

CASE STUDY ON TECHNICAL SPECIFICATIONS OF TATA NEXON ELECTRIC VEHICLE

Under the guidance of

Dr. V.S.Yaliwal

Associate Professor

(Dept. of Mechanical Engineering)

<u>NAME</u>	<u>USN</u>
ADARSH R MAJIGOUDAR	2SD18ME006
AMOGH S KULKARNI	2SD18ME017
AMIT	2SD18ME014

Dr. V.S.Yaliwal
20/12/2021

SDM College of Engineering and Technology, Dharwad -580002
Department of Mechanical Engineering
IMPACT ANALYSIS- 2021-22

Sub: HVT

USN: 25D18ME006

Div: A and B



1. Advantage of using electrical vehicle is All of the Above
(i) No pollution (ii) No fuel consumption (iii) having no clutch (iv) All of the above
2. All are correct vehicle is an example for electrical vehicle
(i) Kia EV6 (ii) Tata Nexon EV (iii) MG ZS (iv) All are correct
3. Are electric vehicle running cost is low
(i) Expensive (ii) low (iii) manageable (iv) None of the above
4. Function of an auxiliary battery in electric vehicles is gives electricity to power vehicle accessories in an electric vehicle
~~(i)~~ gives electricity to power vehicle accessories in an electric vehicle
(ii) gives electricity to power vehicle in an electric vehicle
(iii) gives electricity to power vehicle and accessories in an electric vehicle
(iv) None of the above
5. Function of transmission in electric vehicles is Give the electric traction motor mechanical power to propel the wheels.
~~(i)~~ Give the electric traction motor mechanical power to propel the wheels.
(ii) Containing clutch and gear box.
(iii) power for fueling the traction battery
(iv) None of the above
6. Fuel cell is a device converts chemical energy into electrical energy.
~~(i)~~ fuel cell (ii) Traction motor (iii) Power electronics (iv) None of the above
7. Lithium ion battery has highest energy density
(i) Metal hydride (ii) Lithium ion (iii) Lead-acid (iv) None of the above
8. Electric vehicle catches fire due to All of the Above
(i) thermal runaway continues inside the cell
(ii) heat propagation will trigger the failure of additional batteries
(iii) combustion of leaked gas will release additional heat
~~(iv)~~ All of the above
9. The capacity of a battery is rated in both ii and iii are correct
(i) ampere-hours (Ah) (ii) milliampere-hours (iii) Kilo watts (iv) both ii and iii are correct
10. Demand for Electric Vehicles depend on All are correct.
(i) Regulation of pollution and Battery Technology (ii) Charging Stations (iii) components and materials (iv) All are correct

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IMPACT ANALYSIS- 2021-22

Sub: HVT

USN: 25018ME014

Div: A and B

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Department of Mechanical Engineering
IMPACT ANALYSIS- 2021-22

Sub: HVT

USN: 2018172017

Div: A and B

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IMPACT ANALYSIS OF PEM

SEM: V (B)

Course Title : Theory of Machines (18UMEC500)

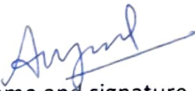
TASK : Demonstration of Physical models of mechanisms

SUMMARY OF ANALYSIS

PERFORMANCE BEFORE IMPEMNTATION	PERFORMANCE AFTER IMPLEMENTATION
60%	94.2%

TOTAL NO. OF QUESTIONS IN THE QUESTIONNAIRE : 5

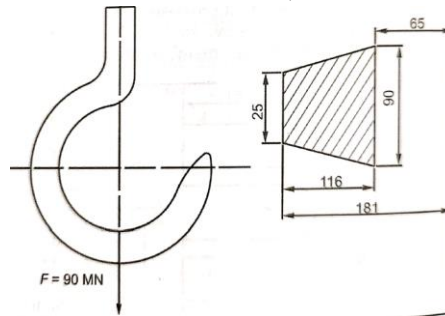
Remarks: The performance enhancement was observed from the above.


Name and signature
(Course instructor)

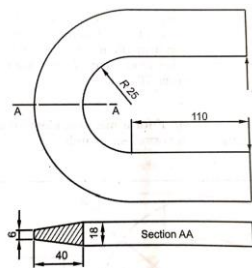
Problem statement:

2SD21ME400	ABHINAV CHIKKAVEERAYYANAVAR.
2SD21ME402	ADITYA P TALIKOTI.
2SD21ME403	ADITYA VIJAY LAKKUNDI.
2SD21ME404	AJAY PAUL S HALLI.
2SD21ME405	AKASH P GODDETI.

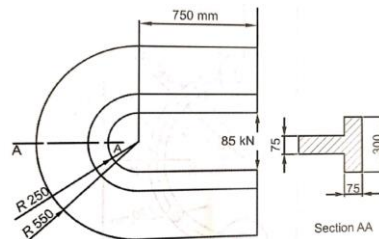
1. Determine the safe load F that the frame of a punch press shown figure below can carry considering the cross-section along section A-A for an allowable stress of 100MPa. What is the stress at the outer fiber for the above load? What will be the stress at the inner fiber, if the beam is a straight beam for the above load?



2. A crane hook has a trapezoidal section is considered for the purpose of stress analysis as shown in the figure below. Determine the maximum stress and their locations



3. The below figure shows a frame of punching machine and its various dimensions. Determine the maximum bending moment and also find the maximum shear stress and its location.



4. Determine the stress in section 60mm x60mm subjected to end couple/bending moment of 2080 N-m in the following cases
 - a. Considering as straight beam
 - b. Beam is curved to a radius of 260mm along centroidal axis
 - c. Beam is curved to a radius of 85mm along centroidal axis

Assignment Group-II

Problem statement:

Design of Spur gear drive system for conventional machine tool which is presently being used in machine shop lab. Students are asked to study the machine tool for various parameters for complete design of gear drive system. Use design data hand book for formulas and required data's.

Group members:

2SD21ME406	AKSHAYKUMAR TURAMARI.
2SD21ME408	BASURAJ NINGAPPA JAGAPUR.
2SD21ME410	DARSHAN S BADIGER.
2SD21ME412	HEMANTKUMAR GONDKAR.
2SD21ME414	KARTIK S KURDEKAR.

Assignment Group-II

Problem statement:

Identify the type of gear and Design complete gear drive system for 4-stroke single cylinder diesel engine which is presently being used in IC Engine lab. Students are asked to study the engine for various parameters for complete design of gear drive system. Use design data hand book for formulas and required data's.

Group members:

2SD21ME416	KIRAN ULLAGADDI.
2SD21ME417	KISHAN DATTANAND RAIKAR.
2SD21ME418	LALITKUMAR B TATUSKAR.
2SD21ME419	MALTESH HIRUR.
2SD21ME423	NAGESH SURESH UNAKAL.

Assignment Group-III

Problem statement:

Identify the type of gears and Design complete gear drive system used in sugarcane crushing machine which is presently being used in the market. Students are asked to crushing machine for various parameters for complete design of gear drive system. Use design data hand book for formulas and required data's.

Group members:

2SD21ME424	PANKAJ G EKABOTE.
2SD21ME426	PRATEEK MAHANTESH NEELGUND.
2SD21ME428	PRAVEEN BASAPPA TUMBRIKOPPA.
2SD21ME429	PRAVEENKUMAR.
2SD21ME431	RAKESH V WALI.

Assignment Group-IV

Problem statement:

Identify the type of gears and Design complete gear drive system for the gear pump which is presently being used for various engineering applications. Students are asked to study the gear pump for various parameters for complete design of gear drive system. Use design data hand book for formulas and required data's.

Group members:

2SD21ME432	RONALDO WALTER KARNAL.
2SD21ME433	SACHIN VASANAD.
2SD21ME434	SAGAR S AYATTI.
2SD21ME435	SAMARJITSINGH RAJPUT.
2SD21ME436	SANTOSH VIJAY KHATAVKAR.

Assignment Group-V

Problem statement:

Identify the type of gears and Design complete gear drive system for the gear motor which is presently being used for various engineering applications. Students are asked to study the gear motor for various parameters for complete design of gear drive system. Use design data hand book for formulas and required data's.

Group members:

2SD21ME439	SHIVANAND MAHADEVAPPA MULIMANI.
2SD21ME441	SHREENIDHI C HANDIGOL.
2SD21ME445	SOHAN SHETTEMMAVAR.
2SD21ME447	SUBRAMANYA M KOTI
2SD21ME448	SUMANT MUNDAGOD.

Assignment Group-VI

Problem statement:

Identify the type of gears and Design complete gear drive system for cement concrete mixture which is presently being used for civil engineering construction applications. Students are asked to study the concrete mixture for various parameters for complete design of gear drive system. Use design data hand book for formulas and required data's.

Group members:

2SD21ME451	VIJAY VEMAN SHALAVADI.
2SD21ME452	VISHAL JADHAV.
2SD21ME453	VISHAL PATIL.
2SD21ME454	VISHALGOUDA N SANKANGOUDRA.
2SD21ME455	VISHWANATH PAVADAYYA MATHAD.


Assignment Group-VII

Problem statement:

Identify the type of gears and Design complete gear drive system for CD drive mechanism of computer which is presently being used in desktop servers. Students are asked to study the CD drive system for various parameters for complete design of gear drive system. Use design data hand book for formulas and required data's.

Group members:

2SD21ME456	BURHAN N PEDEWALE.
2SD21ME460	SAGAR DESAI.
2SD21ME461	SHRINIVASGOUDA PATIL
2SD21ME462	VIJAYAGOUDA GURUSIDDAGOUDA KALAGOUDAR



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