

GUJARAT TECHNOLOGICAL UNIVERSITY

BE-6 SEMESTER – OLD PAPER – S22 TO W25 – QUESTION BANK

Subject Name & Code:

TWO & THREE WHEELER TECHNOLOGY (3160212)

Unit 1: Introduction

Repeated Questions:

1. Draw the layout of two wheelers. (W25 - Q1b, 04 marks) (W24 - Q1b, 04 marks)
2. Classify three wheeler and two wheeler. (S24 - Q5b, 04 marks) (S25 - Q5b, 04 marks)
3. Differentiate between two and three wheeler. (S24 - Q5c, 07 marks) (S25 - Q5c, 07 marks)
4. Differentiate between sports bike, cruiser bike and street bike. (S23 - Q1c, 07 marks)

Other Important Questions:

1. Define (1) Belt drive (2) Chain drive (3) Shaft drive. (W23 - Q4a, 03 marks) (S24 - Q5a, 03 marks) (S25 - Q5a, 03 marks)
 2. Draw the layout of passenger rickshaw. (W25 - Q5a, 03 marks) (S23 - Q5a, 03 marks)
 3. Explain the importance of side car in two wheeler? (W23 - Q5a, 03 marks)
 4. List out different gear shifting mechanism used in two and three wheelers. (W24 - Q4a, 03 marks)
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Unit 2: Power Plant

Repeated Questions:

1. Explain different cranking mechanism employed in two and three wheeler. (W23 - Q3c, 07 marks) (S24 - Q1c, 07 marks) (S25 - Q1c, 07 marks) (W24 - Q2 OR, 07 marks)
2. Explain scavenging used in two wheeler. / Define scavenging and explain it for two wheeler. (W25 - Q5a, 03 marks) (S23 - Q1a, 03 marks) (W23 - Q1a, 03 marks) (W22 - Q1a, 03 marks)
3. Explain Construction and working of four stroke petrol engine with a neat diagram. (W24 - Q1c, 07 marks) (W25 - Q3 OR c, 07 marks)
4. Explain the construction and working of a carburetor with diagram. (S23 - Q4 OR c, 07 marks) (W23 - Q4c, 07 marks)
5. Explain the port timing diagram for two stroke engine. (W23 - Q3b, 04 marks) (W22 - Q3b, 04 marks) (W24 - Q4b, 04 marks)
6. List out scavenging methods. Explain loop scavenging system. (S24 - Q2 OR c, 07 marks) (S25 - Q2 OR c, 07 marks)
7. Compare mist and splash lubrication system. (S24 - Q2c, 07 marks) (S25 - Q2c, 07 marks)
8. Explain the types of lubricants. (W25 - Q2b, 04 marks)
9. State the criteria considered to select engine for two wheeler. (S24 - Q2b, 04 marks) (S25 - Q2b, 04 marks)

Other Important Questions:

1. Explain working of two stroke engine. (S24 - Q1b, 04 marks)
2. Write the constructional and functional difference between two stroke and four stroke SI engine? (W25 - Q3a, 03 marks)
3. Classify Engines used in two and three wheelers. (W24 - Q1a, 03 marks)
4. Define following terms. 1. Carburation 2. Scavenging 3. Air cooling system. (S24 - Q3a, 03 marks) (S25 - Q1a, 03 marks)
5. Define (1) Valve over lapping (S25 - Q1a, 03 marks)
6. Write a short note on different types of cooling system in two-wheeler. (W25 - Q2c, 07 marks)
7. Discuss about the white smoke and black smoke exhaust. (W25 - Q2a, 03 marks)
8. Write a note on fuel injection system. (W24 - Q3b, 04 marks)
9. What do you understand by scavenging? List out advantages of scavenging. (W24 - Q3a, 03 marks)
10. Justify the need of venturi in carburetor. (S25 - Q2a, 03 marks)
11. Explain role of carburetor in two wheeler. (S24 - Q2a, 03 marks)
12. Define following terms. 1. Compression ratio (S24 - Q5a, 03 marks)
13. List out and compare different cooling system used in two and three wheelers. (W24 - Q5a, 03 marks)
14. Explain Different types of fuel supply systems. (W25 - Q5c, 07 marks)
15. Explain different type of carburetor used in two wheelers in detail. (W24 - Q3c, 07 marks)
16. Enlist the causes and remedies: engine consumes more fuel. (W22 - Q2b, 04 marks)
17. What are the possible causes of more fuel consumption in two wheeler and give its remedies. (W23 - Q4a, 03 marks)
18. Discuss the any one lubrication system used for 4-stroke engine. (W22 - Q1b, 04 marks)
19. Which modification is required to use CNG in three wheeler? / Discuss the modification required for CNG conversion. (S23 - Q3b, 04 marks) (W23 - Q4b, 04 marks) (W22 - Q5b, 04 marks) (W25 - Q4b, 04 marks)

Unit 3: Transmission

Repeated Questions:

1. Write a short note on CVT-Continuously Variable Transmission of Two-wheeler. (W25 - Q1c, 07 marks) (S23 - Q3b, 04 marks) (W22 - Q4b, 04 marks)
2. Explain gear shifting mechanism in bike. (W25 - Q1a, 03 marks) (W23 - Q3a, 03 marks)
3. Explain the multi plate clutch used in two wheeler with neat sketch in detail. (S23 - Q2 OR, 07 marks) (W22 - Q1c, 07 marks) (W24 - Q4c, 07 marks)
4. Justify the need of multi-plate clutch in motor cycle. / Give the advantages of multiplate clutch over single plate clutch. (W23 - Q5b, 04 marks) (S24 - Q4b, 04 marks) (S25 - Q3b, 04 marks) (W22 - Q5a, 03 marks)
5. Compare chain drive and gear drive for two wheeler. (S23 - Q3a, 03 marks) (W22 - Q2a, 03 marks) (W23 - Q5a, 03 marks)
6. Explain the Clutch release mechanism. (W25 - Q3b, 04 marks)
7. Difference between the chain drive, belt drive and shaft drive. (W25 - Q3 OR b, 04 marks)
8. Draw and explain the layout of two wheeler transmission system and label it. (S24 - Q3c, 07 marks) (S25 - Q3c, 07 marks)

Other Important Questions:

1. Explain Dog clutch with neat sketch. (W23 - Q2a, 03 marks)
 2. Explain constant mesh gear box with neat sketch. (W23 - Q5b, 04 marks)
 3. Explain the double declutching in constant mesh gear box. (W22 - Q3b, 04 marks)
 4. Explain the working of differential in three wheelers with sketch. (W23 - Q3c, 07 marks)
 5. Explain the working principle of differential mechanism used in three wheeler. (W22 - Q3c, 07 marks)
 6. Draw the layout of three wheeler transmission system and label it. (S25 - Q3c, 07 marks)
 7. Explain construction and working of Continuously variable transmission (CVT) with a neat diagram. (W24 - Q3c, 07 marks)
 8. Explain Gear shift mechanism for two wheeler. (S23 - Q2b, 04 marks)
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Unit 4: Steering and Suspension System

Repeated Questions:

1. Define steering terms. (1) Rake angle (2) Trail (3) Offset distance. (S24 - Q1a, 03 marks) (W24 - Q4a, 03 marks) (S25 - Q3a, 03 marks)
2. Explain front telescopic suspension system with sketch. (W23 - Q5c, 07 marks) (S24 - Q5c, 07 marks) (S25 - Q5c, 07 marks)
3. Explain mono suspension used in two wheeler with sketch. (S24 - Q3 OR c, 07 marks) (S25 - Q3 OR c, 07 marks)
4. State the function of suspension system. (S24 - Q4a, 03 marks) (S25 - Q4a, 03 marks)
5. Write a note on design consideration for two wheeler suspension system. (W24 - Q5b, 04 marks)
6. Explain the types of suspension system with the help of neat sketch for two wheeler vehicles. (W25 - Q4c, 07 marks)

Other Important Questions:

1. Explain shock absorber construction and working principle. With neat sketch. (S23 - Q4 OR c, 07 marks)
2. Explain the working principle of shock absorber with neat sketches. (W22 - Q5c, 07 marks)
3. Define following terms. (1) Shock absorber (2) Spring (3) Frame / (3) Steering fork. (S24 - Q3 OR a, 03 marks) (S25 - Q3 OR a, 03 marks)
4. Explain construction and working of spring and shock absorber with a neat diagram. (W24 - Q5c, 07 marks)
5. Explain construction of handle bar used in motorcycles. Also list down some of the standard size parameters. (S23 - Q3c, 07 marks)
6. Explain handlebar control, instruments and indicators used in two wheelers in detail. (W24 - Q4c, 07 marks)

Unit 5: Brakes, Wheels and Tires

Repeated Questions:

1. Differentiate between tube tyre and tubeless tyre. (S23 - Q2a, 03 marks) (W22 - Q4b, 04 marks) (W23 - Q4a, 03 marks) (W24 - Q2b, 04 marks)
2. Explain the disc brake used in bikes with neat sketch. (W23 - Q2c, 07 marks) (W22 - Q2 OR, 07 marks)
3. Explain the drum brake with neat sketch. (W22 - Q2c, 07 marks) (W24 - Q2c, 07 marks)
4. Differentiate between drum and disk brake. (S24 - Q4c, 07 marks) (S25 - Q4c, 07 marks)
5. Discuss the spoke wheel and alloy wheel. (W25 - Q3 OR a, 03 marks) (W22 - Q4a, 03 marks)
6. Compare disc brakes with drum brakes. (S23 - Q4a, 03 marks)
7. Explain spoke wheel and split disk wheel. (S23 - Q4b, 04 marks) (S24 - Q3 OR b, 04 marks)
8. Explain the anti lock braking system (ABS) for two wheeler vehicle. (W25 - Q5b, 04 marks) (W24 - Q4b, 04 marks)

Other Important Questions:

1. Compare spokes wheels, alloy wheels and pressed wheels. (W23 - Q2 OR, 07 marks)
 2. Briefly explain Construction details of tires with neat sketch. (W23 - Q1b, 04 marks)
 3. Explain the types of tires and types of wheels. (W25 - Q3c, 07 marks)
 4. List out different types of frames used in two wheelers. (W24 - Q5a, 03 marks)
 5. Draw the brake circuit layout for two and three wheeler. (W23 - Q3a, 03 marks)
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Unit 6: Frame for Two Wheelers

Repeated Questions:

1. State the design consideration for frame. / Write down on design considerations for frame. (W25 - Q4a, 03 marks) (S23 - Q4b, 04 marks) (S24 - Q3b, 04 marks) (S25 - Q4b, 04 marks)
2. Explain the types of frame for two wheeler with neat sketch. (W25 - Q5c, 07 marks)

Other Important Questions:

1. State the material used for frame. (S24 - Q4 OR a, 03 marks) (S25 - Q4 OR a, 03 marks)
 2. Define following terms. (1) Shock absorber (2) Spring (3) Frame. (S24 - Q3 OR a, 03 marks)
 3. Explain ergonomic considerations for body work of two and three wheelers. (S23 - Q4c, 07 marks)
 4. Explain ergonomic consideration for two wheeler design. (S24 - Q5b, 04 marks) (S25 - Q5b, 04 marks)
 5. Write a note on ergonomics considerations for two and three wheelers. (W24 - Q5b, 04 marks)
 6. Explain the design requirements of racing bikes. (W22 - Q5b, 04 marks)
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Unit 7: Electrical Systems and Instruments

Repeated Questions:

1. Explain the construction and working of lead-acid battery. (W23 - Q1c, 07 marks)
2. Explain battery used in two wheeler in short. / Write a note on Two wheeler Battery. / Briefly short note on battery using in two wheeler vehicles. (W22 - Q3a, 03 marks) (W24 - Q2a, 03 marks) (W25 - Q4 OR a, 03 marks)
3. Explain the magneto ignition system for two wheeler in short. (S23 - Q3 OR a, 03 marks) (W22 - Q3 OR a, 03 marks)
4. Explain difference between battery and magneto ignition system. (S24 - Q4c, 07 marks) (S25 - Q5 OR c, 07 marks)
5. Explain the Ignition system and Lighting system for two wheeler. (W25 - Q5b, 04 marks)
6. Explain the battery starting system used in two wheelers. (S23 - Q1b, 04 marks)
7. State main components of battery with their function. (S24 - Q4 OR b, 04 marks) (S25 - Q4 OR b, 04 marks)
8. Explain starting mechanism for two wheeler vehicles. (W23 - Q5c, 07 marks) (W22 - Q4c, 07 marks)

Other Important Questions:

1. Draw the lighting diagram for two-wheeler. (W23 - Q3b, 04 marks)
2. Write note of ignition system of three wheelers. (W24 - Q3b, 04 marks)
3. Discuss the working of electric horn used in two wheelers. (W23 - Q2b, 04 marks)
4. Enlist the various horn mechanism and explain electric horn with neat sketch. (W22 - Q3c, 07 marks)
5. Explain side light indicator in two wheeler in brief. (W22 - Q4a, 03 marks)
6. State the function of following system. 1. Horn 2. Charging system 3. Lighting system. (S25 - Q5a, 03 marks)
7. What is the purpose of helmet and explain any one type of helmet. (S23 - Q5b, 04 marks)
8. Explain the importance of helmet and explain various type of helmet. (W22 - Q4c, 07 marks)
9. Explain Various Safety measures & arrangements for Two & Three wheeler. (S23 - Q3c, 07 marks)
10. Explain preventive maintenance in two and three wheelers. (S23 - Q3c, 07 marks) (W23 - Q4c, 07 marks) (W22 - Q5c, 07 marks)
