

DIWALIBA POLYTECHNIC
Diploma Civil Engineering

Basics of Civil Engineering

CHAPTER-1 INTRODUCTION

1	The branch deals with study of development, design, construction and maintenance of roadways, railways, airway and waterway is called as...			
	A.	Transportation Engineering	B.	Structural Engineering
	C.	Irrigation Engineering	D.	Environmental Engineering
2	The scope of civil engineering is...			
	A.	Planning, designing	B.	Supervision
	C.	Maintenance work	D.	All above
3	What is a sustainably maintained building?			
	A.	Which uses innovative technology	B.	Which require intensive maintenance
	C.	Which require little energy and attentions for any operation	D.	None
4	The process of fixing the order of execution of different activities during construction is _____			
	A.	Organizing	B.	Scheduling
	C.	Valuation	D.	Estimation
5	Which of the following deals with measurement in vertical plane.			
	A.	Surveying	B.	Town planning
	C.	Levelling	D.	None of the above
6	Civil engineer is mainly responsible for...			
	A.	Construction	B.	Estimation
	C.	Supervision	D.	All of above
7	According to the function of building, school is considered in _____ category.			
	A.	Commercial Building	B.	Residential Building
	C.	Public Building	D.	All of above
8	Which of the following is an example of Assembly building?			
	A.	Church	B.	Hospital
	C.	School	D.	Hotel
9	_____ is the art of determining relative position of points on, above and below the surface of earth.			
	A.	Surveying	B.	Planning
	C.	Levelling	D.	Designing

10	Which factor influencing the location of an industrial building?			
	A.	Economy	B.	Service lines
	C.	Safety	D.	All of the above
11	Which of the following structure is not related to Transportation Engineering?			
	A.	Airport	B.	Harbour
	C.	Dam	D.	Railway Station
12	Which of the following is the scope of civil engineering according to its function?			
	A.	Surveying	B.	Town planning
	C.	Environmental Engineering	D.	None of the above
13	Construction of bridges, tunnels, power station, etc are considered as _____			
	A.	Transportation Engineering	B.	Advance construction
	C.	Structural Engineering	D.	Building material
14	Environmental engineering includes _____			
	A.	Water Supply Engineering	B.	Transportation Engineering
	C.	Geo technical Engineering	D.	Both (a) and (b)
15	Study of soil investigation and testing is related to...			
	A.	Environment Engineering	B.	Structural Engineering
	C.	Geotechnical Engineering	D.	Transportation Engineering
16	Which of the following is an example of Educational building?			
	A.	Church	B.	Hospital
	C.	School	D.	Hotel
17	According to the function of building, school is considered in _____ category.			
	A.	Commercial Building	B.	Residential Building
	C.	Public Building	D.	All of above
18	The infrastructural sector covers a wide range of service of _____			
	A.	Transportation	B.	Water Resources Project
	C.	Power sector	D.	All above
19	Which of the following scale is the smallest one?			
	A.	1cm = 5m	B.	R.F. = 1/5000
	C.	1cm = 5km	D.	1:10000
20	GIS is useful for			
	A.	environmental impact assessment	B.	surveying and mapping
	C.	natural resource management	D.	all of the above
21	The object of surveying is to prepare a			
	A	Drawing	B	Cross section
	C	Sketch	D	Map

22	The main principle of surveying is to work from			
	A	Part to the whole	B	Whole to the part
	C	Higher to lower level	D	Lower to higher level
23	Plan is prepared by taking the cross section at			
	A	Foundation level	B	Sill level
	C	Slab level	D	Lintel level
24	To carry out detail soil investigation is the role of a civil engineers?			
	A.	Yes	B.	No
	C.	Can't say	D.	both
25	Planning of a very large area covering several towns and villages is known as:			
	A.	Town planning	B.	Village planning
	C.	Urban planning	D.	Regional planning
26	General land use planning deals with:			
	A.	Residential	B.	Institutional
	C.	Forests	D.	Commercial
27	Construction of dam come under the category of			
	A.	Advanced construction	B.	Environmental engineering
	C.	Structural analysis & design	D.	Town planning
28	Hydrological cycle come under the category of			
	A.	Advanced construction	B.	Environmental engineering
	C.	Town planning	D.	Water resource engineering
29	Study of pollution & its control comes under the category of			
	A.	Geotechnical engineering	B.	Advanced construction
	C.	Environmental engineering	D.	Water resource engineering
30	Study of traffic engineering comes under the category of			
	A.	Transportation engineering	B.	Environmental engineering
	C.	Structural analysis & design	D.	Geotechnical engineering
31	Study of zoning of land comes under the category			
	A.	Town planning	B.	Structural analysis & design
	C.	Advanced construction	D.	Building planning & construction
32	Investigation of soil & foundation design comes under the category of			
	A.	Town planning	B.	Water resource engineering
	C.	Environmental engineering	D.	Geotechnical engineering
33	Irrigation engineering comes under the category of			
	A.	Transportation engineering	B.	Building planning & construction
	C.	Both (a) & (b)	D.	None of the above

34	Which one is not a public transport mode?			
	A.	Metro	B.	Car
	C.	BRTS	D.	Railway
35	The study of living organism with the environment is known as _____			
	A.	Ecosystem	B.	Ecology
	C.	community	D.	None
36	Built environment means _____			
	A.	Man-made structures	B.	facility
	C.	Features	D.	All
37	Which is not a branch of civil engineering?			
	A.	Data base system	B.	Water resource engineering
	C.	Transportation engineering	D.	Environment engineering
38	How many scope of civil engineering?			
	A.	1	B.	2
	C.	3	D.	4
39	In frame structure, what transfers the load to columns?			
	A.	Wall	B.	Column
	C.	Foundation	D.	Beam
40	Which is not include by professional practice?			
	A.	Estimation	B.	valuation
	C.	costing	D.	Town planning
41	Construction managements includes			
	A.	Planning	B.	supervision
	C.	scheduling	D.	All above
42	Civil engineering includes works with			
	A.	design	B.	Public utility
	C.	Maintenance	D.	All above
43	Contribution of construction industry of it about			
	A.	4.5 of GDP	B.	5.5 of GDP
	C.	6.5 of GDP	D.	7.5 of GDP
44	Tunnelling is required in case of _____			
	A.	Laying pavement	B.	On ground passage
	C.	Laying road	D.	Underground passage
45	The future of transportation is _____			
	A.	Shared	B.	Shared, electric
	C.	Shared ,electric and automated	D.	None

46	How many percent of nations working population is depending for its employment on construction?			
	A.	15%	B.	5%
	C.	25%	D.	10%
47	The branch of engineering which deals with movement of goods & persons from one place to another is known as			
	A.	Geotechnical engineering	B.	Water resource engineering
	C.	Transportation engineering	D.	Environment engineering
48	_____, travelled way on which people, animals or wheel vehicles move.			
	A.	Roads and highways	B.	Sea way
	C.	airways	D.	Water way
49	Which method of achieving energy efficiency in building?			
	A.	Material and construction technique	B.	Renewable energy
	C.	Building orientation	D.	All above
50	Role of civil engineering is a _____			
	A.	Good transportation facilities	B.	Well planned water supply
	C.	Good infrastructure	D.	All above

CHPATER-2 SURVEYING AND LEVELLING

1	The last reading taken from the dumpy level instrument is called:			
	A.	End sight	B.	Free sight
	C.	Fore sight	D.	Back sight
2	The vertical distance above or below the datum is called _____			
	A.	R.L. of point	B.	HI
	C.	Elevation of point	D.	None of these
3	The compass box is made up of _____			
	A.	Iron	B.	Brass
	C.	Aluminium	D.	Steel
4	The object of surveying is to prepare a _____			
	A.	Drawing	B.	Cross section
	C.	Sketch	D.	Map
5	Which of the following deals with measurement in vertical plane.			
	A.	Surveying	B.	Town planning
	C.	Levelling	D.	None of the above
6	Up to how much area the curvature of earth can be neglected?			
	A.	100 km ²	B.	450 km ²
	C.	250 km ²	D.	300 km ²
7	Up to how much area the curvature of earth can be neglected?			
	A.	100 km ²	B.	450 km ²
	C.	250 km ²	D.	300 km ²
8	The longest of the chain line used in making survey is _____			
	A.	Base line	B.	Tie line
	C.	Datum line	D.	Check line
9	_____ is the art of determining relative position of points on, above and below the surface of earth.			
	A.	Surveying	B.	Planning
	C.	Levelling	D.	Designing
10	Direct ranging is possible only when the stations are			
	A.	Close to each other	B.	Not more than 100 m apart
	C.	Mutually inter visible	D.	Located at highest points in the sea
11	Prismatic compass is more accurate than surveyors compass?			
	A.	True	B.	False
12	The graduated ring and needle are free to move independently in			

	A.	Surveyors compass	B.	Prismatic compass
	C.	Both (a) and (b)	D.	None
13	In geodetic surveying, the curvature of earth is taken into consideration			
	A.	True	B.	False
14	Invar tape is made of an alloy of _____			
	A.	copper and steel	B.	brass and nickel
	C.	brass and steel	D.	steel and nickel
15	In a whole circle bearing system N 25° 15' W corresponds to			
	A.	115° 15'	B.	154° 45'
	C.	205° 15'	D.	334° 45'
16	The principal of surveying is to work from			
	A.	Higher level to lower level	B.	Part to whole
	C.	Lower level to upper level	D.	Whole to part
17	_____ map shows hills, valleys, rivers, forest, towns, etc.			
	A.	Cadastral	B.	Political
	C.	Topographical	D.	None
18	Which of the following deals with measurement in vertical plane.			
	A	Surveying	B	Town planning
	C	Levelling	D	None of the above
19	The vertical distance above or below the datum is called _____			
	A.	H.I	B.	R.L. of point
	C.	Elevation of point	D.	None of these
20	_____ is used for marking of station.			
	A.	Peg	B.	Offset Rod
	C.	Plumb bob	D.	Level
21	Which of the following instrument is inserted into ground after every chain length?			
	A.	Peg	B.	Arrow
	C.	Ranging rod	D.	Offset rod
22	Which survey is used for measurement of horizontal angles.			
	A.	Chain Survey	B.	Plane table Survey
	C.	Compass Survey	D.	Control Survey
23	To fix new station or point, we required minimum _____ from reference stations.			
	A.	1 angle & 1 linear measurement	B.	2 linear measurement
	C.	2 angular measurement	D.	All above
24	A fixed point of reference of known elevation is called			
	A.	Change point	B.	Bench Mark

	C.	Station point	D.	None of the above
25	The site plan is generally prepared in the scale of.			
	A.	1 cm = 50 cm	B.	1 cm = 5 m
	C.	1 cm = 5 m	D.	1 cm = 50 m
26	Line ranger is used for_____			
	A.	To fix intermediate points	B.	Marking
	C.	To measure distance	D.	Centering
27	If the scale of map is 1cm = 5 km ,then it is known as ...			
	A.	Small scale	B.	Large scale
	C.	Medium scale	D.	None
28	The process of a location of intermediate points on a survey line is:			
	A.	Aligning	B.	Extending
	C.	Ranging	D.	Offsetting
29	The error which occurs in same direction and tend to accumulate are known as			
	A.	Instrumental	B.	Compensating
	C.	Climatic	D.	Cumulative
30	If the chain is too small, then measured length will be _____ and correction will be _____.			
	A.	more, negative	B.	less, positive
	C.	less, negative	D.	more, positive
31	The prismatic compass measures _____ system of bearing.			
	A.	WCB	B.	RB
	C.	Both	D.	None
32	If the WCB of a line lies in second quadrant then to calculate RB ,we need_____			
	A.	RB =WCB	B.	RB=WCB-180°
	C.	RB=180° -WCB	D.	Can not say
33	RB value of 315 °?			
	A.	315 °	B.	N 45 ° W
	C.	N 85 °W	D.	None
34	WCB is defined as horizontal angle measured from north to given line in _____ direction.			
	A.	Anticlockwise	B.	Clockwise
	C.	Bothe	D.	None
35	The least count of levelling staff is _____			
	A.	5 cm	B.	5 mm
	C.	1 cm	D.	1 mm
36	Plane and geodetic surveying are classifications of surveying based on:			

	A.	Methodology	B.	Instrument
	C.	Earth's curvature	D.	Object of survey
37	An offset is a _____ distance of an object measured from the survey line.			
	A.	Lateral	B.	Horizontal
	C.	Normal	D.	Inclined
38	Which of the below is not an instrument used to set right angles?			
	A.	Cross staff	B.	Site square
	C.	Optical staff	D.	Prism square
39	How many types of chains are used in chain surveying?			
	A.	4	B.	5
	C.	6	D.	8
40	Survey stations may be marked on the ground using a:			
	A.	Pole	B.	Rod
	C.	Pointer	D.	Peg
41	How many types of a compass are used in surveying?			
	A.	4	B.	2
	C.	3	D.	6
42	How many categories of levelling staff are there?			
	A.	2	B.	3
	C.	4	D.	5
43	Which of the below is used to make a line of sight horizontally in a level?			
	A.	Foot screws	B.	Levelling head
	C.	Telescope	D.	Tangent screws
44	How many methods are used in levelling?			
	A.	3	B.	2
	C.	4	D.	5
45	Which is the arithmetic check for the height of instrument method?			
	A.	$\sum FS + \sum BS = \text{First RL} + \text{Last RL}$	B.	$\sum BS - \sum FS = \text{Last RL} - \text{First RL}$
	C.	$\sum FS + \sum BS = \text{Last RL} + \text{First RL}$	D.	$\sum BS - \sum FS = \text{First RL} - \text{Last RL}$
46	How many types of bench mark are there?			
	A.	3	B.	2
	C.	4	D.	5
47	Which of the below is not a classification of surveying?			
	A.	Marine	B.	Basement
	C.	Astronomical	D.	Land
48	Which of the below is not a means of linear surveying methods?			

	A.	Theodolite	B.	EDM
	C.	Tape	D.	Chain
49	A 100 ft long chain is a _____			
	A.	Gunter's Chain	B.	Engineer's Chain
	C.	Revenue Chain	D.	Steel Band
50	The simplest instrument used for setting right angles is a _____			
	A.	Cross staff	B.	Optical square
	C.	Prism square	D.	Site square

CHPATER-5 BASICS OF TRANSPORTATION ENGINEERING

1	Traffic sign indicating speed limit is categorized in			
	A.	Regulatory	B.	Warning
	C.	Informatory	D.	Prohibitory
2	What is provided to road surface to drain of the rain water from the road surface?			
	A.	Kerb	B.	Footpath
	C.	Right of way	D.	Camber
3	The main objective of transportation is?			
	A.	Transport of goods	B.	transport of passengers
	C.	Generate revenue	D.	Safe economical and efficient transport of goods and passengers
4	Which is the most flexible type of transportation available?			
	A.	Roadway	B.	Waterway
	C.	Railway	D.	Airway
5	Which of the following types of roads are most preferred for highways?			
	A.	Cement concrete roads	B.	Gravel roads
	C.	Bituminous roads	D.	Unpaved surfaces
6	A part of land that is acquired during the initial stages of construction for future expansion is called _____			
	A.	Kerb	B.	Footpath
	C.	Right of way	D.	Camber
7	Which type of road is not consider in Village road?			
	A.	RCC road	B.	Kachcha road
	C.	Both (a) and (b)	D.	None of above
8	The layer which is constructed above embankment is called _____			
	A.	Sub-base	B.	Base
	C.	Subgrade	D.	Fill
9	The materials not included in highway construction are _____			
	A.	Stone	B.	Soil
	C.	Dust	D.	Petrol
10	The most raised portion of the pavement is called _____			
	A.	Super raiser	B.	Curve
	C.	Crown	D.	Kerb
11	Which of the following structure is not related to Transportation Engineering?			
	A.	Airport	B.	Harbour

	C.	Dam	D.	Railway Station
12	Which component hold the rails to proper gauge?			
	A.	Rail	B.	Sleeper
	C.	Ballast	D.	Track
13	What is full form of VR?			
	A.	Village Road	B.	Vikas Road
	C.	Vital Road	D.	None
14	_____ divides a highway into two sets of traffic lanes.			
	A.	Shoulder	B.	Kerb
	C.	Pavement	D.	Median
15	Which component provides stability to railway track?			
	A.	Sleepers	B.	Ballast
	C.	Rail	D.	Gauge
16	The indicators that may be marked for visible outline of the road is called _____			
	A.	Roadway indicator	B.	Roadway delineator
	C.	Roadway line	D.	Roadway makers
17	Road lighting is _____			
	A.	Advantage for users	B.	Disadvantage for users
	C.	Economically profitable	D.	Obstruction for users
18	The basic requirement of alignment should be _____			
	A.	Short	B.	Easy
	C.	Safe	D.	Short, easy, safe and economical
19	The clearance time in traffic signal is indicated by _____			
	A.	Red	B.	Amber
	C.	Green	D.	White
20	The most superior material used in road is _____			
	A.	Base	B.	Surface
	C.	Sub-base	D.	Soil
21	The role of transportation in national development is ...			
	A.	Economic	B.	Industrial
	C.	Social	D.	All above
22	The advantages of road transport are:			
	A.	Offers quick and assured deliveries	B.	High employment potential
	C.	Helps in the growth of trade	D.	All above

23	BG has length _____mm			
	A.	1676	B.	762
	C.	1000	D.	610
24	The dis-advantage of rail transportation are			
	A.	Cheap	B.	Initial cost is high
	C.	Handle heavier load	D.	Seasonal fluctuation in traffic
25	U-turn prohibited is			
	A.	Regulatory	B.	Warning
	C.	Informatory	D.	None
26	The traffic sign which gives information to road users are known as...			
	A	Regulatory	B.	Warning
	C	Informatory	D.	Prohibitory
27	_____divides a highway into two sets of traffic lanes.			
	A.	Shoulder	B.	Kerb
	C.	Pavement	D.	Median
28	India is one of countries which still adhere to the			
	A.	Keep to the left	B.	Keep to the right
	C.	Both	D.	None
29	What is dimension of Metre Gauge?			
	A.	1000	B.	762
	C.	1676	D.	610
30	How many types of pavement surfaces are there?			
	A.	2	B.	4
	C.	5	D.	6
31	Which material is used as ballast?			
	A.	Sand	B.	Cement
	C.	Gravel	D.	None of above
32	The current road length in India is in which position in the world?			
	A.	1st	B.	3rd
	C.	2nd	D.	4th
33	Which type of roads can be utilized during monsoon?			
	A.	Unpaved roads	B.	Gravel roads
	C.	Fair weather roads	D.	Bituminous roads
34	The roads that connect the district headquarters to important city of other state is called_____			

	A.	NH	B. MDR
	C.	SH	D. ODR
35	The improper alignment of road will not result in _____		
	A.	Increase in construction cost	B. Increase in accidents
	C.	Increase in maintenance cost	D. Increase of population
36	The transportation system that requires a low initial investment among the following is?		
	A.	Roadway	B. Waterway
	C.	Railway	D. Airway
37	The main purpose of providing camber is _____		
	A.	For drainage purposes.	B. To maintain equilibrium
	C.	To follow IRC specifications	D. To follow geometric specifications
38	The minimum width of carriage way in urban roads is _____m શહેરી માર્ગોમાં વાહનોની લઘુત્તમ પહોળાઈ _____ મી છે.		
	A.	2.5	B. 3
	C.	3.5	D. 3.75
39	The basic objective of traffic engineering is to achieve _____		
	A.	Efficient, free and rapid flow of traffic with least priority given to accidents	B. Efficient, free and rapid flow of traffic with fewer accidents
	C.	Efficient and rapid flow of traffic	D. Rapid flow of traffic
40	The boundary till which building activities on road are prohibited is called _____		
	A.	Right of way	B. Boundary line
	C.	Building line	D. Control line
41	STOP sign is having _____		
	A.	Octagonal shape	B. Circular shape
	C.	Triangular shape	D. Any shape
42	What is full form of ODR?		
	A.	Ordinary District Road	B. Other District Road
	C.	Other Dense Road	D. None of above
43	In the initial stage of construction which type of pavement is cheap?		
	A.	Flexible	B. Composite
	C.	Rigid	D. WBM
44	The characteristics of efficient transport means it is		
	A.	Slowest	B. Irregular
	C.	Cosiest	D. Comfortable
45	"Give way" sign is a type of _____		
	A.	Regulatory	B. Warning

	C.	Informatory	D.	None
46	Which one is not use as water crafts?			
	A.	Barge	B.	Sailboat
	C.	Steamers	D.	None
47	Which is not contributed to the development of any country by Transportation?			
	A.	Economic	B.	Entertainment
	C.	Industrial	D.	Cultural
48	Good transportation not include...			
	A.	Comfortable	B.	Economical
	C.	Unsafe	D.	Convenient
49	Transportation term means...			
	A.	System of conveyance	B.	System of leisure
	C.	System of comfort	D.	All of them
50	Which is the mode of transportation?			
	A.	Airways	B.	Waterways
	C.	Railways	D.	All of them
51	Roads utilized during monsoon is			
	A	Unpaved roads	B.	Gravel roads
	C	Fair weather roads	D.	Bituminous roads