Forty per cent of Halagali's shooting has been completed, says director Sukesh Nayak

Director Sukesh Nayak, who is directing the Pan Indian historical film 'Halagali', featuring actors Daali Dhananjaya and Sapthami Gowda in the lead, has now disclosed that 40 per cent of the film's shooting had been completed.

Addressing mediapersons, director Sukesh said that this was a story that could not be told in one part and therefore, the makers had decided to narrate it in two parts.

"About 40 per cent of the shooting has been completed. This is not a story that can be told in one part. There is a great history behind this story. That is why we are bringing it in two parts. This film will give the audience a great theatrical experience. We are again planning to begin shoot by the end of September and finish the remaining portions by March next year," explained the director.

Directed by Sukesh Nayak, presented by Yarlagadda Lakshmi Srinivas and produced by Kalyan Chakravarthy Dhulipala, the film, which is being made in two parts, is being shot in Kannada, Telugu, Tamil, Malayalam and Hindi.

Hero Daali Dhananjaya said, "Halagali is an untold story. I feel proud to be a part of this movie. Halagali is a great emotion in Karnataka. Producer Kalyan and director Sukesh are making this project with a lot of passion. As soon as I heard the story, I felt like being a part of this project."

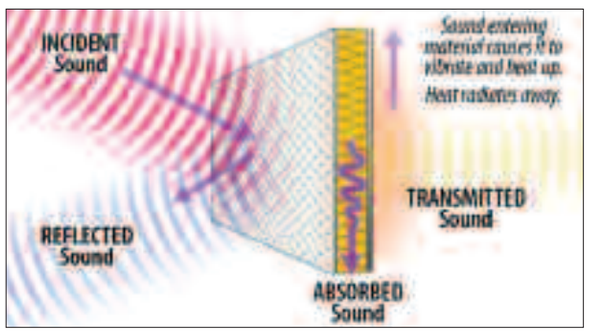
Producer Kalyan Chakravarthy said, "I have a lot of faith in director Sukesh. He has made this film with a lot of passion. Halagali is a chapter in history. Their fight against the British is memorable. A lot of research was done about this. While researching about this film, we got goosebumps."

For the unaware, Halagali revolves around the Halagali rebellion of 1857 in which the Bedars of Halagali, who were hunters and soldiers, rebelled against the British over the latter's order that they surrender their arms.

The film will, apart from Daali Dhananjaya and Sapthami Gowda, also feature actors B Suresh, Sharath Lohithashva, Veena Sundar, Beeradar, Shivamani, Malathi Sudheer, Balaraj Vaadi, Yamuna Srinidhi Shetty, Ananya and Prathik Shetty among others.

Details of sound absorption

In our daily life every day we hear sound from various sources like humans, birds, bells, machines, vehicles, televisions, radios etc. A sound can be considered as the form of energy that produces the sensation of hearing. Like all wave, the sound wave also travels at a certain speed and has the properties of frequency and wavelength. Sound waves are caused by vibrating an object. In this chapter, we are going to learn how sound is produced, the wavelength of sound waves, how it is transmitted through a medium.



Definition of Sound Absorption: Sound absorption is defined as the loss of sound energy when sound waves come into contact with an absorbent material such as ceilings, walls, floors and other objects. As a result of that, the sound is not reflected back into space. The wavelength of sound waves is not directly sensed, but indirectly evidence is found in the correlation of the size of musical instruments with their pitch.

Sound absorbent materials are used to create a suitable acoustic environment within a space by reducing the 'reverberation time'. Reverberation affects the way space 'sounds'. A long reverberation time produces a loud and noisy sound in the room. Rooms that are designed for speech typically have a short reverberation time of less than 1 second. Just in the reverse process, a longer reverberation time can enhance a music hall by adding richness, depth and warmth to the music. Sound waves are caused by the simple but rapid mechanical vibrations of various elastic bodies. Sound absorption can be an important factor for spaces such as: Sports halls, Schools, Recording studios, Lecture theatres & Concert venues, cinemas and theatres.

How Does Sound Absorption Work?

Sound waves when encounters with an object, one of two things will happen- it can be absorbed, or it can be reflected. When sound is reflected, it is sent back into the medium and when it's absorbed by a sound-absorbing material, it turns into a small amount of heat energy. Acoustics science involved in finding the right balance between absorption and reflection.

Let's understand this with an example. Imagine you are watching a band play in the auditorium. If the entire space were covered with sound-absorbing materials, then the walls would have absorbed too much sound and make the music sound flat. The musicians would also have to work hard in order to not make any mistakes. However, some reverberation would help the music ring sounds beautiful, as long as there's not too much echo produced. There is also a chance of sound transmission from one room to another. Just like sound absorption, certain materials are used for blocking sound. sound insulation is used to control sound between rooms.

Difference Between Reflection and Absorption of Sound

Reflection of Sound:

When sound travels in a provided medium it hits the surface of another medium and returns back in some various way. This process is called a reflection of sound waves.

There are things like a wall, a window that prevents sound from moving across them and these things reflect the sound. This is known as sound reflection. The reflection of sound is used in horns, megaphone and in shehnais. Applications of reflection of sound are an echo, hearing aid, soundboard etc.

Absorption of Sound:

It is defined as the tendency of material absorbs light. When the sound strikes the surface most of them are absorbed and some amount of sound energy is reflected back. There are things like sofa cover, the curtain which can absorb sound and this is known as sound absorption.

These are required in concert halls, recording studios.

Sound is produced by vibrating objects. The matter or substance through which sound is transmitted is known as a medium. It can be solid, liquid or gas.

Sound moves through a medium from the point where it is generated to the listener point. When an object vibrates, the particles of the medium around it also start vibrating. The particles do not travel all along from the vibrating object to the ear. When a particle of the medium comes in contact with the vibrating object first it is displaced by the vibrating object from its equilibrium position.

Problems on ages

1. The sum of ages of 5 children born at the intervals of 3 years each is 50 years. What is the age of the youngest child?
a. 4 years
b. 8 years
c. 10 years
d. None of these

2. A father said to his son, "I was as old as you are at the present at the time of your birth". If the father's age is 38 years now, the son's age five years back was:
a. 14 years b. 19 years
c. 33 years d. 38 years

3. A is two years older than B who is twice as old as C. If the total of the ages of A, B and C be 27, then how old is B?
a. 7 b. 8
c. 9 d. 10

4. Present ages of Sameer and Anand are in the ratio of 5 : 4 respectively. Three years hence, the ratio of their ages will become 11 : 9 respectively. What is Anand's present age in years?
a. 24 b. 27
c. 40
d. Cannot be determined

5. A man is 24 years older than his son. In two years, his age will be twice the age of his son. The present age of his son is:
a. 14 years b. 18 years

c. 20 years d. 22 years

6. Six years ago, the ratio of the ages of Kunal and Sagar was 6 : 5. Four years hence, the ratio of their ages will be 11 : 10. What is Sagar's age at present?
a. 16 years
b. 18 years
c. 20 years
d. Cannot be determined

7. The sum of the present ages of a father and his son is 60 years. Six years ago, father's age was five times the age of the son. After 6 years, son's age will be:
a. 12 years b. 14 years
c. 18 years d. 20 years

8. At present, the ratio between the ages of Arun and Deepak is 4 : 3. After 6 years, Arun's age will be 26 years. What is the age of Deepak at present ?
a. 12 years
b. 15 years
c. 19 and half
d. 21 years

9. Sachin is younger than Rahul by 7 years. If their ages are in the respective ratio of 7 : 9, how old is Sachin?
a. 16 years
b. 18 years
c. 28 years
d. 24.5 years

10. The present ages of three persons in proportions 4 : 7 : 9. Eight years ago, the sum of their ages was 56. Find their present ages (in years).
a. 8, 20, 28
b. 16, 28, 36
c. 20, 35, 45
d. None of these

11. Ayesha's father was 38 years of age when she was born while her mother was 36 years old when her brother four years younger to her was born. What is the difference between the ages of her parents?
a. 2 years b. 4 years
c. 6 years d. 8 years

12. A person's present age is two-fifth of the age of his mother. After 8 years, he will be one-half of the age of his mother. How old is the mother at present?
a. 32 years
b. 36 years
c. 40 years
d. 48 years

Answer
1. a, 2. a, 3. d, 4. a, 5. d, 6. a, 7. d, 8. b, 9. d, 10. b, 11. c, 12. c.

Brief discussion on string theory

String theory is a particle physics theory that attempts to merge the general theory of relativity of Einstein with quantum mechanics. The name comes from the modeling of the subatomic particles in a manner that shows them as small one-dimensional entities that are 'stringlike', instead of the usual approach where they are zero-dimensional. This is a theory that envisions a string undergoing a specific vibration that corresponds with a particle that has properties that are definitive like charge and mass.

Brief on String Theory

Here is a more simplified version of the theory that is also known as the 'theory of everything' and it includes concepts like extra dimensions, superstrings, and branes. Scientists believe that this is a theory that will explain one of the biggest mysteries of how the universe works, which is how quantum physics and gravity fit together. Since string theory is a work in progress it can be a little difficult to understand what it's fundamentals are, but below are some of its key features.

• All the objects that exist in the universe are made of membranes (branes) of energy and vibrating filaments (strings).

• This is a theory that attempts to merge quantum physics and general relativity.

• Several dimensions to the universe exist but are yet unobservable.

Who Invented the String Theory?

Physicists in the 1980s realized that string theory could possibly incorporate four forces of nature, that is weak force, strong force, electromagnetism, and gravity, and all types of matter in one quantum mechanical framework, and this could perhaps be the unified field theory. This is an area of research that is developing rapidly, but it is mostly a mathematical construct without having made any experimental observations.

It has a long history since then with numerous physicists that have worked on this theory. However, Leonard Susskind is said to be one of the fathers of string theory who introduced the idea that particles could be vibrating filaments along with Holger Bech Nielsen and Yoichiro Nambu. He was also the first to bring the string theory landscape in the year 2003.

Albert Einstein spoke of a 'God equation' that could explain how the universe works. However, this string theory equation isn't something that has been found yet, even though people like Michio Kaku have been working on it for decades. Kaku, in fact, is responsible for the standard model of this theory and says that string theory is something that could be the equation that Einstein was looking for.

For years, physicists believed and hoped that the string theory would do all that it said it would. There was a dream of a singular theory, but in the early 90s, people seemed to give up on connecting the theory to the real world. In the last two decades, there has been an extension of theoretical tools, but there is very minimal progress in understanding what is in the universe and how it works.

It was said that people realized that the bar had been set too high, but now this theory has become increasingly complicated theoretically, and there seems to be a challenge even in understanding what string theory is and what it is not. The main issue lies in how the theory lies in theoretical physics, but there is no understanding of how it connects as a theory of gravity to nature.

MCQ on Miscellaneous for job exam

1. What is the name of the telescope that captured gas jets from newborn stars for the first time?
a. Hubble Telescope
b. Kepler Telescope
c. Spitzer Telescope
d. James Webb Telescope

2. In which Indian state did the government recently announce an increase in reservation for the OBC category from 15% to 27%?
a. Punjab
b. Uttar Pradesh
c. Haryana
d. Rajasthan

3. Who is set to be the next Vice Chief of Army Staff?
a. Lt Gen NS Raja Subramani
b. Gen Manoj Pande
c. Lt Gen Upendra Dwivedi
d. Lt Gen Mohan Yadav

4. When is the International Day of the Seafarer celebrated?
a. June 24 b.June25
c. June 26 d.June27

5. Who released the book 'Gateways to the Sea: Historic Ports and Docks of Mumbai Region'?
a. Banwarilal Purohit
b. Kalraj Mishra
c. Ramesh Bais
d. Lakshman Prasad Acharya

6. How many medals did India secure at the 2024 BRICS Games in Russia?
a. 12 b. 16
c. 29 d. 32

7. What is S&P Global Ratings' forecast for India's GDP growth in FY25?
a. 6.5% b. 6.7%
c. 6.9% d. 6.8%

8. The Post Office Act of 2023 replaced which act?
a. 1898 b. 1923
c. 1974 d. 1952

9. Which court invalidated the Bihar government's decision to raise reservation quotas beyond 50% for various categories?
a. Supreme Court of India
b. Bombay High Court
c. Delhi High Court
d. Patna High Court

10. Which constitutional article allows for the renaming of a state when recommended by the President?
a. Article 1
b. Article 3
c. Article 5
d. Article 7

11. Which country hosted the Archery World Cup 2024?
a. Turkey
b. China
c. South Korea
d. France

12. In which state is the government planning to establish one PM College of Excellence in each district?
a. Rajasthan
b. Madhya Pradesh
c. Gujarat
d. Maharashtra

13. When is the International Day in Support of Victims of Torture observed?
a. June 26
b. July 26
c. May 26
d. August 26

14. Who is set to become the Leader of the Opposition in the Lok Sabha?
a. Mallikarjun Kharge
b. Indira Gandhi
c. Akhilesh Yadav
d. Rahul Gandhi

15. Who recently became the first Indian woman cricketer to score consecutive centuries in ODIs?
a. Mithali Raj
b. Harmanpreet Kaur
c. Smriti Mandhana
d. Deepti Sharma

16. Where was India's first 'Chadwick House: Navigating Audit Heritage' Museum inaugurated?
a. New Delhi
b. Shimla
c. Mumbai
d. Kolkata

17. Which country recently became the first to retrieve rocks from the moon's far side?
a. China b. USA
c. Russia d. India

18. How many medals did Indian wrestlers win at the 2024 U-17 Asian Wrestling Championship?
a. 4 b. 7
c. 9 d. 11

Answer
1. d, 2. c, 3. a, 4. b, 5. c, 6. c, 7. d, 8. a, 9. d, 10. b, 11. a, 12. b, 13. a, 14. d, 15. c, 16. b, 17. a, 18. d.

Overview of shadow formation

When we are walking on the road at midday, we can observe our image on either of the four sides. This we call a shadow. Even though we all are very familiar with the shadow, we don't know what a shadow is, how is it formed? Isn't it? So we start learning about a shadow, how it forms, its sources, etc.

What is a Shadow?

A dark space or a region where an opaque object blocks the light rays is known as a shadow. The type of shadow formed depends upon the position and intensity of the source of the light. For example, in the early mornings and late afternoons, the shadows formed are elongated. But the shadow formed at noon is short and dark in nature when the sun is right above your head.

The nature of light sources can either be pointed or non-pointed (or extended). When the source of the light is a point source then there is a formation of a simple shadow known as umbra while if the source of the light is an extended light source then the shadow gets divided into the umbra, penumbra, and antumbra. These types of shadows can also be used to define the levels of darkness.

When is a Shadow formed?

Whenever the light or sun rays are blocked by any object, a black area or region is formed in a particular shape based on the object or body behind it. This is the time when the shadow is formed.

How is a Shadow formed?

To explain what a shadow is? It is essential to learn and understand transparent objects and opaque substances. Because the shadow is a place or a region where the opaque substance may restrict the light not to enter by its race, the properties of that particular region where a type of shadow is formed is called the shadow.

It is easy to understand the shadow formation and know that type of shadow because the shadow can be formed by the Sun or by the light.

Shadow- Formation by Sun: Sun is a source of shadow to form. A shadow is formed when the sun's rays are traveling in your straight line towards the earth.

The rays of the sun radiate outwards and these light rays travel nearly 300,000 km/sec in a straight line towards the earth. These light rays take only 8 minutes to reach us. It directly touches the path on the ground. If the path is a transparent object, there will not be the formation of shadow. On the other hand, if it touches the opaque substance as a part, it avoids the race entering its region and results in shadow formation.

Whatever comes in the path of these rays, they hit that object. When the object that is hit by these rays is opaque, the object blocks the light and does not let these rays pass through, which leads to the formation of shadow. When the light cannot get through an object a shadow is formed on the other side of that object. Even though the shadow is the same as the object, it is not a reflection.

Shadow- Formation by Light: Now, let us discuss light and the formation of shadows.

Along with the sun, there are many more sources of light which include lightbulbs, candle flames, computer screens, and glow-worms. Light can be observed in many forms like candlelight, sunlight, lamplight, electric light, computer light, etc. Each form of the source can create a shadow in the different scenarios. Based on the size of the light, the sharpness of shadow is observed. Shadows are formed because the movement of particles travels in light. Similar to the sunlight, the particles travel and choose a destination. If the destination is an opaque substance, it creates a blurred image based on the object's size. If we use a mobile phone to spotlight, it gives a very small shadow. This might be helpful to explain how shadows are formed.

Just like the sun, the light from these sources also travels in a straight line but travels a shorter distance. When the contrast between the shadow and the lit surface is high, the shadows formed are more definite which is the reason why the shadows formed on a white surface can be seen more easily. The sharpness and blurriness of the shadow depend on the size of the light source. Small lights form distinct shadows while bigger lights form less distinct shadows as compared to the small lights. The shapes and sizes of shadows are dependent on the position of the light.

Seasons: Seasons are also factors that determine the size and shape of the shadow. When the shadow is formed, if it is summer, the days are bright and sunny. Then the sharpness of the shadow will be high, and it stays for a longer time. If shadows are formed in the rainy season, the light cannot travel through water, and we can't observe sharp shadows. It can appear in a blur.

MCQ of Boats and Streams

1. A boat can travel with a speed of 13 km/hr in still water. If the speed of the stream is 4 km/hr, find the time taken by the boat to go 68 km downstream.
a. 2 hours
b. 3 hours
c. 4 hours
d. 5 hours

2. A man's speed with the current is 15 km/hr and the speed of the current is 2.5 km/hr. The man's speed against the current is:
a. 8.5 km/hr
b. 9 km/hr
c. 10 km/hr
d. 12.5 km/hr

3. A boat running upstream takes 8 hours 48 minutes to cover a certain distance, while it takes 4 hours to cover the same distance running downstream. What is the ratio between the speed of the boat and speed of the water current respectively?
a. 2 : 1 b. 3 : 2
c. 8 : 3
d. Cannot be determined

4. A motorboat, whose speed in 15 km/hr in still water goes 30 km downstream and comes back in a total of 4 hours 30 minutes. The speed of the stream (in km/hr) is:
a. 4 b. 5
c. 6 d. 10

5. In one hour, a boat goes 11 km/hr along the stream and 5 km/hr against the stream. The speed of the boat in still water (in km/hr) is:
a. 3 km/hr
b. 5 km/hr
c. 8 km/hr
d. 9 km/hr

6. A boat running downstream covers a distance of 16 km in 2 hours while for covering the same distance upstream, it takes 4 hours. What is the speed of the boat in still water?
a. 4 km/hr
b. 6 km/hr
c. 8 km/hr
d. Data inadequate

7. The speed of a boat in still water in 15 km/hr and the rate of current is 3 km/hr. The distance travelled downstream in 12 minutes is:
a. 1.2 km b. 1.8 km
c. 2.4 km d. 3.6 km

8. A boat takes 90 minutes less to travel 36 miles downstream than to travel the same distance upstream. If the speed of the boat in still water is 10 mph, the speed of the stream is:
a. 2 mph b.2.5mph
c. 3 mph d. 4 mph

9. A man can row at 5 kmph in still water. If the velocity of current is 1 kmph and it takes him 1 hour to row to a place and come back, how far is the place?
a. 2.4 km b. 2.5 km
c. 3 km d. 3.6 km

10. A boat covers a certain distance downstream in 1 hour, while it comes back in 1 hours. If the speed of the stream be 3 kmph, what is the speed of the boat in still water?
a. 12 kmph
b. 13 kmph
c. 14 kmph
d. 15 kmph

11. A boatman goes 2 km against the current of the stream in 1 hour and goes 1 km along the current in 10 minutes. How long will it take to go 5 km in stationary water?
a. 40 minutes
b. 1 hour
c. 1 hr 15 min
d. 1 hr 30 min

12. Speed of a boat in standing water is 9 kmph and the speed of the stream is 1.5 kmph. A man rows to a place at a distance of 105 km and comes back to the starting point. The total time taken by him is:
a. 16 hours
b. 18 hours
c. 20 hours
d. 24 hours

13. A man takes twice as long to row a distance against the stream as to row the same distance in favour of the stream. The ratio of the speed of the boat (in still water) and the stream is:
a. 2 : 1 b. 3 : 1
c. 3 : 2 d. 4 : 3

Answer
1. c, 2. c, 3. c, 4. b, 5. c, 6. b, 7. d, 8. a, 9. a, 10. d, 11. c, 12. d, 13. b.