

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Questions: 09

Total No. of Pages: 02

B. Tech. (CE) (Sem. 4)

Concrete Technology

Subject Code: BTCE-401-18

Paper ID:

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

- 1. Section A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
- 2. Section B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
- 3. Section C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

Section – A

Q1.

- a) Explain the difference between bleeding and segregation?
- b) What is meant by shrinkage of concrete?
- c) What is unsoundness of cement?
- d) Explain the different type of slump with sketch only?
- e) What are the advantages of quality control?
- f) What is the effect of creep in concrete?
- g) What are the objectives of concrete mix design?
- h) Write a short note on Accelerating admixture?
- i) Define self healing concrete?
- j) Write short note on concrete in marine environment?

Section – B

Q2. What is curing of concrete? What are the different methods of curing?

Q3. Explain the various types of cracks in concrete structure?

Q4. What are the effects of hot weather on concreting? Briefly describe the recommended practices?

Q5. Explain what are the different types of destructive and non – destructive test of concrete?

Q6. a) Differentiate between fiber reinforced concrete and steel reinforced concrete?

b) What you meant by freezing and thawing?

c) Write short note on efflorescence?

Section - C

Q7. Which are the different stages of manufacturing of concrete? Describe in detail mixing placing and transportation of concrete?

Q8. What you meant by workability? How would you determine workability and also explain what is the factor affecting the workability of concrete?

Q9. Explain in detail what are the different types of special concrete with their advantages and uses?

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Questions: 09

Total No. of Pages: 02

B. Tech. (CE) (Sem. 4)

MATERIAL TESTING & EVALUATION

Subject Code: BTCE-402-18

Paper ID:

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. Section A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. Section B contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. Section C contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

Section – A

Q1

- a) Name commercial forms of ferrous metals.
- b) What is Fineness modulus?
- c) What is pig iron?
- d) What are Refractory bricks?
- e) What code is used for practice & guideline for Bitumen?
- f) What is the composition of plastics?
- g) Define Sound Insulation.
- h) What are Vitrified Tiles?
- i) Give the uses of mild steel.
- j) What are the properties of distempers?

Section – B

- Q2. What are the characteristics of good bricks?
- Q3. Explain what do you mean by quality control of concrete.
- Q4. Draw a flow diagram, showing various stages in the manufacturing of Portland cement by wet process.
- Q5. What are the type of tests for soil? Explain briefly any one with procedure, data collection and results.
- Q6. Explain different type of Glass with their application in buildings.

Section - C

Q7. Explain the seasoning process of Timber and defects of Timber.

Q8. Explain the working of Bull's Trench kiln with the help of diagram.

Q9. What are the codes of practice and guidelines for Timber, Glass and Plastics?

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Questions: 09

Total No. of Pages: 02

B. Tech. (CE) (Sem. 3)
HYDROLOGY AND WATER RESOURCES ENGINEERING

Subject Code: BTCE-403-18

Paper ID:

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. Section A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. Section B contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. Section C contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

Section - A

Q1

- a) Differentiate between frontal and non frontal precipitation
- b) Define Dalton's law of evaporation.
- c) What is mass curve of precipitation?
- d) Sketch Horton curve of precipitation.
- e) What do you understand by synthetic unit hydrograph?
- f) Enlist the various types of canals.
- g) What are infiltration Galleries?
- h) List any four methods to analyse the stability of gravity dams.
- i) What are the various components of earth dam?
- j) What is an isohyet?

Section – B

Q2 Consider the following data, determine the monthly precipitation at gauge X

Rain Gauge	Annual precipitation (mm)	Monthly precipitation (mm)
A	410	24
B	370	23
C	460	31
X	400	?

Q3 What are the limitations of Kennedy's theory of design of canal?

Q4 Describe briefly ogee spillway.

Q5 Describe the method of separation of base flow from total runoff?

Q6 After how many days will you supply water to soil in order to ensure sufficient irrigation of the given crop, if,

- Field capacity of the soil = 28%
- Permanent wilting point = 13%
- Dry density of soil = 1.3 gm/cc
- Effective depth of root zone = 70 cm
- Daily consumptive use of water for the given crop = 12 mm

Section - C

Q 7 Describe double mass curve techniques used to check the consistency of rainfall data and adjust rainfall records.

Q 8 Design and sketch an irrigation channel to carry 10 cumecs. The channel is to be laid on slope of 0.2m per KM. Assume $N=0.025$ and $m=1$.

Q 9 Unit hydrograph ordinates of 4 hour are given below. Find out ordinates of 8hour unit hydrograph

Time	0	4	8	12	16	20	24	28	32	36
U.H.O	0	17	28	42	72	60	47	32	15	0

Roll No.

--	--	--	--	--	--	--	--	--	--

Total No. of Pages: 02

Total No. of Question: 09

B.Tech (CE) (2018 Onwards) (Sem.–4)

TRANSPORTATION ENGINEERING

Subject Code: BTCE-404-18

Paper ID:

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTION TO CANDIDATE:

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.

2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.

3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

4. Assume any missing data suitably

SECTION-A

Q1. Write a short note on:-

- a) Explain the necessity and objects of highway planning.
- b) Give classification of yards?
- c) State any three merits of road transportation over railways.
- d) Write a Short note on WMM
- e) List the various planning surveys in a new highway project.
- f) Give the classification of roads.
- g) What are the various type of rail gauges on world railway?
- h) What is a loading gauge? How is it different from construction gauge
- i) What are the function of ballast?
- j) Draw sketches of runway and taxiway fillets for small airports.

SECTION -B

Q2. Discuss the necessity and effect of coning of wheels?

Q3. How are bituminous pavements maintained?

Q4. What is a wind rose diagram? What is its utility? What are its types?

Q5. What is meant by wear of rails? Categorize the types of rails wear and enumerate the methods by which wear in rails can be measured.

Q6. What are the various survey to be carried out before planning a highway system for a given area? Explain briefly.

SECTION -C

Q7. Write short notes on

a) Lighting of taxiway

b) Express Bus system

c) Mass Rapid transit system

Q8. Name six materials commonly used as ballast on Indian Railways. Write down the specifications for ideal stone ballast

Q9. Enumerate various factors which you would keep in view while selecting a suitable site for an airport.

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Questions: 09

Total No. of Pages: 02

B. Tech. (CE) (Sem. 4)
Disaster Preparedness & Planning
Subject Code: BTCE-405-18
Paper ID:

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. Section A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. Section B contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. Section C contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

Section – A

Q1

- (a) Define and explain disaster with example.
- (b) What is emergency?
- (c) Write the full form: NDMA, SDMA and SAR.
- (d) What is the mechanism of destruction by landslides?
- (e) What is capacity building?
- (f) Write short note on Rehabilitation?
- (g) Write a note on sustainable development model for disaster management.
- (h) Explain application of remote sensing in volcanic eruption.
- (i) State only stages in disaster recovery.
- (j) What is risk? Write down the formula also.

Section – B

Q2 Mention steps to be taken in an emergency and Explain also.

Q3 What is hazard and also explain the causes and modes of hazards?

Q4 What are the benefits of vulnerability mapping?

Q5 Explain the stages in disaster recovery: Emergency relief.

Q6 Explain role of insurance sector in disaster management.

Section - C

Q7. Explain the disaster: (1) Indian Ocean tsunami (2) Flash floods of North India and also explain mitigation measure for this type of disaster.

Q8. Explain the role of NDMA, SDMA and International agencies in disaster management.

Q9 (1) How street plays are effective in spreading information of Disaster awareness?

(2) What are advantages of using GIS in disaster management?