGINEERING**

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

Marks : 56

- Instructions :** 1) Question No. 2 is compulsory in Section – I and solve **any two** questions from Q. No. 3 to Q. No. 5.  
2) Q. 6 from Section – II is compulsory and solve **any two** questions out of Q. No. 7 to Q. No. 9.  
3) **Assume** suitable data **if necessary** and state it clearly.

**SECTION – I**

2. a) Explain the role of Civil Engineer in construction activity. **3**  
b) The following bearings were taken during closed traverse

Line	Fore Bearing	Back Bearing
AB	66°15'	244°0'
BC	129°45'	313°0'
CD	218°30'	37°30'
DA	306°45'	126°45'

Find included angles and find out corrected FB and BB.

Draw neat sketch of the traverse. Find included angles and find out corrected FB and BB. **7**

3. a) Write the difference between prismatic compass and surveyors compass. **2**  
b) The following readings were taken with dumpy level.

1.305 (staff inverted), 1.705, 1.235, 3.925, 2.590, 1.890, 1.785, 2.390, 1.700, 0.300, 1.890 and 3.000

The instrument was shifted after third, sixth and ninth reading. The first reading was taken on BM of elevation 270.275. Find elevation of all points. Apply usual check. Use HI method. **7**

**Set P**



4. a) Explain in brief :  
1) Gravity dam  
2) Earthen dam. 4
- b) The chain was tested before starting of the work and found exactly 20 m. At the end of the survey chain was found to measure 20.15m. The area of plan drawn to a scale 1 cm = 50 m was 120 sq. cm. Find the true area. 5
5. a) Explain the different modes of transportation. 4
- b) Explain the general principles of surveying. 5

### SECTION – II

6. a) Enlist different principles of planning. 3
- b) Explain various elements of building with the help of suitable sectional elevation. 7
7. a) Define F.S.I and explain its importance in construction. 3
- b) What is Water Cement ratio ? How it affects on strength of concrete ? 6
8. a) Differentiate between load bearing and framed structures. 3
- b) Enlist building bye-laws and explain building bye-laws in accordance with building line and space requirement. 6
9. a) What are the characteristics of good bricks ? 3
- b) Explain advantages of Green buildings. 6
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**Q**

**F.E. (Part – II) (Old – CGPA Pattern) Examination, 2018**  
**BASIC CIVIL ENGINEERING**

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

Max. Marks : 70

- Instructions :** 1) **Assume** suitable data **if necessary** and state it clearly.  
2) Q. No. 1 is **compulsory**. It should be solved in **first 30 minutes** in Answer Book Page No. 3. **Each** question carries **one** mark.  
3) **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 alternative :

**(1×14=14)**

- 1) A combined footing is commonly used
  - a) When two columns are spaced close to each other
  - b) When two columns are spaced far apart
  - c) Under a set of columns
  - d) Under a set of walls
- 2) The lowest part of a structure which transmits the load to the soil is known as
  - a) super-structure    b) plinth                      c) foundation    d) basement
- 3) In earthquake resistant structure, following is desirable
  - a) Continuous band at plinth, lintel and Sill
  - b) Use of rich mortar
  - c) Use of through headers
  - d) All the above
- 4) Arrangement of doors and windows on external walls of a building to reveal desirable view and conceal undesirable views is called
  - a) Aspect                      b) Prospect                      c) Ventilation    d) Privacy

**P.T.O.**



- 5) A good building stone should have
- a) strength
  - b) hardness and toughness
  - c) resistance to fire
  - d) all of the above
- 6) Initial setting time of cement concrete should not be less than
- a) 30 min
  - b) 120 min
  - c) 180 min
  - d) 360 min
- 7) Objectives of GIS are
- a) Maximize the efficiency of decision making and planning
  - b) Provide efficient means for data distribution and handling
  - c) To work from part to whole
  - d) Only a) and b)
- 8) Contour lines are widely spaced in case of
- a) Steep slope ground
  - b) Gentle slope ground
  - c) Undulated ground
  - d) None of the above
- 9) Following is the sub branch of Civil Engineering deals with air pollution and water supply
- a) Geotechnical Engineering
  - b) Environmental Engineering
  - c) Transportation Engineering
  - d) Structural Engineering
- 10) The useful storage is the volume of the water stored in reservoir between
- a) Minimum pool level to maximum pool level
  - b) Minimum pool level to normal pool level
  - c) Normal pool level to maximum pool level
  - d) River bed and minimum pool level
- 11) As per IRC recommendation, maximum limit of super elevation for mixed traffic in plain terrain is
- a) 1 in 15
  - b) 1 in 10
  - c) 1 in 12.5
  - d) 1 in 20
- 12) Following angles can be set by open cross staff
- a) only  $45^\circ$
  - b) only  $90^\circ$
  - c) either  $45^\circ$  or  $90^\circ$
  - d) any angle
- 13) In whole circle bearing, a quadrantal bearing  $N66^\circ30'W$  expressed as
- a)  $295^\circ30'$
  - b)  $293^\circ30'$
  - c)  $290^\circ30'$
  - d)  $294^\circ30'$
- 14) The roads are classified as per
- a) road material
  - b) road width
  - c) road location
  - d) all of these



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**F.E. (Part – II) (Old – CGPA Parttern) Examination, 2018**  
**BASIC CIVIL ENGINEERING**

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

Marks : 56

- Instructions :** 1) Question No. 2 is compulsory in Section – I and solve **any two** questions from Q. No. 3 to Q. No. 5.  
2) Q. 6 from Section – II is compulsory and solve **any two** questions out of Q. No. 7 to Q. No. 9.  
3) **Assume** suitable data **if necessary** and state it clearly.

**SECTION – I**

2. a) Explain the role of Civil Engineer in construction activity. **3**

- b) The following bearings were taken during closed traverse

Line	Fore Bearing	Back Bearing
AB	66°15'	244°0'
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Find included angles and find out corrected FB and BB.

Draw neat sketch of the traverse. Find included angles and find out corrected FB and BB. **7**

3. a) Write the difference between prismatic compass and surveyors compass. **2**

- b) The following readings were taken with dumpy level.

1.305 (staff inverted), 1.705, 1.235, 3.925, 2.590, 1.890, 1.785, 2.390, 1.700, 0.300, 1.890 and 3.000

The instrument was shifted after third, sixth and ninth reading. The first reading was taken on BM of elevation 270.275. Find elevation of all points. Apply usual check. Use HI method. **7**

**Set Q**



4. a) Explain in brief :  
1) Gravity dam  
2) Earthen dam. 4
- b) The chain was tested before starting of the work and found exactly 20 m. At the end of the survey chain was found to measure 20.15m. The area of plan drawn to a scale 1 cm = 50 m was 120 sq. cm. Find the true area. 5
5. a) Explain the different modes of transportation. 4
- b) Explain the general principles of surveying. 5

### SECTION – II

6. a) Enlist different principles of planning. 3
- b) Explain various elements of building with the help of suitable sectional elevation. 7
7. a) Define F.S.I and explain its importance in construction. 3
- b) What is Water Cement ratio ? How it affects on strength of concrete ? 6
8. a) Differentiate between load bearing and framed structures. 3
- b) Enlist building bye-laws and explain building bye-laws in accordance with building line and space requirement. 6
9. a) What are the characteristics of good bricks ? 3
- b) Explain advantages of Green buildings. 6
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**F.E. (Part – II) (Old – CGPA Pattern) Examination, 2018**  
**BASIC CIVIL ENGINEERING**

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

Max. Marks : 70

- Instructions :** 1) **Assume** suitable data **if necessary** and state it clearly.  
2) Q. No. **1** is **compulsory**. It should be solved in **first 30 minutes** in Answer Book Page No. **3**. **Each** question carries **one** mark.  
3) **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 alternative :

**(1×14=14)**

- 1) Following angles can be set by open cross staff
  - a) only 45°
  - b) only 90°
  - c) either 45° or 90°
  - d) any angle
- 2) In whole circle bearing, a quadrantal bearing N66°30'W expressed as
  - a) 295°30'
  - b) 293°30'
  - c) 290°30'
  - d) 294°30'
- 3) The roads are classified as per
  - a) road material
  - b) road width
  - c) road location
  - d) all of these
- 4) A combined footing is commonly used
  - a) When two columns are spaced close to each other
  - b) When two columns are spaced far apart
  - c) Under a set of columns
  - d) Under a set of walls
- 5) The lowest part of a structure which transmits the load to the soil is known as
  - a) super-structure
  - b) plinth
  - c) foundation
  - d) basement

**P.T.O.**



- 6) In earthquake resistant structure, following is desirable
- a) Continuous band at plinth, lintel and Sill
  - b) Use of rich mortar
  - c) Use of through headers
  - d) All the above
- 7) Arrangement of doors and windows on external walls of a building to reveal desirable view and conceal undesirable views is called
- a) Aspect                      b) Prospect              c) Ventilation              d) Privacy
- 8) A good building stone should have
- a) strength    b) hardness and toughness
  - c) resistance to fire                                      d) all of the above
- 9) Initial setting time of cement concrete should not be less than
- a) 30 min                      b) 120 min                      c) 180 min                      d) 360 min
- 10) Objectives of GIS are
- a) Maximize the efficiency of decision making and planning
  - b) Provide efficient means for data distribution and handling
  - c) To work from part to whole
  - d) Only a) and b)
- 11) Contour lines are widely spaced in case of
- a) Steep slope ground                                      b) Gentle slope ground
  - c) Undulated ground                                      d) None of the above
- 12) Following is the sub branch of Civil Engineering deals with air pollution and water supply
- a) Geotechnical Engineering                                      b) Environmental Engineering
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- 13) The useful storage is the volume of the water stored in reservoir between
- a) Minimum pool level to maximum pool level
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  - c) Normal pool level to maximum pool level
  - d) River bed and minimum pool level
- 14) As per IRC recommendation, maximum limit of super elevation for mixed traffic in plain terrain is
- a) 1 in 15                      b) 1 in 10                      c) 1 in 12.5                      d) 1 in 20





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**F.E. (Part – II) (Old – CGPA Parttern) Examination, 2018**  
**BASIC CIVIL ENGINEERING**

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

Marks : 56

- Instructions :** 1) Question No. 2 is compulsory in Section – I and solve **any two** questions from Q. No. 3 to Q. No. 5.  
2) Q. 6 from Section – II is compulsory and solve **any two** questions out of Q. No. 7 to Q. No. 9.  
3) **Assume** suitable data **if necessary** and state it clearly.

**SECTION – I**

2. a) Explain the role of Civil Engineer in construction activity. **3**

- b) The following bearings were taken during closed traverse

Line	Fore Bearing	Back Bearing
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Find included angles and find out corrected FB and BB.

Draw neat sketch of the traverse. Find included angles and find out corrected FB and BB. **7**

3. a) Write the difference between prismatic compass and surveyors compass. **2**

- b) The following readings were taken with dumpy level.

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The instrument was shifted after third, sixth and ninth reading. The first reading was taken on BM of elevation 270.275. Find elevation of all points. Apply usual check. Use HI method. **7**

**Set R**



4. a) Explain in brief :  
1) Gravity dam  
2) Earthen dam. 4
- b) The chain was tested before starting of the work and found exactly 20 m. At the end of the survey chain was found to measure 20.15m. The area of plan drawn to a scale 1 cm = 50 m was 120 sq. cm. Find the true area. 5
5. a) Explain the different modes of transportation. 4
- b) Explain the general principles of surveying. 5

### SECTION – II

6. a) Enlist different principles of planning. 3
- b) Explain various elements of building with the help of suitable sectional elevation. 7
7. a) Define F.S.I and explain its importance in construction. 3
- b) What is Water Cement ratio ? How it affects on strength of concrete ? 6
8. a) Differentiate between load bearing and framed structures. 3
- b) Enlist building bye-laws and explain building bye-laws in accordance with building line and space requirement. 6
9. a) What are the characteristics of good bricks ? 3
- b) Explain advantages of Green buildings. 6
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**F.E. (Part – II) (Old – CGPA Pattern) Examination, 2018  
BASIC CIVIL ENGINEERING**

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

Max. Marks : 70

- Instructions :** 1) **Assume** suitable data **if necessary** and state it clearly.  
2) Q. No. **1** is **compulsory**. It should be solved in **first 30 minutes** in Answer Book Page No. **3**. **Each** question carries **one** mark.  
3) **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 alternative :

**(1×14=14)**

- 1) In earthquake resistant structure, following is desirable
  - a) Continuous band at plinth, lintel and Sill
  - b) Use of rich mortar
  - c) Use of through headers
  - d) All the above
- 2) Arrangement of doors and windows on external walls of a building to reveal desirable view and conceal undesirable views is called
  - a) Aspect                      b) Prospect                      c) Ventilation                      d) Privacy
- 3) A good building stone should have
  - a) strength    b) hardness and toughness
  - c) resistance to fire    d) all of the above
- 4) Initial setting time of cement concrete should not be less than
  - a) 30 min                      b) 120 min                      c) 180 min                      d) 360 min
- 5) Objectives of GIS are
  - a) Maximize the efficiency of decision making and planning
  - b) Provide efficient means for data distribution and handling
  - c) To work from part to whole
  - d) Only a) and b)

**P.T.O.**



- 6) Contour lines are widely spaced in case of  
a) Steep slope ground                      b) Gentle slope ground  
c) Undulated ground                      d) None of the above
- 7) Following is the sub branch of Civil Engineering deals with air pollution and water supply  
a) Geotechnical Engineering              b) Environmental Engineering  
c) Transporation Engineering              d) Structural Engineering
- 8) The useful storage is the volume of the water stored in reservoir between  
a) Minimum pool level to maximum pool level  
b) Minimum pool level to normal pool level  
c) Normal pool level to maximum pool level  
d) River bed and minimum pool level
- 9) As per IRC recommendation, maximum limit of super elevation for mixed traffic in plain terrain is  
a) 1 in 15                      b) 1 in 10                      c) 1 in 12.5                      d) 1 in 20
- 10) Following angles can be set by open cross staff  
a) only  $45^\circ$                       b) only  $90^\circ$   
c) either  $45^\circ$  or  $90^\circ$                       d) any angle
- 11) In whole circle bearing, a quadrantal bearing  $N66^\circ30'W$  expressed as  
a)  $295^\circ30'$                       b)  $293^\circ30'$                       c)  $290^\circ30'$                       d)  $294^\circ30'$
- 12) The roads are classified as per  
a) road material      b) road width      c) road location      d) all of these
- 13) A combined footing is commonly used  
a) When two columns are spaced close to each other  
b) When two columns are spaced far apart  
c) Under a set of columns  
d) Under a set of walls
- 14) The lowest part of a structure which transmits the load to the soil is known as  
a) super-structure      b) plinth                      c) foundation                      d) basement
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Seat No.	
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**F.E. (Part – II) (Old – CGPA Parttern) Examination, 2018**  
**BASIC CIVIL ENGINEERING**

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

Marks : 56

- Instructions :** 1) Question No. 2 is compulsory in Section – I and solve **any two** questions from Q. No. 3 to Q. No. 5.  
2) Q. 6 from Section – II is compulsory and solve **any two** questions out of Q. No. 7 to Q. No. 9.  
3) **Assume** suitable data **if necessary** and state it clearly.

**SECTION – I**

2. a) Explain the role of Civil Engineer in construction activity. **3**

- b) The following bearings were taken during closed traverse

Line	Fore Bearing	Back Bearing
AB	66°15'	244°0'
BC	129°45'	313°0'
CD	218°30'	37°30'
DA	306°45'	126°45'

Find included angles and find out corrected FB and BB.

Draw neat sketch of the traverse. Find included angles and find out corrected FB and BB. **7**

3. a) Write the difference between prismatic compass and surveyors compass. **2**

- b) The following readings were taken with dumpy level.

1.305 (staff inverted), 1.705, 1.235, 3.925, 2.590, 1.890, 1.785, 2.390, 1.700, 0.300, 1.890 and 3.000

The instrument was shifted after third, sixth and ninth reading. The first reading was taken on BM of elevation 270.275. Find elevation of all points. Apply usual check. Use HI method. **7**

**Set S**



4. a) Explain in brief :  
1) Gravity dam  
2) Earthen dam. 4
- b) The chain was tested before starting of the work and found exactly 20 m. At the end of the survey chain was found to measure 20.15m. The area of plan drawn to a scale 1 cm = 50 m was 120 sq. cm. Find the true area. 5
5. a) Explain the different modes of transportation. 4
- b) Explain the general principles of surveying. 5

### SECTION – II

6. a) Enlist different principles of planning. 3
- b) Explain various elements of building with the help of suitable sectional elevation. 7
7. a) Define F.S.I and explain its importance in construction. 3
- b) What is Water Cement ratio ? How it affects on strength of concrete ? 6
8. a) Differentiate between load bearing and framed structures. 3
- b) Enlist building bye-laws and explain building bye-laws in accordance with building line and space requirement. 6
9. a) What are the characteristics of good bricks ? 3
- b) Explain advantages of Green buildings. 6
-

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**  
**End Semester Examination – Winter 2018**

Course: B. Tech

Subject Name: Basic Civil Engineering

Max Marks:60

Date: 12/12/2018

Semester: I/II

Subject Code: CV105/ CV205

Duration: 3 Hr.

***Instructions to the Students:***

1. Solve ANY FIVE questions out of the following.
2. The level question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.
3. Illustrate your answers with neat sketches, diagrams etc. where ever necessary.
4. Assume suitable data wherever necessary and mention it clearly.

**Q. 1** Solve any two:

**(6x2)**

- a) Write the uses of stones in civil engineering construction work.
- b) What are the properties of good timber?
- c) List any twelve types of cement used for various construction works.

**Q. 2** a) What are the functions of doors and windows?

**(6)**

b) What are the functional requirements of flooring material?

**(6)**

**Q. 3** a) What are the required aspects for various parts of the building in the northern hemisphere of earth?

**(4)**

b) Enlist the different elements of a building.

**(4)**

c) What are the main functions of walls and columns?

**(4)**

**Q. 4** Solve any two:

**(6x2)**

a) What are the fundamental principles of surveying?

b) Draw a neat sketch of telescopic leveling staff.

c) Define: Contour, Reduced Level, Change Point, and Bench Mark.

**Q. 5** a) Draw neat sketches for the following road signs: No parking, Speed Limit 30 kmph, and Overtaking prohibited.

**(6)**

b) Explain in brief the classification or types of roads based on location and function in India.

**(6)**

**Q. 6** a) What are the physical characteristics of drinking water?

**(6)**

b) Write a short note on rain water harvesting.

**(6)**

**----- End of Paper -----**

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**  
**End Semester Examination – Winter 2018**

Course: B. Tech

Subject Name: Basic Civil Engineering

Max Marks:60

Date: 12/12/2018

Semester: I/II

Subject Code: CV105/ CV205

Duration: 3 Hr.

**Instructions to the Students:**

1. Solve ANY FIVE questions out of the following.
2. The level question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.
3. Illustrate your answers with neat sketches, diagrams etc. where ever necessary.
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- a) Write the uses of stones in civil engineering construction work.
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**(4)**

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**(4)**

**Q. 4** Solve any two:

**(6x2)**

- a) What are the fundamental principles of surveying?
- b) Draw a neat sketch of telescopic leveling staff.
- c) Define: Contour, Reduced Level, Change Point, and Bench Mark.

**Q. 5** a) Draw neat sketches for the following road signs: No parking, Speed Limit 30 kmph, and Overtaking prohibited.

**(6)**

b) Explain in brief the classification or types of roads based on location and function in India.

**(6)**

**Q. 6** a) What are the physical characteristics of drinking water?

**(6)**

b) Write a short note on rain water harvesting.

**(6)**

**----- End of Paper -----**





**SLR-TX – 14**

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Set	<b>P</b>
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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
  - c) Foundation
  - d) Basement



Seat No.	
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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.

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 cm<sup>2</sup>. 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 3<sup>rd</sup>, 6<sup>th</sup> and 9<sup>th</sup> 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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**SLR-TX – 14**

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Set	<b>Q</b>
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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) 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 imparted 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              b) Electrical Engineering  
c) Environmental Engineering          d) None of these
- 9) The full length of metric chain is marked on
- a) Link                      b) Tally                      c) Handle                      d) Eye bolt
- 10) In WCB system, a line is said to be free from local attraction, if the difference between F.B. and B.B. is
- a)  $0^\circ$                       b)  $90^\circ$                       c)  $180^\circ$                       d)  $360^\circ$
- 11) 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
- 12) 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
- 13) 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
- 14) When higher values are outside the loop; it indicates a
- a) Hill                                      b) Pond  
c) Sloping ground                      d) Overhanging cliff
-



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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.

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 cm<sup>2</sup>. 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 Q**



- c) The following staff readings were taken with a dumpy level. The instrument having been shifted after 3<sup>rd</sup>, 6<sup>th</sup> and 9<sup>th</sup> 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.
-





**SLR-TX – 14**

Seat No.	
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Set	<b>R</b>
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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) 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
- 2) 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
- 3) When higher values are outside the loop; it indicates a
  - a) Hill
  - b) Pond
  - c) Sloping ground
  - d) Overhanging cliff
- 4) The following element of a framed structure is designed to carry self weight only
  - a) Foundation
  - b) Wall
  - c) Column
  - d) Beam
- 5) 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
- 6) \_\_\_\_\_ has eastern aspect.
  - a) Bedroom
  - b) Kitchen
  - c) Study room
  - d) Verandah

**P.T.O.**



- 7) Pleasing Red colour is imported to bricks due to  
a) Iron oxide                      b) Lime                      c) Silica                      d) Magnesia
- 8) The Global Positioning System (GPS) is a network of following number of Navstar satellites  
a) 21                      b) 22                      c) 23                      d) 24
- 9) The study of something without making actual contact with the object of study is  
a) GPS                      b) Triangulation  
c) Levelling                      d) Remote sensing
- 10) The lowermost part of a structure which transmits the load to the soil is known as  
a) Superstructure                      b) Plinth  
c) Foundation                      d) Basement
- 11) Following is the branch of Civil Engineering  
a) Mechanical Engineering                      b) Electrical Engineering  
c) Environmental Engineering                      d) None of these
- 12) The full length of metric chain is marked on  
a) Link                      b) Tally                      c) Handle                      d) Eye bolt
- 13) In WCB system, a line is said to be free from local attraction, if the difference between F.B. and B.B. is  
a)  $0^\circ$                       b)  $90^\circ$                       c)  $180^\circ$                       d)  $360^\circ$
- 14) 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
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Seat No.	
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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.

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 cm<sup>2</sup>. 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 R**



- c) The following staff readings were taken with a dumpy level. The instrument having been shifted after 3<sup>rd</sup>, 6<sup>th</sup> and 9<sup>th</sup> 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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**SLR-TX – 14**

Seat No.	
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Set	<b>S</b>
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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) \_\_\_\_\_ has eastern aspect.  
a) Bedroom                      b) Kitchen                      c) Study room                      d) Verandah
- 2) Pleasing Red colour is imported to bricks due to  
a) Iron oxide                      b) Lime                      c) Silica                      d) Magnesia
- 3) The Global Positioning System (GPS) is a network of following number of Navstar satellites  
a) 21                      b) 22                      c) 23                      d) 24
- 4) The study of something without making actual contact with the object of study is  
a) GPS                      b) Triangulation  
c) Levelling                      d) Remote sensing
- 5) The lowermost part of a structure which transmits the load to the soil is known as  
a) Superstructure                      b) Plinth  
c) Foundation                      d) Basement

**P.T.O.**



- 6) Following is the branch of Civil Engineering
- a) Mechanical Engineering                      b) Electrical Engineering
  - c) Environmental Engineering                  d) None of these
- 7) The full length of metric chain is marked on
- a) Link                      b) Tally                      c) Handle                      d) Eye bolt
- 8) In WCB system, a line is said to be free from local attraction, if the difference between F.B. and B.B. is
- a)  $0^\circ$                       b)  $90^\circ$                       c)  $180^\circ$                       d)  $360^\circ$
- 9) 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
- 10) 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
- 11) 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
- 12) When higher values are outside the loop; it indicates a
- a) Hill                      b) Pond
  - c) Sloping ground                      d) Overhanging cliff
- 13) The following element of a framed structure is designed to carry self weight only
- a) Foundation              b) Wall                      c) Column                      d) Beam
- 14) 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
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Seat No.	
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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.

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 cm<sup>2</sup>. 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 S**



- c) The following staff readings were taken with a dumpy level. The instrument having been shifted after 3<sup>rd</sup>, 6<sup>th</sup> and 9<sup>th</sup> 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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