B.E. All Branches First Semester (C.B.S.) / B.E. (Fire Engineering) First Semester

Basics of Civil Engineering

P. Pages : 1 **NIR/KW/18/3285/3934**

Time : Two Hours * 1 9 4 0 * Max. Marks : 40

Notes :
1. Solve Question 1 OR Questions No. 2.
2. Solve Question 3 OR Questions No. 4.
3. Solve Question 5 OR Questions No. 6.
4. Solve Question 7 OR Questions No. 8.
5. Due credit will be given to neatness and adequate dimensions.
6. Assume suitable data whenever necessary.
7. Illustrate your answers whenever necessary with the help of neat sketches.
8. Use of non programmable calculator is permitted.

1. a) Enlist various principles of building planning and explain any two of them. **6**

b) Explain briefly different types of load those can act on a building. **4**

OR

2. a) On a plot size of $30\,m \times 45\,m$, the shorter side is facing the main road. The margins are as follows : **6**

i) Front margin = 6 m.

ii) Rear and side margins = 3 m.

Earlier, F.S.I. allowed was 1.00. However, only ground floor was constructed after leaving the margins. Now, according to new norms, F.S.I. allowed is increased to 2.00. If three more floors are proposed by the owner, find the additional area to be built on each floor. Assume equal construction on ground, first and second floor.

b) Write briefly : **4**

i) The factors governing selection of a site for a building.

ii) Field test on cement.

3. a) Explain principles of surveying. **4**

b) Explain flexible and rigid pavements. **6**

OR

4. a) Explain various modes transportation. **4**

b) Write short notes on Digital planimeter and Total station. **6**

5. a) Draw a typical layout of a conventional water treatment plant showing the treatment units. State the functions of each unit. **6**

b) A town has population of 20,000 and total quantity of water available for the town per year is 620 million litres. Calculate domestic use of per capita demand. **4**

OR

6. a) Describe watershed management and its necessity. **6**

b) Distinguish between conservancy system and water carriage system of collection of wastes. **4**

7. Write short notes on : **10**

i) Role of Engineers in sustainable development.

ii) Electrical Resistant strain gauges.

OR

8. Explain briefly : **10**

a) SCADA system.

b) Green building.

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B.E. All Branches First Semester (C.B.S.) / B.E. (Fire Engineering) First Semester

Basics of Civil Engineering

P. Pages : 2 **NJR/KS/18/4340**

Time : Two Hours * 0 0 6 0 * Max. Marks : 40

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Due credit will be given to neatness and adequate dimensions.
7. Assume suitable data whenever necessary.
8. Diagrams and chemical equations should be given whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.
10. Use of non programmable calculator is permitted.

1. a) Define the following **3**

i) F. S. I

ii) Carpet Area

iii) Built up Area

b) Explain in detail the principles of building planning. **3**

c) A Plot size of 40mx50ms House owner constructed 750m^2 on ground floor & 650m^2 on first floor. If Permissible FSI is 0.90, How much area can be constructed on second floor? **4**

OR

2. a) What are the various types of shallow foundation & explain any one with neat sketch. **4**

b) Differentiate between load bearing & frame structure. **3**

c) What are the different Grade of cement also explain different types of cement. **3**

3. a) State various types of maps & their uses. **3**

b) Explain the Geographical information system. **3**

c) Explain the principle of surveying. **4**

OR

4. a) What are the different traffic sign & explain any three with neat sketches. **3**

b) What are the causes of Road Accident? **3**

c) Differentiate between rigid pavement & flexible pavement. **4**

5.	a)	State the various sources of water.	**3**
	b)	Draw the flow chart diagram of conventional water treatment plant & mention their uses operation in short.	**4**
	c)	State the standards of purified water.	**3**

OR

6.	a)	Differentiate between gravity dam & earthen dam.	**3**
	b)	Write a short note on rain water Harvesting.	**3**
	c)	Write & explain various methods of collection of solid waste?	**4**
7.	a)	Write & explain various excavating equipment's.	**5**
	b)	What is SCADA? Mention significance.	**5**

OR

8. Write short notes on **any three** **10**

i) Green building

ii) Telemetry

iii) SCADA system.

iv) LEED certification.

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B.E. All Branches / B.E. (Fire Engineering) First Semester (C.B.S.)

Basics of Civil Engineering

P. Pages : 2 **NRJ/KW/17/4340**

Time : Two Hours * 0 9 7 1 * Max. Marks : 40

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Due credit will be given to neatness and adequate dimensions.
7. Assume suitable data whenever necessary.
8. Illustrate your answers whenever necessary with the help of neat sketches.
9. Use of non programmable calculator is permitted.

1. a) Define and Explain. **3**

i) Aspect
ii) Prospect

b) Differentiate between substructure and super structure of any structure. **3**

c) How much construction area can be permitted if the plot size is 40m x 60m and the construction of building is having three storeyed in which ground floor having 700m^2 area and first floor having 500m^2 area. Find out the area to be constructed on second floor if FSI permitted 0.80. **4**

OR

2. a) Define shallow foundation. Classify the various shallow foundation in brief. **5**

b) Explain the different grades of cement. **5**

3. a) Explain the various principles of surveying. **4**

b) Write a note on traffic signals. **3**

c) What is GIS? Explain briefly. **3**

OR

4. a) Enlist the various causes of accidents. **3**

b) Define. **4**

i) Rigid pavements.
ii) Flexible pavements.

c) Write a note on "Total station" in surveying. **3**

5. a) Draw a neat sketch of flow chart of water treatment plant showing the parts and the uses of it. **6**

b) What are the various sources of water? Explain. **4**

OR

6. a) What is gravity dam? Draw the neat sketch showing all the structures involved in it. **5**

b) What is ground water recharge? How artificial recharging done? Explain. **5**

7. a) Write a note on "Green house effect". **4**

b) Write notes on. **6**
i) Power shovel.
ii) Bull Dozer.

OR

8. Write notes on **any three.** **10**
i) Sustainable Development.
ii) Roof Top rain water Harvesting.
iii) Significance of SCADA.
iv) LEED certifications.

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B.E.First Semester All Branches (C.B.S.) / B.E. First Semester (Fire Engineering)

Basics of Civil Engineering

P. Pages : 2 **NKT/KS/17/7200**

Time : Two Hours * 0 2 3 4 * Max. Marks : 40

Notes :
1. Solve Question 1 OR Questions No. 2.
2. Solve Question 3 OR Questions No. 4.
3. Solve Question 5 OR Questions No. 6.
4. Solve Question 7 OR Questions No. 8.
7. Due credit will be given to neatness and adequate dimensions.
8. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.
10. Use of non programmable calculator is permitted.

1. a) Explain in brief principle of planning of Building? **5**

b) What do you mean by Load Bearing structure & framed structure? Differentiate it. **5**

OR

2. a) Define Eco-friendly materials. What are the properties of Eco-friendly materials & Enlist Eco-friendly materials. **6**

b) Determine the carpet Area per floor of a two storeyed building from the following data. **4**

i) Plot Area = 500 M^2

ii) FSI allowed = 1.0

iii) Ratio of carpet Area to Built up area = 0.7

Assume Equal Built up Area per floor.

3. a) Draw cross-section of "National Highway", & Explain classification of roads. **6**

b) What are the Causes of Accident ON Roads. **4**

OR

4. a) Explain various types of surveying maps & their uses? **4**

b) What are the different modern instrument used in surveying? Explain Advantages of any two instruments. **6**

5. a) Define Per Capita Demand. Find quantity of water available on Terrace of Area 100 M^2. Avg. Depth of Rain water is 600 mm. Assume losses 50%. **5**

b) Write detailed notes on Water shed management. **5**

OR

6.	a)	Explain different methods of disposal of solid waste?	**5**
	b)	Draw flow chart of water treatment plant & Explain function of each unit operation.	**5**
7.	a)	What do you mean by sustainable development & Explain role of civil engineer in sustainable development.	**5**
	b)	State & explain various Equipment used in compaction	**5**

OR

8	a)	Write short notes on **any three.**	**10**

i) Green Building

ii) Telemetry

iii) SCADA system

iv) LEED certification.

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B.E.All Branches Semester First (C.B.S.) / B.E. Semester First (Fire Engineering)

Basics of Civil Engineering Paper – V

P. Pages : 2 **KNT/KW/16/7200**

Time : Two Hours * 0 6 3 4 * Max. Marks : 40

Notes : 1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Assume suitable data whenever necessary.
7. Illustrate your answers whenever necessary with the help of neat sketches.
8. Use of non programmable calculator is permitted.

1. a) Explain the scope of Civil engineering in various aspects. **2**

b) What are the various principles of planning.? **4**

c) A plot having size 20 m x 30 m. A building constructed on it occupies 500 m^2 on ground and 400 m^2 on first floor. If permissible F.S.I. is 0.9, How much area can be constructed on second floor? Assume margin of 3m on front side & 2m on all other side. **4**

OR

2. a) What are the various types of shallow foundations and explain any one with neat sketch. **3**

b) Differentiate between load Bearing and framed structures. **3**

c) What are the different grades of cement. Also enumerate the different types of cement. **4**

3. a) State various types of maps and their uses. **3**

b) Explain the Geographical Information System. (GIS). **3**

c) Explain the principles of surveying. **4**

OR

4. a) What are the different traffic signs and explain any three with neat sketches. **3**

b) What are the different causes of road accidents.? **3**

c) Differentiate between rigid pavement & flexible pavement. **4**

5. a) What are the requirements of whole some water? **3**

b) Draw the flow chart of water treatment process. and explain the function of any two units. **3**

c) Calculate per capita demand for the town having population of 8,000 and total quantity of water available for town per year is 350 million liters. **4**

OR

6.	a)	Differentiate between gravity Dam and Earthen Dam.	**3**
	b)	Write a brief note on rain water Harvesting?	**3**
	c)	Write and explain various methods of collections of solid waste?	**4**
7.	a)	Write and explain various excavating equipment's.	**5**
	b)	What is SCADA? Mention its significance.	**5**

OR

8.	a)	What is Telemetry? Mention its Applications.	**3**
	b)	Explain the concept of Green Building.	**3**
	c)	Explain the role of Engineers in sustainable Development.	**4**

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B.E. First Semester (Fire Engineering) (C.B.S.)

Basic of Civil Engineering Paper - V

P. Pages : 1 **TKN/KS/16/7288**

Time : Two Hours * 0 8 5 6 * Max. Marks : 40

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Due credit will be given to neatness and adequate dimensions.
7. Assume suitable data whenever necessary.
8. Illustrate your answers whenever necessary with the help of neat sketches.
9. Use of non programmable calculator is permitted.

1. a) What are the grades of cement? Explain field tests on cement. **5**

b) Explain load bearing structure & frame structure with neat sketches. **5**

OR

2. a) Which factors are to be considered while selecting site. Also explain role of Engineer for development. **5**

b) Abuilding is to be constructed on a plot having dimensions 30m x 45m. If permissible F.S.I. is 1. Calculate total built up area. **5**

3. a) Explain flexible pavement with neat sketch. **4**

b) List out various instruments used in surveying with their uses. **6**

OR

4. a) Explain various types of Traffic signs & Signals. **6**

b) Explain different modes of transportation also explain how roads are classified. **4**

5. a) Explain the different method of solid waste management. **5**

b) Calculate per capita demand for a town of population 80, 000 and availability of supply water in 55 lakhs m^3 per year. **5**

OR

6. a) Find the quantity of water available for harvesting on terrace of area 20,000m^2. Depth of rain water is 1500mm if the loss are 35%. **5**

b) Define watershed management and explain its necessity. **5**

7. a) List out the different equipments used in compaction work. **5**

b) Write short notes on. **5**
i) Distance Measuring instruments. ii) Angle measuring instruments.

OR

8. a) What is meant by LEED certification. **5**

b) Explain SCADA system. **5**

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NTK/KW/15–7288

First Semester B. E. (CBS) Examination

BASICS OF CIVIL ENGINEERING

Time : Two Hours] [Max. Marks : 40

N. B. : (1) All questions carry equal marks.
(2) Assume suitable data wherever necessary.
(3) Illustrate your answers wherever necessary with the help of neat sketches.
(4) Use of Non – Programmable calculator is permitted.

1. (a) What are the general considerations for selection of Site ? 5

   (b) List out the Principles of building planning. Explain any four. 5

OR

2. (a) State various types of buildings with their functions. 4

   (b) A plot is having dimensions 50 m x 60 m. A building constructed on it occupies 700 m^2 on ground floor and 550 m^2 on first floor. If permissible FSI is 0·8, how much area can be constructed on second floor ? 6

3. (a) Explain various Principles of Surveying. 5

   (b) What are the different types of Pavements ? Explain with neat sketch. 5

OR

4. (a) What are the various instruments used in surveying ? Explain Digital Planimeter and Total Station. 6

   (b) Draw a typical cross – section of a Highway. 4

5. (a) Draw flowchart of Water Treatment process and state purpose of each unit. 5

   (b) For a town of population 1 lakh, the per capita consumption is 270 litres / capita / day. Calculate the quantity of supply water required for the town. Also, give the breakage of domestic demand. 5

OR

6. (a) Explain the different types of dams. Draw the cross – section of Gravity dam. 5

   (b) Explain Rainwater Harvesting. 5

7. (a) Explain the concept of Green building. 5

   (b) What are the different types of strain gauges ? Explain Electrical resistance strain gauge. 5

OR

8. (a) Explain Spectrophotometer. 5

   (b) Explain the role of Civil Engineer in Sustainable development. 5