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Srinivas Institute of Technology, Mangaluru  
Department of Automobile Engineering

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## PRINCIPAL'S MESSAGE

I am happy to inform that the Automobile Engineering Department is bringing out the first edition of "Auto Thrust" newsletter for the year 2016-17. This news letter gives information regarding trending technology of automobile industry and departmental activities. I happily congratulate the members of the editorial board for their efforts in bringing out the newsletter. I wish all the best for their future endeavors.

*Dr. Shrinivasa Mayya D.*

## H.O.D'S MESSAGE

I am happy to note that Automobile Engineering department is bringing the First ever issue of the quarterly E-newsletter "Auto Thrust" for the benefit of students and faculty members across all the departments, given its multidisciplinary nature. This newsletter should hence be aimed at igniting interest among all the students and faculty of the institution itself, by judicious blending of articles. Further, the issue should showcase departmental activities in addition to dedicated columns containing technical and academic information. With the launching of this E-newsletter the department of Automobile is going further ahead with its 'Green Initiative'. Given the wide domain of the Auto field, I wish newsletter will attract readers from other departments also and will set its own standard as a model e-newsletter.

*Dr. Ramakrishna N. Hegde*



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*ನಿಮಗೆ ಇಷ್ಟ ಇರದ  
ಕೆಲಸವನ್ನು ಎಷ್ಟು ಚೆನ್ನಾಗಿ  
ಮಾಡುತ್ತೀರಿ, ಎಂಬುದರ  
ಮೇಲೆ ನಿಮ್ಮ ಸಫಲತೆ  
ನಿರ್ಧಾರ ಆಗುತ್ತದೆ.*

## Top 10 Advanced Car Technologies by 2020

### 1. Autonomous Vehicle

Let's just get this one out of the way. Note I didn't say *fully* autonomous vehicle. Why? Because it will take more than 5 years before a car can drive anywhere, at all times, without human oversight. But by 2020 we'll have cars capable of being fully autonomous in certain circumstances, most likely rural interstates with minimal variables (and no inclement weather). Think early days of cruise control.

### 2. Driver Override Systems

This relates to autonomous technology, but it's different because it's the car actively disregarding your commands and making its own decisions. We've already got cars that will stop if you fail to apply the brakes. But by 2020 cars will apply the brakes even if the driver has the gas pedal floored. The rapid increase in sensor technology will force a shift in priority, giving the car final say — not you.

### 3. Biometric Vehicle Access

The switch we've seen in recent years from keys to keyless entry and start will be followed by a switch to key-fob-less entry and start. You'll be able to unlock and start your car without anything more than your fingerprint (or maybe your eyeball, but fingerprint readers are

more likely than retina scanners). Sound a lot like the latest form of cell phone security? It should, because it's exactly the same concept.

### 4. Comprehensive Vehicle Tracking

Insurance companies, and some state governments, are already talking about fees based on how many miles a person drives. By 2020 insurance companies will offer a reduced rate for drivers that agree to full tracking of their behavior. I'm hopeful this technology remains voluntary, but do I foresee a likely future where insurance sector will require comprehensive driver tracking? Sadly, yes.

*Martial Arts were first  
created in India, and later  
spread to Asia by Buddhist*

### 5. Active Window Displays

Head-Up Display (HUD) technology has come a long way from the dim, washed out green digits some cars projected on their windshields 20 years ago. But as good as HUD is in 2015, by 2020 we'll see active glass capable of displaying vibrant images. Imagine a navigation system that actually highlights the next turn (as seen from your perspective, through the windshield) as you approach it

*You can't cross the sea merely by standing and staring at the water.*

## Indian made vehicle specification

### TVS Apache RTR 200

#### Cost

Rs 89,215 to 94,215

Mileage - 35 Kmpl

Engine cc - 197.75 cc

#### Power

20.05 PS @ 8500 rpm

#### Torque

18.1 Nm @ 7000rpm

#### Engine Type

SI 4 Stroke Oil Cooled Single Cylinder

#### Ground clearance

180 mm

*Brain can store 2.5 million giga bytes of data and process information much faster than the fastest super*

*The Automobile industry produced a total 23,960,940 vehicles including passenger vehicles, commercial vehicles, three wheelers, two wheelers and quadricycle in April-March 2016 as against 23,358,047 in April-March 2015, registering a marginal growth of 2.58 percent over the same period*

Auto thrust

Save fuel, water and oxygen for next generation

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## Continued from page 2

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### 6. Remote Vehicle Shutdown

This technology already exists, with On Star leveraging it regularly. In recent years the telematics company has shut down hundreds of stolen cars, ending police chases quickly and with little drama (though most drivers still don't know it can be done, even drivers with OnStar...). By 2020 remote vehicle shutdown will enter the social consciousness, negatively impacting nightly news ratings everywhere.

### 7. Active Health Monitoring

Ford Motor Company has previewed the idea of seatbelt or steering wheel sensors that track vital statistics, though the rapid development of wearable technology means most cars will just wirelessly pair with these devices (think cell phone for your body). Combine this with basic autonomous technology and you've got a car that can pull over and call paramedics when the driver has a heart attack.

### 8. Four-Cylinder Supercar

Ford just showed an all-new GT supercar using a twin-turbo V6. While it may rub traditional performance enthusiasts the wrong way, a lightweight V6 making over 600 horsepower will offer world-beating performance, especially if it's got a light, carbon-fiber body to

pull around. By 2020 we'll see the first full-fledged, 200-plus mph supercar with a four-cylinder engine (cubic inches be damned).

### 9. Smart/Personalized In-Car Marketing

You're already getting Facebook, Twitter and Gmail ads based on your behavior. By 2020 the average car will be fully connected to the internet, meaning your vehicle will provide marketers with a powerful set of metrics to customize their message. Hopefully these will manifest as an opt-in feature, but get ready for personalized, location-based ads in your car's display

### 10. Reconfigurable Body Panels

The small SUV category is seeing increased demand these days, while truck sales grow by leaps and bounds. What if you could have both vehicle types in one car? Imagine an SUV with lightweight body panels and advanced motors that retract the roof and side glass

ಚುಟುಕು

ಬಸ್ ಹೋದ್ದು ಬಸ್ ಸ್ಟಾಂಡ್ ಅಲ್ಲೇ ಇರುತ್ತೆ

ವ್ಹಾ ವ್ಹಾ !!!!!

ಬಸ್ ಹೋದ್ದು ಬಸ್ ಸ್ಟಾಂಡ್ ಅಲ್ಲೇ ಇರುತ್ತೆ

ಆದ್ರೆ ಸೈಕಲ್ ಹೋದ್ರೆ, ಸೈಕಲ್ ಸ್ಟಾಂಡ್ ಜೊತೆಗೆ ಹೋಗುತ್ತೆ !!

ವ್ಹಾ ವ್ಹಾ !!!!!

Ever tried. Ever failed. No matter. Try Again. Fail again. Fail better.

## "Engines" Heart And Soul Of Machines, Is BSIV Expected To Change The Game Play?

In Layman's term, engine of a commercial vehicle is synonymous to the heart in a human body. Everybody knows that it needs to stay healthy with appropriate rest time, also considering the base load and the peak load. Yet, it is one of the most abused organ too. Similar is the case with the "engines" - irrespective of the category of commercial vehicle.

Further, engine development is a process which has never stopped since it's existence. It's a cult community of geeks, designers, manufacturers, integrators and testers. Process seems simple – create hypothesis, develop, validate, iterate, re-validate, test, iterate. However, professionals follow this seemingly simple process and dedicate their lives to create dent in the sky with the “New Engine Technology”.

*Motorola was the first company to produce a handheld mobile phone. On 3 April 1973, Martin Cooper, a Motorola researcher and executive, made the first mobile telephone call from handheld subscriber equipment, placing a call to Dr. Joel S. Engel of Bell Labs.*

Trucks and buses are predominantly powered by heavy duty diesel engines. However, Modern diesel engines are lighter and more powerful, fuel efficient and environment-friendly. Today there are two proven approaches to gear up for the change when India is staring at BSIV.

- Selective Catalytic Reduction (SCR) after-treatment approach
- Exhaust Gas Recirculation (EGR) with diesel oxidation catalyst or open filter

Which approach to work upon is driven by a number of objectives “Overall cost over the service life of a vehicle and the closely related factor of efficiency in transportation.” However, most of us are aware that the later objective in India through the lens of on-ground practical efficiency was being

managed by “Overloading” against OEMs recommendations.

In today's time, the focus is also on further reduction in fuel consumption, e.g. by means of downsizing and down speeding or evaluating alternate fuels. These changes affect component stress in the valve train system. To keep the engine affordable, components should be kept simple. Further complexity comes into play with the combustion chamber and maintenance of temperatures, charge cycles and electrification. To top it all, service life requirements need to be taken care of, considering how price sensitive the Indian market is.

So primary question is in the hands of engine R&D experts. When they begin, they first have to choose the approach to develop on. Answer comes from the market itself, which market is the engine being developed for? What is the outlook of the buyer? Has the buyer started to attach higher importance to overall cost of ownership? What is the infrastructure of the country?

In India, fuel cost is said to contribute to almost 50-60 per cent of operating costs, and SCR delivers better fuel efficiency compared to cooled EGR + DOC / open filter. This moves the needle favor of SCR in the Indian context, especially when viewed through the lens of lower risk on engine durability, emissions durability and better fuel economy. Is BSIV(Bharat Stage emission standards) expected to change the game play? This is out there for industry professionals such as yourself to debate & decide and also charter the next course of action with the “Indian Automotive Heart AKA engine”

*Jayesh Radadiya (4SN13AU039)*

*When Helium is cooled to almost absolute zero, it becomes a liquid with surprising properties: it flows against gravity and will start running up and over the lip of a glass container!*

***Setting goals is the first step in turning the invisible into the visible.***

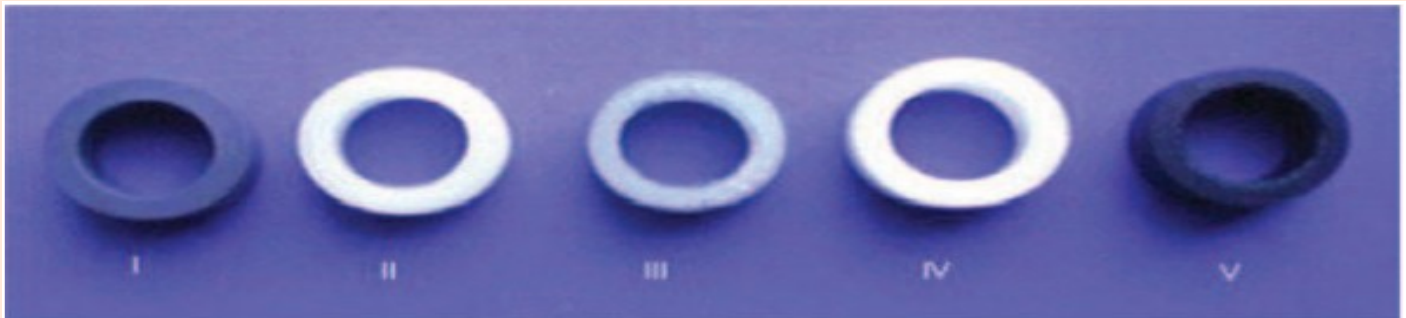
## POLYMER COMPOSITES FOR GREEN BEARINGS

Metal / alloy bearings dominate power transmission in different areas such as, industries, automotive, aerospace, and marine, etc due to their mechanical and tribological properties. But these bearings require proper lubrication for smooth running of components of machinery. Generally, petroleum lubricants are used between rubbing surfaces. Improper maintenance of lubricants, results in the metal bearings getting seized and catastrophic failure of the machine parts occur due to enormous heat developed at the surface. Other ill-effect is environmental pollution caused due to evaporation of petroleum lubricant during working condition.

Many researchers worked towards green bearing to minimize the use of lubricants and use of metal /

at meeting surface and it loses mechanical strength at elevated temperature.

Improvement of the thermal conductivity of the polymer bearing materials is one of the important tasks in research, hence many researchers worked for this purpose. Some researchers used solid lubricant ( $\text{MoS}_2$ ) filled metal composite for bearing operations and reported that composite was very effective in reducing friction and wear but, decreased in some mechanical properties with increasing amount of  $\text{MoS}_2$ . Many researchers used polymer-metal hybrid composite to increase the thermal conductivity and to reduce thermal expansion of polymer during process. In the polymer-metal hybrid composite, bearing metal can be used as cage to dissipate heat quickly and also as balls to



Samples of polymer bearings I) PE II) PA III) POM IV) PTFE V) Bakelite

alloys. In this direction, some polymer-based bearings which also have good tribological properties are used in low speed and load bearing conditions. Some of these polymers are polypropylene (PP), polyethylene (PE), polyoxymethylene (POM), polytetrafluoroethylene (PTFE), polyamide (PA) or nylon, etc. The main advantages of polymers are high wear resistance, lower friction and high corrosion resistance. However, these polymer materials have good mechanical and tribological properties but very poor thermal conductivity; hence they find limited bearing application. Due to bad conductivity of polymers during working condition, heat gets accumulated at meeting surface which leads to increase in temperature

support the load. A traditional way to improve the properties of polymers is to addition of fibers (glass or carbon) or filler material (organic, inorganic and metallic particulates). The addition of filler materials to polymers can enhance the mechanical, thermal, impact, electrical and tribological properties. However, graphite which has high thermal conductivity and low cost can be used with polymer for bearing to increase conductivity and to reduce lubrication.

*Mr. Prakash Tanappagol*

*Bhaskaracharya, the great astronomer and mathematician of ancient India, was the first person to calculate the time taken by the earth to orbit the sun.*

***Happiness is not something you postpone for the future; it is something you design for the present.***



**Inauguration of AMARA and Welcome function for 3rd semester students**



**Swachh SIT Abhiyana conducted by Automobile Engineering Department**



**Inauguration of SAE student college chapter and Teachers day celebration in Automobile**



**Industrial Visit to Mysore BEML and Automotive Axles Limited by 5th sem automobile students**

**General TIPS for preparation of the GATE exam**

1. GATE Exam is not looking for any syllabus completion from the candidate. A good understanding of the basic concepts and their application is required. By understanding, it is implied that candidate is not supposed to just be able to mug up & explain but rather this exam needs candidate to have a feel/common sense.
2. As a thumb rule, while solving any GATE problem, if the solution takes more than 8 steps, u must re-look at the approach. (Generally GATE problems are not lengthy).
3. While solving the problem, students must
 

***Soldier protects our nation,  
A teacher spreads the knowledge,  
A farmer feeds the nation,  
What about you??????  
Do something for your nation!!!!!!***

have balance between speed & accuracy.
4. Preparation time for GATE is subjective and depends on the so many factors such as individual aptitude, fundamentals, attitude, concentration level etc., Typically, a rigorous preparation of 4-6 months is considered good enough for getting into IISc or IITs.
5. Keep a check on your performance; it is compulsory to directly jump upon the previous GATE question on the topic you just finished. You can try to solve some examples in model papers also.
6. Any problem can be tackled in number of ways. So being innovative and intuitive also helps to reach the correct option quickly. This means, it is not at all compulsory to solve question in typical way. Practice comes handy to solve questions quicker so that the balance time can be utilized in some really thought provoking questions (all few questions fall in this category).
7. You should have done sufficient study/discussion, so that the moment you start reading the question you should have an intuition on whether you can solve it. One way, is to read multiple books on the same subjects, especially for subjects of your interest or the thrust portion in GATE exam pattern. Also, to support your study with some self notes is good idea. This helps in final revisions.
8. While preparing always keep your goal in thought and fancy being in the place like top institutes wherever you want to have admission. Always remember You can get, if you really want. So positive mind is the key. Mild tension can be helpful to have kind of motivation or a sense of duty. But you should avoid thoughts of loosing which can cause loss of concentration and low performance. Read only when you are reading.
9. In the last days of preparation, if you have any doubts about any topic/formula, you can have a look on these sections. Always remember, more doubts lead to more concept building.
10. Leave all the books few days before the



## Air Pollution

### What is air pollution?

Air pollution is the introduction of particulates, biological molecules, and other harmful substances into Earth's atmosphere, causing diseases, allergies, death to humans, damage to other living organisms such as animals and food crops, or the natural or built environment.

**Platelet count of healthy person should be in the range 1,50,000 to 4,10,000 cells/cu mm**

### Common air pollutants produced by Automobile

Sulfur oxides (SO<sub>x</sub>), Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon Dioxide, Particulate matter.

ಮನುಷ್ಯ ಮನೆ ಬದಲಾಯಿಸ್ತಾನೆ,  
ಊರು ಬದಲಾಯಿಸ್ತಾನೆ,  
ಬಟ್ಟೆ ಬದಲಾಯಿಸ್ತಾನೆ,  
ಸಂಬಂಧಗಳನ್ನು ಬದಲಾಯಿಸ್ತಾನೆ,  
ಸ್ನೇಹಿತರನ್ನು ಬದಲಾಯಿಸ್ತಾನೆ,  
ಆದರೂ ಅವನಿಗೆ ನೆಮ್ಮದಿ ಇಲ್ಲಾ ಯಾಕೆ ???  
ಏಕೆಂದರೆ ಅವನು ತನ್ನನ್ನು ತಾನು  
ಬದಲಾಯಿಸಿಕೊಳ್ಳುವುದಿಲ್ಲ !!!!

### Different sources of air pollution

1. Fuel Tank
2. Carburetor
3. Crankcase
4. Exhaust tail pipe

### Effect of air pollution on health

Respiratory infections, heart disease, Chronic obstructive pulmonary disease COPD, stroke and lung cancer, difficulty in breathing, wheezing, coughing, asthma and worsening of existing respiratory and cardiac conditions.

*Just-in-time (JIT) is an inventory strategy companies employ to increase efficiency and decrease waste by receiving goods only as they are needed in the production process, thereby reducing inventory costs. It was first developed and perfected within the Toyota manufacturing plants by Taiichi Ohno as a means of meeting consumer demands with minimum delays.*

### Prevention of air pollution

- Use of alternative fuels for vehicles
- Electric power generation from nuclear and renewable.
- Use of wind energy and solar energy, as well as other renewable energy
- Individual Level Prevention – Encouraging the people to use the bus, train or bike.
- Use energy (light, water, boiler, kettle and

*A successful man is one who makes more money than his wife can spend. A successful woman is one who can find such a man.*

*Perfection is not attainable, but if we chase perfection we can catch excellence.*

**Latest two wheel vehicle****Aprilia SR 150**

Cost - ₹ 67,395, Mileage- 53 Kmpl,  
 Engine CC - 154.8 CC,  
 Power - 10.4 Hp @ 6750 RPM,  
 Torque - 11.4 Nm,  
 Engine Type – Air cooled 4 Stroke Engine,  
 Fuel Tank - 6.5 Ltrs.

**Upcoming cars****Tata Hexa**

Expected Launch : Jan 2017,  
 Expected Price - ₹ 13 Lakh- 18 Lakh,  
 Transmission (Gearbox) - 5 Speed Manual,  
 Mileage - 12-15 KMPL,  
 Torque - 320 Nm.

**BMW G310R**

Expected Price - ₹ 2 lack to ₹ 2.4 lack,  
 Engine - 313cc single cylinder liquid cooled  
 Engine Torque - 34bhp at 9500rpm,  
 Transmission - six-speed gearbox,  
 Top speed - 145kmph, mileage - 36kmpl.

**Ford EcoSport Facelift**

Expected Launch : Jan 2017,  
 Price - ₹ 7.50 Lakh\* mileage – 22.27 kmpl,  
 Engine cc – 1498, Max Power - 98.59bhp,  
 Fuel Type – Diesel,  
 Transmission – Automatic.



*Good, better, best. Never let it rest. 'Till your good is better and your better is best'.*

## Maruti Suzuki Ignis

Expected Launch : Jan 2017,

Expected price - ₹ 5 to 7Lakh,

Engine - 1.2-litre K-Series (petrol),

Power - 84bhp @6000rpm, Torque - 115Nm

@4000rpm, Transmission - 5-speed MT.



### Trouble shooting of two wheel vehicle

#### Starting problem - Possible Causes / Remedies

1. Check if the kill switch is in OFF position. Put it in ON position
2. Check that the fuel clock is at the respective Reserve or ON position.
3. Check the fuel in the fuel tank, fill to usable reserve if found less.
4. Check spark plug cap for firm fitment.
5. Check spark for no fouling (Short)
6. Check for no overflow of fuel from carburettor drain pipe.
7. Check for Air filter clogged (Icon will pop-up on speedometer ....Applicable for Pulsar DTSi 200/220 cc.)

#### Vehicle does not start in the mornings - Possible Causes / Remedies

1. Use chock to start the bike. When chock applied do not open the accelerator.
2. Check idling rpm - If too less approach the

authorised dealer workshop for correct adjustment.

3. Incorrect carburettor setting . Approach the authorised dealer workshop for correct adjustment.
4. Check the fuel quality in the fuel tank. If suspected change the fuel.
5. Leakage in the intake manifold. Approach the authorised dealer workshop for correct adjustment.

*Both CNP (currency note press), located in Nashik, Maharashtra, BNP (bank note press) located in Mysore, Karnataka, print Indian currency. Currency is also printed by Reserve Bank of India, along with two presses owned by Bharatiya Reserve Bank Note Mudran Private Limited.*

#### Low mileage, Possible Causes / Remedies

1. Check the idling rpm. It should be specific.
2. Air filter might be clogged. Get it cleaned from authorised dealers workshop.
3. Check freely opening & closing of chock lever / knob. If sticky get it repaired.
4. Check both wheels for free rotation
5. Check all control cables for free operation.
6. Get the carburetor tuned for optimum performance.
7. Confirm that there is no leakage / theft of fuel happening.
8. Always fill the fuel at reputed fuel pump.
9. Maintain correct tyre pressure & check it periodically
10. Never park the bike in direct sunlight to avoid evaporation of fuel.
11. Drive the bike in economy zone displayed on speedometer.
12. Avoid sudden Braking & Acceleration.

We should not give up and we should not allow the problem to defeat us.

## AMARA and Auto Club

Prajath Shetty	President of AMARA
Joshuva Perera	Organizing secretary
Gadhiya Sumit Kumar	Treasurer
Royd Noronha	Joint Secretary
Ganesh Tammaiah	President of Automobile Club, Auto Teremto
<b>Office Bearers</b>	
Santosh Reddy	
Mohith Madhaw	
Prithvi Acharya	
Vignesh G	

### ಕೊನೆಯ ಮಾತು

ಅಹಂಕಾರ ಅಜ್ಞಾನದಡೆಗಿನ ಮೊದಲ ಹೆಜ್ಜೆ, ದುರಂಹಕಾರ ನಾಶದಡೆಗಿನ ಮೊದಲ ಹೆಜ್ಜೆ

### ಕೇಳದೆ ನಮಗೀಗ ಮೂಕ ಮಕ್ಕಳ ಭಾವ ಗೀತೆ

ಮಂಗಳೂರಿನ ಪ್ರಮುಖ ರಸ್ತೆಯ ಹತ್ತಿರ ಒಂದು ಸಣ್ಣ ರಸ್ತೆ ಸುಮಾರು ದಿನಗಳಿಂದ ಬಹಳ ಜನರು ಗಮನಿಸಿದ್ದರು.

ಇದೆ. ಟ್ರಾಫಿಕ್ ನಿಯಂತ್ರಣಕ್ಕಾಗಿ ಈ ರಸ್ತೆಯನ್ನು ಒನ್ ವೇ ಎಂದು ಇವತ್ತು ಆ ನಾಯಿ ನಮ್ಮೊಂದಿಗಿಲ್ಲ, ಒನ್ ವೇಯಲ್ಲಿ ಪೋಲಿಸರು ಘೋಷಿಸಿದ್ದರು. ಆ ರಸ್ತೆಯ ಹತ್ತಿರವೆ ಪರಿಚಿತರ ಹೆಣವಾಗಿದೆ. ಕಾರಣ ಇಷ್ಟೆ WRONG SIDEನಿಂದ ಜೋರಾಗಿ ಮನೆಯು ಇದೆ. ಅವರ ಮನೆಯವರಿಗೆ ಪ್ರಾಣಿಗಳ ಮೇಲೆ ಪ್ರೀತಿ. ಬಂದ ಬೈಕ್ ಗುದ್ದಿದ್ದು. ಇಲ್ಲಿ ನಾಯಿಯ ತಪ್ಪಿಲ್ಲ, ಒನ್ ವೇ ಎಂದರಿತು ಅವರು ಒಂದು ನಾಯಿಯನ್ನು ಸಾಕಿದ್ದರು. ಆ ನಾಯಿಗೆ ಸ್ವಾತಂತ್ರ್ಯದ ವಾಹನ ಬರುವ ದಿಕ್ಕಿನಲ್ಲಿ ವಾಹನ ಇಲ್ಲದ್ದನ್ನ ಖಚಿತ ಪಡಿಸಿ ಮುಂದೆ ದೃಷ್ಟಿಯಿಂದ ಸರಪಳಿಯಿಂದ ಬಂಧಿಸಿರಲಿಲ್ಲ. ಎಲ್ಲೆಂದರಲ್ಲಿ ಸಾಗಿತ್ತು ಅಷ್ಟೆ.....

ನೈಚ್ಛಾಚಾರವಾಗಿ ಹೋಗುತ್ತಿತ್ತು.

ರಸ್ತೆ ನಿಯಮವನ್ನು ಪಾಲಿಸಿ ಮತ್ತು ವಾಹನ

ನಾಯಿಯ ಸೂಕ್ಷ್ಮಗ್ರಹಿಕೆ ಎಷ್ಟಿತ್ತೆಂದರೆ ಯಜಮಾನನ ಚಲಾಯಿಸುವಾಗ ಪ್ರಾಣಿಗಳನ್ನು ಗಮನಿಸಿ. ಅವುಗಳಿಗೂ ಭಾವನೆಗಳನ್ನು ಅರ್ಥ ಮಾಡಿಕೊಳ್ಳುವುದು, ಬೈದಾಗ ಮುದುಡುವುದು, ನೋವಾಗುತ್ತೆ ಮತ್ತು ಅವುಗಳಿಗೂ ಕುಟುಂಬ ಇರುತ್ತದೆ.

ಋಷಿಯಿಂದ ಕರೆದಾಗ ಜಿಗಿಯುತ್ತಾ ಒಡಿಬರುವುದು. ಸಿಟ್ಟಿನಿಂದ ಕರೆದಾಗ ನಿಧಾನವಾಗಿ ಭಯದಿಂದ ಬರುವುದು, ಹೀಗೆ ನಾಯಿ ಮನುಷ್ಯನ ಕೆಲವು ಚಲನವಲನಗಳನ್ನು ಗಮನಿಸಿತ್ತು.

ಪ್ರಜ್ಞೆ ಸಂಧ್ಯಾಳ

ಸಹಾಯಕ ಪ್ರಾಧ್ಯಾಪಕರು, ಆಟೊಮೊಬೈಲ ವಿಭಾಗ

ರಸ್ತೆ ವಿಚಾರದಲ್ಲೂ ಹಾಗೆ, ವಾಹನ ಬರುತ್ತಿಲ್ಲವೆಂದು ಅರಿತ ಮೇಲೆಯೇ ರಸ್ತೆ ದಾಟುತ್ತಿತ್ತು. ಮನೆಯ ಹತ್ತಿರದ ಒನ್ ವೇ ರಸ್ತೆಯ ವಿಷಯದಲ್ಲೂ ಹಾಗೆ, ಪ್ರತಿದಿನ ಒಡಾಡಿ-ಒಡಾಡಿ ವಾಹನ ಒಂದೆ ದಿಕ್ಕಿನಿಂದ ಬರುವುದನ್ನು ಅರಿತಿತ್ತು. ಒನ್ ವೇ ದಾಟುವಾಗ ವಾಹನ ಬರುವ ಕಡೆಗೆ ಮಾತ್ರ ನೋಡಿ ಯಾವ ವಾಹನ ಇಲ್ಲ ಎಂದು ದೃಢವಾದ ಮೇಲೆಯೇ ಮುಂದೆ ಸಾಗುತ್ತಿತ್ತು. ಇದನ್ನು

**The Tirupati Balaji temple and the Kashi Vishwanath Temple of india both, receive more visitors than the Vatican City and Mecca combined.**

**ಬೆಟ್ಟ ಎಂದಿಗೂ ನಮ್ಮ ಮುಂದೆ ಬಾಗುವುದಿಲ್ಲ, ಆದರೆ ಕಷ್ಟ ಪಟ್ಟು ಏರಿದ ಮೇಲೆ ಅದು ನಮ್ಮ ಪಾದದ ಕೆಳಗೆ ಇರುತ್ತದೆ.**