Manmohan Technical Unive Office of the Controller of Exam <b>Exam Year: 2082, Jestha (Model</b>	ersity iinations <b>Question)</b>	Exam Roll:							
School: SOE	-	Level: BE		Invigilat	Invigilator's Sign:				
Program: BCE	Year/Part: III	'II	Superintendent's Sign:						
Subject: Transportation Engine	ering II (EG	651CE)		Code No					
i. Answers should be given b ii. The main answer sheet ca GROUP A (Multiple-Choice Questions	y filling the M n be used for	ultiple-Choice ( rough work. <b>[10x</b> 1]	Questions' Answer S	> heet.	Code No.	e: 20 Minute			
<ol> <li>The basic objective of traffic er achieve?         <ol> <li>Rapid Flow of Traffic</li> <li>Efficient, free and rapid with least priority given</li> <li>Provide safe, convenient movement of vehicles ar</li> <li>All of the above</li> </ol> </li> <li>AADTs are used in several traffi transportation analysis for         <ol> <li>Measurement of current</li> <li>Evaluation of the econon highway project.</li> <li>Development of parking</li> <li>None of the above</li> </ol> </li> <li>What are the special features of         <ol> <li>They were built straight u</li> </ol> </li> </ol>	ngineering is flow of traff to accident. t and econom nd pedestrian ic and demand. mic feasibilit regulations.	s to 6) fic nic n. 7) y of 8) ds?	The interface treavoids of porous sparticles in bitum a. Tack coat b. Seal coat c. Prime Coat. d. Surface Dressi The maintenance  a. Shoulder Pavement c. Subgrade Embankment An existing flex extensive cracks a. Ravelling Cracks c. Shear	atment prov surface and ninous pave ing. works are ible pavem is called	vided to plu to bond loc ement is cal not possibl b. d. ent that dev  b. d.	e for velops Alligator Pot holes			
<ul> <li>a. They were built straight we gradients.</li> <li>b. The soft soil from the top till the hard stratum was readed of the control of the soft of the soft</li></ul>	was removed ched. I section was	1 9) nt 10	The provision of a. reduces right a b. increases right c. reduces right a rear d. reduces rear e right a ) The method of d recommended by a. Group index r	<sup>1</sup> traffic signals at intersection angled and rear collisions t angled and rear end collisions ingled collision but may increase r end collisions and collisions but may increase angled collisions. design of flexible pavement as y IRC is method					
<ul> <li>5) The low volume road are designed</li> <li>a. All weather road</li> <li>b. Fair weather c. Flexible pavement</li> <li>d. Rigid Para</li> </ul>	ed as ther road vement.		<ul> <li>b. b. CBR method</li> <li>c. Westergaard n</li> <li>d. Bankelman be</li> </ul>	od nethod eam method	1				

## Multiple Choice Questions' Answer Sheet

Marks Secured:			
In Words:	Corrected Fill	1. A B C D	6. A B C D
Examiner's Sign: Date:		2. A B C D	7. A B C D
Scrutinizer's Marks:		3. A B C D	8. A B C D
In Words:		4. A B C D	9. A B C D
Scrutinizer's Sign: Date:		5. A B C D	10. A B C D

## Manmohan Technical University Office of the Controller of Examinations Exam Year: 2082, Jestha (Model Question)

		· · · //·····				
School	l: SOE	Level: BE	Т	ime: 3 Hours		
Progra	am: BCE	Year/Part: III/II	F	Full Marks: 50		
Subjec	tt: Transportation Engineering II (EG	on Engineering II (EG651CE) P				
$\checkmark$	Candidates are required to give their a The figures in the margin indicate <b>Ful</b> Assume suitable data if necessary.	inswers in their own wor <b>I Marks</b> .	rds as far as practicable.			
GROU	<b>P A</b> (Multiple-Choice Questions in separ	ate paper)		[10×1=10]		
GROU		[8×2=16]				
1.	What are the different types of t	raffic signs and expla	ain any two.			
2.	What are the different methods of	of O-D Survey.				
3.	With neat sketch explain the stru	ictural components o	f pavement.			

- 4. Explain in brief historical development of pavement structures.
- 5. What are the plants used in road construction?
- 6. What are advantages of stone block pavement? .
- 7. Describe slope protection methods.
- 8. Explain in brief about Highway maintenance.
- 9. Describe Mass haul diagram.

## **GROUP C** (Long Answer Questions – Attempt Any Six Questions)

10. Speed observation from a radar speed meter have been taken giving the speeds of the subsidiary streams composing the flow along with the volume of traffic of each subsidiary stream. The readings are as under.

Speed	2	6	10	14	18	22	26	30	34	38	42	46	50	54	58
(kmph)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5	9	13	17	21	25	29	33	37	41	45	49	53	57	61
Vol. of	1	4	0	7	20	44	80	82	79	49	36	26	9	10	3
subsidiar															
y stream															
(veh/hr)															

[4]

- 11. Design the traffic signal by webster method when traffic flow rate at phase 1 is 800veh/hr and phase 2 is 600 veh/hr and saturation flow rate at Phase 1 and 2 are 1800 veh/hr for both. Assume 2 sec of lost time per phase change.
- 12. Explain briefly the various aspects investigated during parking studies. What is the use of these studies?

[4]

13. Design the flexible pavement using CBR curves, given the following data:

[4]

- i. Subgrade soil (Soaked) CBR = 5%
- ii. Laterite Sub base (Soaked) CBR = 15%
- = 95%iii. Water bond macadam base CBR
- iv. Number of heavy vehicles per day in April 2025 = 150= 15 years
- v. Design life
- vi. Annual rate of increase in the heavy vehicles

The road is proposed to be completed in April 2029

- [4]
- 14. Determine the warping stress for a 25cm concrete pavement with 15m transverse joints; width of lane is 3.6m. The modulus of subgrade reaction (k) is 2.8kg/cm2. Assume temperature

= 5%

[6×4=24]

differential for day conditions to be  $1^{0}$ C per cm for computing warping stress at the corner. Take the following values of various factors: Thermal coefficient of concrete ' $\alpha$ ' = 8 x 10-6 per 0 C Modulus of elasticity of concrete 'E' = 2.8 x 105 kg/cm2 Poissons's ratio,  $\mu$  = 0.15 Radius of contact area = 16 cm [4]

- 15. What are the various Rigid pavement failure and methods to repair. [4]
- 16. One question can be added. [4]

THE END