Vidya Academy of Science & Technology Technical Campus
Accredited by NAAC with 'B++' Grade
"A Unit of Vidya International Charitable Trust"

Department of Civil Engineering

S8 - Even Semester Question Bank

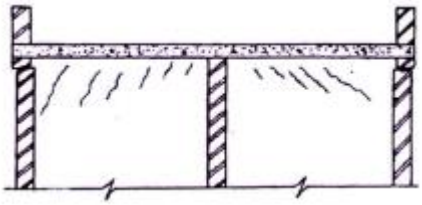
VIDYA ACADEMY OF SCIENCE AND TECHNOLOGY TECHNICAL CAMPUS, KILIMANOOR, THIRUVANANTHAPURAM - 695602
(Accredited by NAAC with 'B++' grade)

Department of Civil Engineering

QUESTION BANK - S8

CET456 - Repair and Rehabilitation of Buildings

MODULE I

1.	a) Differentiate between functional and aesthetical damages in buildings. b) List any six causes for cracks in buildings	KTU May 2024 QP	3 Marks 3 Marks
2.	a) Human errors can be regarded as the main cause of building failures. Justify. b) Identify the type of failure shown in figure below. Discuss the characteristics and causes of such failure 	KTU May 2024 QP	7 Marks 7 Marks
3.	a) Explain the causes for foundation settlement in buildings. b) Explain efflorescence in concrete structures. What are the causes for it?	KTU May 2024 QP	8 Marks 6 Marks
4.	Give a detailed account of the causes of damage in masonry structures.	KTU Jun 2023 QP	14 Marks
5.	Differentiate between retrofitting and rehabilitation.	KTU Oct 2023 QP	3 Marks
6.	Suggest any three methods for controlling cracks in buildings.	KTU Jun 2023 QP	3 Marks
7.	With a neat sketch, explain out-of-plane failure of masonry walls and mention how to prevent it?	KTU Jun 2023 QP	3 Marks
8.	Explain the various causes of cracking in concrete buildings.	KTU Oct 2023 QP	14 Marks
9.	Which are the possible ways by which damages to masonry buildings can be controlled?	KTU Oct 2023 QP	14 Marks
10.	Explain the various types of cracks in R C building.	KTU Jun 2023 QP	14 Marks

MODULE II

1.	a) Prepare a check list for visual inspection of buildings for damage assessment. b) Explain the working principle of Rapid Chloride Penetration Test, with neat sketch	KTU May 2024 QP	6 Marks 8 Marks
2.	a) Describe the two types of pullout tests for concrete. Discuss its suitability	KTU May 2024 QP	8 Marks

	b) Explain the factors affecting the penetration resistance in concrete		6 Marks
3.	a) Differentiate Nondestructive and Semi-destructive testing methods, giving examples b) What are the advantages and limitation of carbonation depth measurement in concrete?	KTU May 2024 QP	3 Marks 3 Marks
4.	How does rebound hammer test help in assessing quality of concrete?	KTU Oct 2023 QP	3 Marks
5.	What is proof load test? Why do we conduct it?	KTU Oct 2023 QP	3 Marks
6.	How does the ultrasonic pulse velocity (UPV) value relate to the quality of concrete? Illustrate the relation using the range of values for UPV.	KTU Jun 2023 QP	3 Marks
7.	Carbonation depth test is useful for ascertaining the corrosion resistance of concrete. Justify the statement.	KTU Jun 2023 QP	3 Marks
8.	a) Explain the test procedure for 1) Windsor Probe test 2) Pull out test b) What is the purpose of conducting half-cell potential test for reinforced concrete? Draw a schematic diagram for the test set up marking its component parts.	KTU Oct 2023 QP	8 Marks 6 Marks
9	Outline the assessment procedure for a damaged structure using a flow chart and explain the various steps involved.	KTU Oct 2023 QP	14 Marks
10	Explain the detailed procedure for core sampling and testing of existing concrete structures.	KTU Jun 2023 QP	14 Marks

MODULE III

1.	a) How is strength and porosity related to each other? b) What are the two methods for quality check in concreting works	KTU May 2024 QP	3 Marks 3 Marks
2.	a) What are the causes for sulphate attack in concrete? What are the measures to control it? b) How does physical properties of aggregate affect the strength and durability of concrete?	KTU May 2024 QP	8 Marks 6 Marks
3.	a) How does exposure to higher temperature affect the strength of concrete? b) Explain surface preparation for steel reinforcement repairing works	KTU May 2024 QP	6 Marks 8 Marks
4.	Which are the external and internal factors affecting durability of concrete?	KTU Oct 2023 QP	3 Marks
5.	List the various surface preparation methods for repairing.	KTU Oct 2023 QP	3 Marks
6.	Explain the thermal properties of concrete.	KTU Jun 2023 QP	3 Marks
7.	What is the effect of thickness of concrete cover on durability of concrete?	KTU Jun 2023 QP	3 Marks
8.	Explain the major factors which cause corrosion to reinforcement in concrete	KTU Oct 2023 QP	14 Marks
9	Explain the behavior of concrete at elevated temperature.	KTU Oct 2023 QP	14 Marks
10	Explain rapid chloride permeability test, water permeability test, sorptivity test and oxygen permeability test for ascertaining the durability of concrete	KTU Jun 2023 QP	14 Marks

MODULE IV

1.	a) Elaborate on various factors that influence selection of materials for building repair. b) What is a Self Compacting Concrete (SCC)? What are the specific tests conducted for SCC to measure its flowability?	KTU May 2024 QP	6 Marks 8 Marks
2.	a) What is a Fibre Reinforced Concrete? What are the factors affecting its properties? b) Discuss on the use of industrial wastes in concrete, as replacement of its constituents.	KTU May 2024 QP	6 Marks 8 Marks
3.	a) Differentiate between Guniting and Shortcreting. b) What are the applications of quick setting compounds?	KTU May 2024 QP	3 Marks 3 Marks
4.	Differentiate between routine maintenance and preventive maintenance.	KTU Oct 2023 QP	3 Marks
5.	What is fibre reinforced concrete? Why do we prefer fibre reinforced concrete as a repair material than ordinary concrete?	KTU Oct 2023 QP	3 Marks
6.	Differentiate between self-compacting concrete and self-healing concrete.	KTU Jun 2023 QP	3 Marks

7.	Write short notes on: 1) Shotcreting and guniting 2) High performance concrete 3) Geopolymer concrete 4) Reactive powder concrete	KTU Oct 2023 QP	3 Marks 4 Marks 4 Marks 3 Marks
8	a) Enumerate the desirable properties of repair materials b) Explain the various types of protective coating for reinforcement	KTU Oct 2023 QP	6 Marks 8 Marks
9	a) Write detailed notes of (1) Expansive cement (2) Vacuum concrete (3) Sulphur infiltrated concrete (4) FRP sheets	KTU Jun 2023 QP	3 Marks 4 Marks 4 Marks 3 Marks
10	a) Explain (1) Preventive maintenance (2) Remedial maintenance (3) Routine maintenance (4) Special maintenance b) Elucidate the methodology for selecting the repair materials.	KTU Jun 2023 QP	8 Marks 6 Marks

MODULE V

1.	a) Explain different types of shoring with neat sketches. b) Explain jacketing method of strengthening columns and beams. What are the different materials used for jacketing?	KTU May 2024 QP	8 Marks 6 Marks
2.	a) Describe any two methods for prevention of corrosion in buildings. b) Explain the process of implosion by delayed detonation	KTU May 2024 QP	6 Marks 8 Marks
3.	a) Differentiate between shoring and scaffolding. b) Explain the concept of top down method of building demolition.	KTU May 2024 QP	3 Marks 3 Marks
4.	Explain cathodic protection of reinforcement bars.	KTU Oct 2023 QP	3 Marks
5.	Differentiate between explosive and non-explosive demolition techniques. List any two equipments used for non-explosive demolition.	KTU Oct 2023 QP	3 Marks
6.	Explain with a neat sketch, how stitching of cracks is carried out	KTU Jun 2023 QP	3 Marks
7.	What is the purpose of corrosion inhibitors? Give an example for corrosion inhibitor.	KTU Jun 2023 QP	3 Marks
8.	a) Explain any three types of column jacketing with neat figures b) Explain shoring and underpinning	KTU Oct 2023 QP	9 Marks 5 Marks
9	a) How will you restore fire damaged structural components? b) Write short notes on (1) Wrecking ball method (2) Concrete sawing (3) Hydraulic crusher	KTU Oct 2023 QP	8 Marks 6 Marks
10	a) Explain the rehabilitation procedure for foundation b) What is overlay? What is its purpose?	KTU Jun 2023 QP	8 Marks 6 Marks

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QUESTION BANK

CET 464 - AIR QUALITY MANAGEMENT

Module – 1

Sl. No.	Question	Marks	Question Paper
1.	a.What is greenhouse effect and how does it contribute to climate change? b.Define air pollution and identify the major sources of air Pollution c.Discuss the London Smog episode with special reference to its cause, atmospheric conditions and its impact.	3 3 6	KTU June 2023 (2019 Scheme) KTU May 2024 (2019 Scheme)
2.	a) Explain the criteria pollutants and their sources. b) Describe the health effects of exposure to ozone and sulphur dioxide.	8 6	KTU June 2023 (2019Scheme)
3.	Explain the history of air pollution episodes and their impact on public health and the environment	8	KTU Model Qn paper
4.	a) What is air pollution? b) Name three sources of indoor air pollutants.	3 3	KTU Oct 2023 (2019 Scheme)
5.	Give a classification of the different types of air pollutants based on different criteria with suitable examples	7	KTU Oct 2023 (2019 Scheme)
6.	What are the criteria air pollutants?	5	KTU Dec 2018 (2015 Scheme)
7.	Explain greenhouse effect.	7	KTU DEC 2019 (2019 Scheme)
	Give a classification of the different types of air pollutants based on different criteria with suitable examples.	7	
8.	What are the different industrial processes causing pollution	3	
9.	Explain primary and secondary air pollutant with example.	6	KTU Sep 2020
10.	Explain components of atmosphere.	5	KTU Sep 2020

Module – 2

1.	What are the National Ambient Air Quality Standards (NAAQS)?	3	KTU Oct 2023
2.	What is the greenhouse effect and how does it contribute to climate change?	3	KTU Oct 2023
3.	Discuss the effects of indoor air pollutants	7	KTU Oct 2023
4.	Discuss the effects of air pollutants on human health	7	KTU Oct 2023

5.	Describe the effect of air pollution on environment.	**9**	**KTU Oct 2023 (2019 Scheme)**
6.	Write a short note on effect of air pollution on vegetation	**5**	**KTU Oct 2023 (2019 Scheme)**
7.	Explain effect of carbon monoxide on human health.	**4**	**KTU APR 2018 (2015 Scheme)**
8.	What are the sources of indoor air pollution?	**3**	**KTU Model**
9.	Explain effect of air pollution on human health and plants.	**8**	**KTU Sep 2020**
10.	What is acid rain? How do air pollution lead to the formation of it? Compare the sources and effects of Carbon monoxide and particulate matter in the ambient air	**3** **14**	**KTU May 2024**

Module – 3

1.	Enumerate the assumptions in Gaussian plume model. Define inversion .Explain different types of inversion.	**5** **10**	**KTU Sep 2020**
2.	Explain Pasquill's stability curves.	**3**	**KTU DEC 2019 (2015 Scheme)**
3.	Explain the causes and effects of different types of inversions. Classify and compare the atmosphere based on different stability conditions.	**6** **6**	**KTU 2024**
4.	Explain temperature lapse rate	**7**	**KTU 2024**
5.	Explain with neat sketches various plume behavior. Write short note on atmospheric stability	**10** **5**	**KTU Sep 2020**
6.	Explain the effect of meteorological factors on dispersion of air pollutant.	**9**	**KTU Sep 2020**
7.	Explain advantages and disadvantages of Gaussian plume model.	**6**	**KTU Sep 2020**
8.	What do you mean by Lapse rate? Explain the three types of lapse rate Describe how atmospheric temperature changes with pressure. List the meteorological factors that influence the air pollutant dispersion.	**4** **3**	**KTU MAY 2019** **KTU May 2024**
9	Define isokinetic sampling and its significance.	**3**	**KTU May 2024**

Module – 4

1.	Briefly explain Emission Inventory.	**5**	**KTU DEC 2019 (2015 Scheme)**
2.	Explain the different methods for the collection of gaseous air pollutants.	**8**	**KTU DEC 2019 (2015 Scheme)**

3.	Explain various methods used for the sampling of particulate air pollutants.	**10**	**KTU MAY 2019 (2015 Scheme)**
4.	Explain the devices used for sampling gases and vapours	**8**	**KTU MAY 2019 (2015 Scheme)**
5.	Describe the various control methods for the removal of gaseous pollutants.	**15**	**KTU DEC 2019 (2015 Scheme)**
6	Justifu the need of setting ambient air quality monitoring How is Grab sampling done in air pollution monitoring?	**3** **3**	**KTU May 2024**
7	Discuss any four methods for sampling particulate matter in ambient air How does emission inventory help in air quality management Explain the application of an Electrostatic Precipitator in air sampling.	**7** **7** **7**	**KTU May 2024**

Module – 5			
1.	Write short notes on scrubbing.	**3**	**KTU DEC 2019 (2015 Scheme)**
2.	List the different methods for controlling the particulate air pollutants.	**3**	**KTU DEC 2019 (2015 Scheme)**
3.	Explain the working of an Electrostatic precipitator for particulate emission control.	**10**	**KTU DEC 2019 (2015 Scheme)**
4.	Explain various methods used for the control of particulate air pollutants.	**9**	**KTU MAY 2019 (2015 Scheme)**
5.	Discuss the advantages and disadvantages of scrubbers	**10**	**KTU MAY 2019 (2015 Scheme)**
6.	Explain the different methods for controlling gaseous emission		
7	Write a note on combustion as air pollution control method. Illustrate the working of cyclone separator	**3** **3**	**KTU May 2024**
8	Enlist any four types of scrubbers used in air pollutant control. Distinguish wet scrubbers from dry scrubbers. Explain the working of fabric filter. Compare its merits and demerits. List the various measures to control gaseous air pollutants. Discuss any two in detail.	**6** **8** **14**	**KTU May 2024**

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DEPARTMENT OF CIVIL ENGINEERING
QUESTION BANK
CET458 - SUSTAINABLE CONSTRUCTION

MODULE I

Sl. No.	Questions	Marks	Question Paper
1	Define Global warming and state the reasons. Describe the major impacts and responses to Global Warming	15	KTU May 2024
2	a. Write a short note on embodied carbon. b. Demonstrate Environmental Impact Assessment.	3 3	KTU June 2023
3	a. Define the term Green Building. Explain the features of green buildings. b. Describe the methods for estimation of carbon foot print.	5	Model Question
4	a. Assume that you are assigned to conduct the Life Cycle Assessment of a building. What steps would you follow to carry out the LCA of the building? b. Discuss embodied energy of a product.	8 6	KTU June 2023
5	a. Explain any one sustainability indicator in detail b. Explain the impacts of global warming and discuss how you can contribute to reducing global warming.	8 6	KTU June 2023
6	Explain sustainability with respect to social, economical, environmental concept.	12	Model Question
7	a. Define Sustainable Development. b. What is carbon credit? Explain in not more than five sentences.	5 6	Model Question
8	Explain in detail about advantages and short comings of green buildings.	10	Model Question
9	Describe the features of sustainability indicators	5	Model Question
10	What is environmental impact assessment? Why is EIA important for sustainability?	14	Model Question

MODULE II

1	What are the major processes of Recycling of used materials in to new products? Explain on five major types of recyclables in building construction.	15	KTU May 2024
2	a. Compare adobe and cob construction a. What are insulated concrete forms? Where is it used?	3 3	KTU June 2023

3	a. Discuss the initiatives of GRIHA in alternative materials development. b. List out the various types of agro and industrial wastes and explain their properties	5 9	Model Question
4	a. Discuss any three alternative building materials/technologies developed and promoted by TERI b. Deliberate any five sustainable materials that can be made from utilization of wastes.	5 9	KTU June 2023
5	a. Explain any three natural building materials b. What do you mean by hydraform? What are the benefits of using hydraform in construction?	9 5	KTU June 2023
6	a. Explain the properties and uses of sustainable building materials b. Enumerate the properties of wood-based materials that make it sustainable	10 4	Model Question
7	Discuss the role of various Govt and non-Govt organizations in promoting sustainable building materials	14	Model Question
8	Explain the application of waste materials in building construction	10	Model Question
9	What is mud stabilization? Explain the different stabilization techniques for mud	10	Model Question
10	a. Explain the application of locally available materials in building construction b. Define prefabrication.	3	Model Question

MODULE III

1	a. Explain the applications of bamboo in building construction b. Describe Brick arch foundation with neat sketches	10	Model Question
2	a. Differentiate between ferrocement and ferro-concrete b. What is ferrocement construction?	3	Model Question
3	a. Explain the contributions of COSTFORD in promoting sustainable construction. b. What are the advantages of Mivan construction technique?	8 6	KTU June 2023
4	a. Explain the concept of filler slab roofing systems. b. Discuss the role of Habitat in propagating cost-effective constructions.	7 7	Model Question
5	a. Explain the role of ferrocement in sustainable construction with its advantages and disadvantages. b. Explain arches and their benefits	9 5	KTU June 2023
6	Explain the alternative technologies used in green building.	8	Model Question
7	a. What do you mean by Rat-trap bond? Draw a neat sketch of the Rat-trap bond. b. What are the benefits of using pre-engineered construction?	3 3	KTU June 2023
8	a. List out the merits and demerits of prefabricated construction. b. What is Cob construction?	5	Model Question
9	Explain the various innovative roofing techniques with the help of neat sketches	10	Model Question
10	Discuss the contribution of Nirmithi kendra and Coastrord in sustainable building constructions.	10	Model Question

MODULE IV

1	Explain salient provisions used in IGBC green rating system.	12	KTU May 2024
	a) Discuss the role of NBC in sustainable building construction a. Describe net zero building	3	Model Question
2	Discuss the features of energy efficient buildings based on (i) institutional case study (ii) commercial case study iii) residential case study	9	Model Question
3	Explain the possibilities of non conventional energy sources.	10	Model Question
4	Describe the need for the Energy Conservation.	10	Model Question
5	Discuss the relevance of energy efficient technologies in HVAC systems.	10	Model Question
6	Explain LEED and GRIHA with the help of suitable examples.	10	Model Question
7	a. Illustrate the importance of the National Building Code. b. What are building-integrated photovoltaics?	3 3	KTU June 2023
8	What is purpose of green rating system and explain its objectives?	8	Model Question
9	a. Explain about any fully solar energy based building in India. b. Explain the passive cooling techniques in green buildings	8	Model Question
10	a. State different rating systems for Green building. b. Explain salient provisions used in IGBC green rating system.	8 10	Model Question

MODULE V

1	a) Explain BIM. b) What are the benefits of BIM?	14	KTU May 2024
2	List the components of building automation system	3	Model Question
3a	Enumerate the role of building automation in energy conservation	5	Model Question
b	Describe the implementation of BIM in construction scheduling.	9	Model Question
4a	Illustrate the application of building automation in water conservation	5	Model Question
b	Explain the process of BIM in cost optimisation.	9	Model Question
5	Explain the concepts and benefits of BIM	8	Model Question
6	Explain the applications of BIM in construction management	10	Model Question
7	What are the applications of automation for functional efficiency of buildings	10	Model Question
8	What is the role of ICT in sustainable development?	8	Model Question
9	Explain the concepts of building automation.	5	Model Question
10	Explain the components of building automation system	10	Model Question

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CET 402-QUANTITY SURVEYING AND VALUATION

Module – 1

Sl. No.	Question	Marks	Question Paper
1.	List down various types of estimates	**10**	KTU DEC 2023
2.	List out the roles and responsibilities of quantity surveyor at various stages of construction.	**10**	KTU AUH 2024
3.	Develop unit rate of the work (DSR item No. 4. | .4). providing and laying in position | :2:4 (| Cement : 2 coarse sand (zone-lll) derived from natural sources : 4 graded Stone ag-eregate 40 mm nominal size derived from natural sources) cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : MATERIAL : 0.52 cu-m 40mm nominal size of stone aggregate @ Rs.l300/cu.m., 0.22cu.m 20mm nominal size of stone aggregate @ Rs.l400/cu.m.. 0.1 lcu.m lOmm nominal size of stone aggregate @ Rs.l350/cu.m..0.445cu.m of coarse sand (Zone-lll) @Rs.1500/cu.m.. 0.2225 cu-m Portland cement @ Rs.5000/tonne. LABOUR :0.10 Mason @Rs.749/day; 1.63 Beldar @ Rs.645/day, 0.70 Bhisri @ Rs.Tl4idar'. CARRIAGE pROvtSIoNS: Srone ag-sregate 40mm nominal size and above Rs. 178.l9 /cu.m.: Stone aggregate below 40mm nominal size Rs. 163-93 icu.m.: coarse sand @Rs.l63.93rcu.m. and for cement @ Rs'145.72ltonne. HIRE CHARGES of concrere mixer 0.07@Rs.g00/da-,-. Vibrator 0.07(@Rs.35o/day. SUNDRTES . LS. I 3.52@Rs.2. 1 2	10	KTU AUG 2024
4.	What is meant by specification, explain about general specification of first class building?10 marks (KTU SEP 2020)	**10**	KTU AUG 2023
5.	What is meant by overhead charges? Givelfre percentage adopted for the contractor's profit (3) and overhead in CPWD DSR 2021 rate analysis	**5**	KTU DEC 2022
6.	Briefly describe about Detailed specification of earth work excavation?10 marks (KTU JULY 2019)	**5**	KTU DEC 2022
7.	Work out the specification for the following items 10 marks (KTU SEP 2020) Earth work for road in embankment & Painting of three coats		KTU AUG 2021

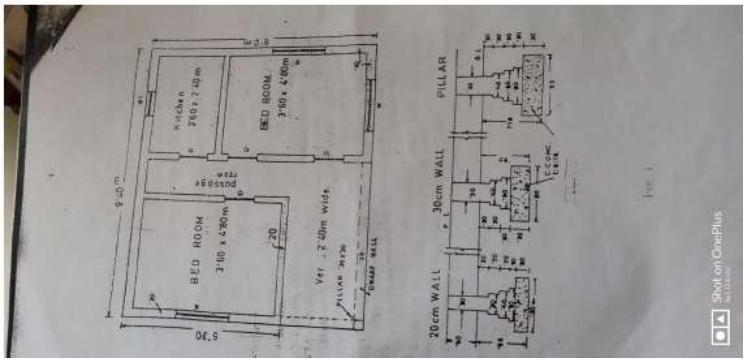
CET 402-QUANTITY SURVEYING AND VALUATION

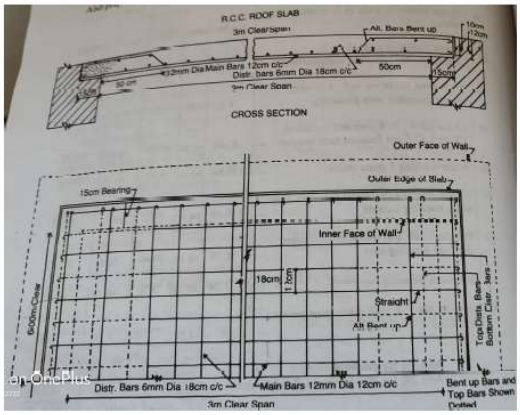
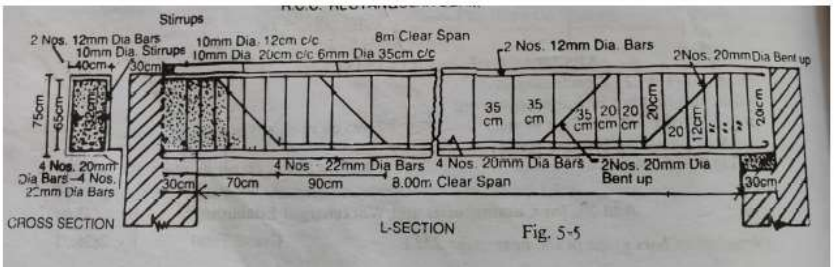
Module – II

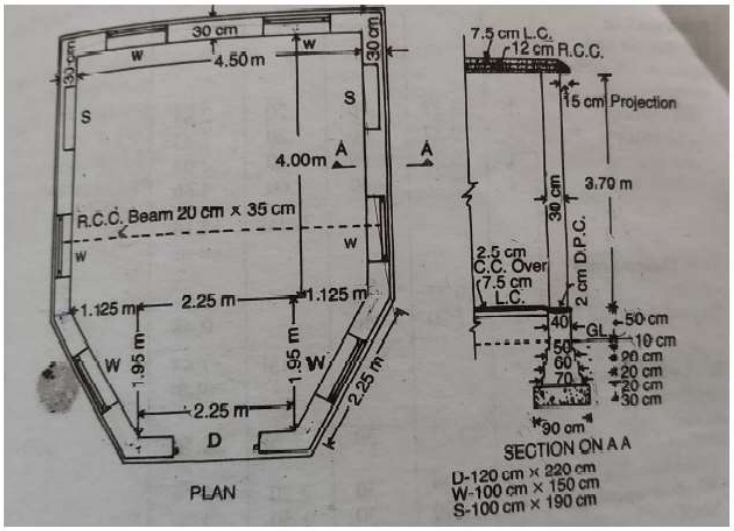
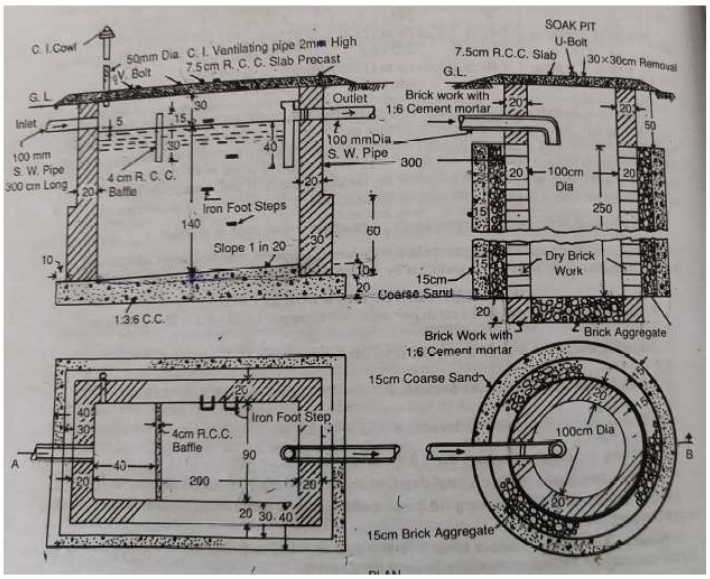
<table>
<tr><th>Sl. No.</th><th>Question</th><th>Marks</th><th>Question Paper</th></tr>
<tr><td>1.</td><td>Work out unit rate for the following work
<table>
<tr><td>Material</td><td>Quantity</td><td>Rate</td></tr>
<tr><td>Broken stone</td><td>0.90 cu.m</td><td>550/cu.m</td></tr>
<tr><td>Sand</td><td>0.45 cu.m</td><td>600/cu m</td></tr>
<tr><td>Cement</td><td>330 kg</td><td>4300/ton</td></tr>
<tr><td>Mason</td><td>0.20</td><td>550/no</td></tr>
<tr><td>Men</td><td>4.50</td><td>550/no</td></tr>
</table></td><td>10</td><td>KTU DEC 2022</td></tr>
<tr><td>2.</td><td>(a) List out the roles and responsibilities of quantity surveyor at various stages of construction. (b) Differentiate between day work and prime cost with examples.</td><td>10</td><td>KTU AUG2024</td></tr>
<tr><td>3.</td><td>Explain the detailed specification for reinforced cement concrete with reference to CPWD</td><td>10</td><td>KTU AUG 2021</td></tr>
<tr><td>4.</td><td>Calculate the quantities required for work in cement concrete 1:3:6 for 2010 m^3.</td><td>10</td><td>KTU DEC 2022</td></tr>
</table>

CET 402-QUANTITY SURVEYING AND VALUATION

Module – III

<table>
<tr><th>Sl. No.</th><th>Question</th><th>Marks</th><th>Question Paper</th></tr>
<tr><td>1.</td><td>Estimate the quantities of the items of the following items of a residential building
a. Earth work excavation in foundation
b. First class brick work in foundation
c. Lime concrete in foundation
d. Brick work in super structure
e. Dam proof course
f. Plastering in walls
 
</td><td>10</td><td>KTU DEC 2022</td></tr>
</table>

2.	Work out the quantites of steel in a RCC roof slab shown in figure. Also prepare bar bending Schedule 	**10**	KTU AUG2023
3.	Prepare the detailed estimate of RCC beam of 8m clear span and 75x40 cm in section from the given figure. Also prepare a schedule of rates 	10	KTU AUG 2022
4.	Estimate the quantities of the items of the following items of a residential building a. Earth work excavation in foundation b. First class brick work in foundation c. Lime concrete in foundation d. Brick work in super structure e. Dam proof course f. Plastering in walls	**10**	KTU AUG 2024

			
5	Prepare the detailed estimate of septic tank with soak pit from the given figure 		KTU MAY 2024

CET 402-QUANTITY SURVEYING AND VALUATION			
Module – IV			
Sl. No.	**Question**	**Marks**	**Question Paper**
1.	What do you understand by the following 1.Out goings 2.Year's purchase	**10**	KTU DEC 2023
2.	An old building has been purchased by a person at a cost of 30000 excluding the cost of the land. Calculate the amount of sinking fund at 4% interest assuming there further life of the building as 20 years and the scrap value of the buildings as 10% of the cost of purchase	**10**	KTU AUG 2024
3.	It is estimated that the capitalised value of a property is 10 lakhs including water supply, sanitary, electrical installations and the value of the land. if the rate of interest is 6% what shall be the net return from the property? Assume the outgoing to be 10% of the gross income, find the expected rent of the property per month.	10	KTU DEC 2023
4.	What are out goings enumerate the different types of out goings?	**10**	KTU AUG 2023
5.	Write short notes on a. Salvage value b. Obsolescence c. Freehold and lease hold property d. Book value e. Gross income and net income	**5**	KTU MAY 2022
6.	What is depreciation? Explain the various methods to calculate depreciation?	**5**	KTU MAY 2023
7.	Cost of a plot is RS. 60000 and a building costing 250000 have been constructed over it. The building consist of two flats. The owner of the flats expects 12% return on the cost of construction and 8% on the cost of the land. Work out the standard rent for each flat of the building. Life of the building is 75 years. Assume f. Cost of annual repair 1.5% of the cost of construction g. Other outgoings 25% of the net return on the building h. Sinking fund interest 4%.		KTU AUG 2022

VIDYA ACADEMY OF SCIENCE AND TECHNOLOGY
TECHNICAL CAMPUS, KILIMANOOR,
THIRUVANANTHAPURAM - 695602
(Accredited by NAAC with 'B++' grade)

Department of Civil Engineering

QUESTION BANK - S8

CET. 438 - AIRPORT SEAPORT AND HARBOUR ENGINEERING

QUESTION BANK

MODULE I

Sl.No	Questions	Mark	Question paper
1	a. Enlist component parts of an airport. b. How is airport planning affected by aircraft turning radius?	3 3	KTU June 2023 (2019 scheme)
2.	a. Discuss the factors to be considered for airport site selection. b. Discuss the ideal requirements of airport layout.	7 7	KTU June 2023 (2019 scheme)
3	a. What are the classification as per ICAO? b. Explain the various aspects to be taken care of while planning an airport as per ICAO.	7 7	KTU June 2023 (2019 scheme)
4	a. List the various parts of an aircraft and explain each. b. What are the aircraft characteristics?	6 8	KTU June 2023 (2019 scheme)
5	Differentiate between hanger and apron.	3	KTU June 2023 (2019 scheme)
6	a. What are the planning process as per FAA and ICAO? b. Classify the airport as per ICAO.	5 6	KTU Model Question
7	What are the requirements of an ideal airport layout?	7	KTU May 2024 (2019 Scheme)
8	Mention the purpose of taxiway and apron in airport.	3	KTU May 2024

			(2019 Scheme)
9	Briefly explain characteristics of airport.	7	KTU May 2024 (2019 Scheme)
10	How are airports classified under ICAO standards.	3	Model Question

MODULE II

Sl.No	Questions	Mark	Question paper
1	Calculate the actual length of runway from the following data. Airport elevation R.L. 100. Airport elevation temperature 28 degree celcius. Basic runway length 600m. Highest point along the length R.L. 98.2. Lowest point along the length R.L. 95.2. Standard atmospheric temperature at MSL 15 DEGREE CELCIUS.	6	KTU June 2023 (2019 scheme)
2	a. List the different types of runway patterns with the help of diagrams. b. Explain any one method of fixing orientation of runway using windrose diagram.	5 9	KTU June 2023 (2019 scheme)
3	a. What are the factors affecting basic runway length? b. Explain runway orientation and wind coverage.	5 9	KTU June 2023 (2019 scheme)
4	Explain the procedure for fixing orientation of runway using wind rose diagram.	9 5	KTU May 2024 (2019 Scheme)
5	a. Lis the factors to be considered in the design of runway. b. Define approach zone.	6 4	KTU May 2024 (2019 Scheme)
6	Explain cross wind component and calm period.	3	KTU June 2023 (2019 scheme)
7	Distinguish between approach zone and clear way.	3	KTU June 2023 (2019 scheme)
8	Explain basic runway length and mention the assumptions.	10	Model Question
9	What are the various factors to be considered during geometric design of runway?	7	KTU May 2024 (2019 Scheme)

10	Explain zoning laws.	10	Model Question

MODULE III

1	What are the objectives of traffic control?	3	KTU June 2023 (2019 scheme)
2	a. Explain the features of lighting of runway approaches.	3	KTU June 2023 (2019 scheme)
3	a. Discuss the various features of Instument Landing System. b. Write short note on navigational and systems in air traffic control.	7 7	KTU June 2023 (2019 scheme)
4	a. Explain in detail about runway markings. b. How are 1} runway threshold marking and 2} runway central line markings executed on a typical airport?	7 7	Model Question
5	a. Explain the role of control system and control network? b. Explain in detail the visual aids used.	9 5	KTU June 2023 (2019 scheme)
6	Describe the essential characteristics of runway approach lighting systems with neat sketch	8	KTU May 2024 (2019 Scheme)
7	a. What do you mean by runway touchdown zone marking? b. What are the advantages of lighting the runway?	3 3	Model Question
8	Explain the lighting arrangements done in taxiway and apron.	7	KTU May 2024 (2019 Scheme)
9	Explain the role of air traffic control centres and control towers in safe airport operations.	7	KTU May 2024 (2019 Scheme)
10	What is wind direction indicator?	10	KTU May 2024 (2019 Scheme)

MODULE IV

1	a.What are the factors affecting the selection of site for harbour? b. Explain the requisites of good harbour.	7 7	KTU June 2023 (2019 scheme)
2	Draw the layout of harbour and mark salient features.	3	KTU June 2023 (2019 scheme)

3	Distinguish between piers and wharfs.	3	KTU June 2023 (2019 scheme)
4	What are the various forces acting on a breakwater? Also explain how break waters are classified.	7	KTU May 2024 (2019 Scheme)
5	Explain the functions of i.) Light house ii.) Buoys iii.) Beacon signals in a harbour	7	KTU May 2024 (2019 Scheme)
6	Explain the necessity and function of navigational aids.	10	Model Question
7	a. Briefly discuss the design and construction aspects of breakwater. b. Explain the features of quays and jetties.	3 3	KTU June 2023 (2019 scheme)
8	Discuss briefly about marine surveys conducted in harbour planning.	7	KTU May 2024 (2019 Scheme)
9	a. Write down the classification of breakwater. b. Explain the components of harbour.	7 7	Model Question
10	What are the principles of harbour planning?	12	Model Question

MODULE V

1	What are the facilities provided in a wet dock	7	KTU May 2024 (2019 Scheme)
2	a.Explain types, functions and design considerations of wet docks. b.Explain floating dock and graving dock.	7 7	KTU June 2023 (2019 scheme)
3	a.Explain the features and design considerations of dry dock. b.Explain working of wet docks in tidal basind with help of diagram.	7 7	KTU June 2023 (2019 scheme)
4	How are the openings to docks handled? Mention their features and requirements.	3	KTU May 2024 (2019 Scheme)
5	What are docks and what are the purposes of docks?	3	KTU May 2024 (2019 Scheme)

6	Explain the operation of lock gates and passage.	6	Model Question
7	Explain the design considerations of dry docks.	3	Model Question
8	What is the difference between dock and port?	3	KTU May 2024 (2019 Scheme)
9	Explain the functions of a dock.	3	Model Question
10	What do you mean by repair of docks?	3	Model Question