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EMERGING TRENDS IN CHEMICAL, MATERIAL AND ENVIRONMENTAL SCIENCES (NSETCMES – 2019)

27th September, 2019

Department of Chemistry
Govt. Degree & PG College
Puttur, Chittoor Dist. Andhra Prdesh, India

QUALITY EDUCATION IS A GREAT TREASURE

Editor

Dr. C. NAGESWARA REDDY
Assistant Professor of Chemistry
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EFFECT OF ENDOSCOPE ON THE PERISTALTIC TRANSPORT OF A COUPLE STRESS FLUIDS WITH HEAT TRANSFER: APPLICATION TO BIOMEDICINE

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ABSTRACT

In this investigation we have studied the problem of peristaltic flow with heat transfer through the gap between coaxial inclined tubes where the inner tube is rigid and the outer tube has sinusoidal wave travelling down its wall. The problem has been formulated in cylindrical coordinate system. The equations governing the flow have been simplified under the long wavelength and low Reynolds number assumptions. The exact solution is obtained for the temperature profile. The perturbation solutions for the velocity and pressure gradient are obtained for small couple stress parameter.

Keywords: Couple stress fluid; Biomedicine; Peristaltic flow, Heat transfer, Endoscope

INTRODUCTION

The study of non-Newtonian fluid flows has gained much attention of the researchers because of its many applications in physiology, technology and industry. Such fluids exhibit a non-linear relationship between the stress and the rate of strain. Most of the slurries, polymer solutions, pharmaceutical formulations, cosmetics, toiletries, paints, biological fluids, food products, agricultural and dairy wastes are treated as non Newtonian fluids. Couple stress fluid theory is one of the non-Newtonian fluid theories developed by Stokesin1966.Thecouple stress fluid theory is one among the polar fluid theories which considers couples tresses in addition to the classical Cauchy stress. Peristaltic motion has gained considerable importance because of its applications in physiology, engineering and industry. Peristalsis is now well known to the physiologists to be one of the major mechanisms for fluid transport in many biological systems.. Peristaltic pumping is also used in medical instruments such as heart-lung machine and blood pump machine etc. Keeping diverse applications of peristaltic flows in mind, a large number of theoretical and numerical works have been presented on this topic.

The effects of an endoscope on the peristaltic flow are very important for medical diagnosis and it has many clinical applications. It is a very important tool for deter mining real reasons responsible for many problems in human organs in which the fluid are transported by peristaltic pumping. The endoscope is also like a catheter which is used in contemporary medical science. Few researchers have studied the peristaltic flow problems with endoscope in various situations. Heat transfer involve many intricate processes like heat conduction in tissues, heat perfusion in arterial venous blood, metabolic heat generation and external interactions such as electromagnetic radiation emitted from cell phones.

Mathematical formulation

We consider the peristaltic pumping of a conducting Newtonian fluid flow through a porous medium in a channel of half-width a. A longitudinal train of progressive sinusoidal waves takes place on the upper and lower walls of the channel. For simplicity, we restrict our discussion to the half-width of the channel as shown in the Fig.1. The wall deformation is given by

$$H(X,t) = a + b\sin\left[\frac{2\pi}{\lambda}(X - ct)\right] \tag{2.1}$$

where b is the amplitude, λ the wavelength and c is the wave speed.

Under the assumptions that the channel length is an integral multiple of the wavelength λ and the pressure difference across the ends of the channel is a constant, the flow becomes steady in the wave frame (x, y) moving with velocity c away from the fixed (laboratory) frame (X, Y). The transformation between these two frames is given by

$$x = X - c\,t,\ y = Y,\ u = U - c,\ v = V \text{ and } p(x) = P(X, t), \tag{2.2}$$

Where (u, v) and (U, V) are the velocity components, p and P are pressures in the wave and fixed frames of reference, respectively.

The equations governing the flow in wave frame are given by

$$\frac{\partial u}{\partial x} + \frac{\partial v}{\partial y} = 0, \tag{2.3}$$

$$\rho\left(u\frac{\partial u}{\partial x} + v\frac{\partial u}{\partial y}\right) = -\frac{\partial p}{\partial x} + \mu\left(\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2}\right) + \frac{\sigma B_0^2}{1+m^2}\left(mv - (u+c)\right) - \frac{\mu}{k}(u+c) \tag{2.4}$$

$$\rho\left(u\frac{\partial v}{\partial x} + v\frac{\partial v}{\partial y}\right) = -\frac{\partial p}{\partial y} + \mu\left(\frac{\partial^2 v}{\partial x^2} + \frac{\partial^2 v}{\partial y^2}\right) - \frac{\sigma B_0^2}{1+m^2}\left(m(u+c) + v\right) - \frac{\mu}{k}v \tag{2.5}$$

Where ρ is the density σ is the electrical conductivity, B_0 is the magnetic field strength, m is the Hall parameter, k is the permeability of the porous medium.

The dimensional boundary conditions are

$$u = -c \text{ at } y = H \tag{2.6}$$

$$\frac{\partial u}{\partial y} = 0 \text{ at } y = 0 \tag{2.7}$$

Introducing the non-dimensional quantities

$$\bar{x} = \frac{x}{\lambda}, \bar{y} = \frac{y}{a}, \bar{u} = \frac{u}{c}, \bar{v} = \frac{v}{c\delta}, \delta = \frac{a}{\lambda}, \bar{p} = \frac{pa^2}{\mu c\lambda}, \bar{t} = \frac{ct}{\lambda}, h = \frac{H}{a}, \phi = \frac{b}{a},$$

$$\bar{q} = \frac{q}{ac}, M^2 = \frac{\sigma a^2 B_0^2}{\mu},\ Da = \frac{k}{a^2}$$

Into equations (2.3) to (2.5), we get

$$\frac{\partial u}{\partial x}+\frac{\partial v}{\partial y}=0 \tag{2.8}$$

$$\mathrm{Re}\,\delta\left(u\frac{\partial u}{\partial x}+v\frac{\partial u}{\partial y}\right)=-\frac{\partial p}{\partial x}+\left(\delta^2\frac{\partial^2 u}{\partial x^2}+\frac{\partial^2 u}{\partial y^2}\right)+\frac{M^2}{1+m^2}\left(m\delta v-(u+1)\right)-\frac{1}{Da}(u+1) \tag{2.9}$$

$$\mathrm{Re}\,\delta^3\left(u\frac{\partial v}{\partial x}+v\frac{\partial v}{\partial y}\right)=-\frac{\partial p}{\partial y}+\delta^2\left(\delta^2\frac{\partial^2 v}{\partial x^2}+\frac{\partial^2 v}{\partial y^2}\right)-\frac{\delta M^2}{1+m^2}\left(m(u+1)+\delta v\right)-\frac{\delta^2}{Da}v \tag{2.10}$$

Here Re is the Reynolds number, M is the Hartmann number and Da is the Darcy number.

Using long wavelength (i.e., $\delta << 1$) approximation, the equations (2.9) and (2.10) become

$$\frac{\partial^2 u}{\partial y^2}-\beta^2 u=\frac{\partial p}{\partial x}+\beta^2 \tag{2.11}$$

$$\frac{\partial p}{\partial y}=0 \tag{2.12}$$

where $\beta=\sqrt{\frac{M^2}{1+m^2}+\frac{1}{Da}}$.

From Eq. (2.12), it is clear that p is independent of y. Therefore Eq. (2.11) can be rewritten as

$$\frac{\partial^2 u}{\partial y^2}-\beta^2 u=\frac{dp}{dx}+\beta^2 \tag{2.13}$$

The corresponding non-dimensional boundary conditions are given as

$$u=-1 \text{ at } y=h=1+\phi\sin 2\pi x \tag{2.14}$$

$$\frac{\partial u}{\partial y}=0 \text{ at } \quad y=0 \tag{2.15}$$

Knowing the velocity, the volume flow rate q in a wave frame of reference is given by

$$q=\int_0^h u dy. \tag{2.16}$$

The instantaneous flow $\mathrm{Q}(X,t)$ in the laboratory frame is

$$Q(X,t)=\int_0^h U dY=\int_0^h (u+1)dy=q+h \tag{2.17}$$

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The time averaged volume flow rate $\overline{Q}$ over one period $T\left(=\frac{\lambda}{c}\right)$ of the peristaltic wave is given by

$$\overline{Q} = \frac{1}{T}\int_0^T Q dt = q + 1 \tag{2.18}$$

Solution

Solving Eq. (2.13) together with the boundary conditions (2.14) and (2.15), we get

$$u = \frac{1}{\beta^2}\frac{dp}{dx}\left[\frac{\cosh \beta y}{\cosh \beta h} - 1\right] - 1 \tag{3.1}$$

RESULTS AND DISCUSSION

The focus of this section is to examine the role of various flow parameters on velocity, pressure gradient, temperature, pressure difference, frictional forces at the walls and trapping phenomenon. Fig.2 displays the behaviour of temperature for different values of heat generation parameter β. It is depicted from the figure that, the temperature increases with increase of heat generation parameter β, and the maximum value of the temperature occurs near the middle of the peristaltic tube. It is due to fact that as heat generates during blood flow in physiological systems, there is a significant rise in thickness of the boundary layer. There by the temperature of the boundary layer enhanced by appreciable extend.

Fig.3 is plotted to see the variation of velocity profile for different values of inclination angle α, Grash of number Gr, wave amplitude ϕ and volume flow rate Θ. It is observed from Figs.3 (a–b) that, the velocity increases near the endoscope and decreases near the tube walls with increase in inclination angle α and Grash of number Gr. The buoyancy forces play a dominant role near the endoscopic tube that's why velocity profile increases near the endoscopic tube where as reflux case or viscous forces play a dominant role near the outer wall so velocity profile contributes to decrease. It is depicted from the Fig.3(c) that, the velocity decreases with increase of wave amplitude ϕ and the situation is reversed with increase of volume flow rate Θ (see Fig.3(d)).

The pressure gradient is illustrated in Fig.4 for different values of couple stress parameter γ, inclination angle α, Grash of number Gr and volume flow rate Θ. It is noticed from these figures that, in the wider part of the tube $z \in (0, 0.5)$ and $z \in (1, 1.5)$,the pressure gradient is relatively small. i.e., the flow can easily pass without the imposition of a large pressure gradient. On the other hand, in the narrow part of the tube $z \in (0.5, 1)$, the pressure gradient is large for given volume flow rate, that means a much large pressure gradient is required to maintain the same flux to pass it. Fig. 4(b) depicts that, the pressure gradient is an increasing function of inclination angle α. This shows that pressure gradient increases from horizontal to vertical tube. It is noted from Figs.4(c–d) that, increasing of Grash of number Gr and volume flow rate Θ increases the pressure gradient. The effects of various parameters on the pressure difference Δp λ are shown inFig.5.We split the whole graph into four regions as follows: peristaltic pumping region (Δp λ> 0, Θ > 0), augmented pumping region (Δp λ< 0,Θ > 0), retrograde pumping region (Δp λ> 0,Θ < 0) and free pumping region (Δp λ =0). In the Peristaltic pumping region, the positive value of Θ is entirely due to the peristalsis after over- coming the pressure difference.

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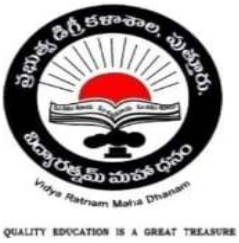

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CONTENTS

WATER QUALITY & WATERBORNE DISEASES

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ABSTRACT

The purpose of this document is to discuss water quality and different parameters to measure the water quality and suggested guideline standards from WHO and QI calculation for the Cauvery River from South India, and here we will discuss Waterborne diseases, Different types of water borne diseases, symptoms, prevention, management, treatment and interesting facts about each disease. Water is very important for the existence of all living environments, but this valued resource require careful usage to ensure sustainable ecosystem functioning well into the future. As population grow and demand more water, the management of aquatic high quality for domestic purposes and environments requires an understanding of the economic activities. Water abstraction for important linkages between ecosystem domestic use, agricultural production, mining, properties and the way in which human industrial production, power generation, and activities can alter the interplay between the forestry practices can lead to deterioration in physical, chemical and biological processes water quality that impact not that drive ecosystem functioning.

Water Quality

Water quality refers to the physical, chemical and biological characteristics of a water body. These characteristics determine how and for what water can be used and the species and ecosystem process it can support. To understand the quality of water, we can use the water quality index. The UN Environment programme had been tasked by UN water to lead on fresh water quality and aquatic ecosystem data and information inputs to the world Water Assessment programme.

Developing of a Quality Index:

The approach for developing an index for global source drinking water quality has three parts.

1) Selecting bench marks that are appropriate in assessing global water quality for human health.

2) Selecting parameters from GEMstat that have an appropriate bench mark and have reasonable global coverage.

Four by Four rule

Four by Four rule states that a water quality index should not be calculated for a station with any fewer than four parameters and four sampling visits per year. Data should be selected from stations that have measured a minimum of any four parameters per year, that each of these parameters is measured at least four times per year.

Types of Quality Index

The four by four rule led to three databases with parameters selected that had met all of the following criteria.

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Cholera is a diarrhoeal disease that is very sudden in onset. It is characterised by a massive loss of body fluids, through diarrhoea and vomiting leading to severe dehydration, which can be fatal. Infants and small children show the most rapid advance of the illness. Untreated cases of cholera can lead to death within 6hours depending on the degree of dehydration.

Prevention Measures

- Never Drink untreated water
- Water can be disinfected by adding 1 teaspoon of domestic bleach to 20 litres of water and leaving for at least three minutes.
- Proper personal hygiene and sanitation infrastructure should be installed and maintained.
- Cleaning drinking water containers should always be used. Recontamination of stored clean water should be avoided by not inserting the hands or dirty equipment when removing water from the container.

Gastroenteristis-Stomach Bug

Gastroenteritis is a disease where there is a sudden onset of vomiting and watery diarrhoea often accompanied by moderate fever and sometimes stomach cramps. The incubation period is generally short (8 to 48 hours). The disease is sometimes referred to as "gastric flu" or "Stomach bug". Gastroenteristis can be caused by a wide variety of microorganisms.

Transmission of the disease can occur by a variety of routes, such as eating contaminated food or drinking contaminated water, people sharing the same utensils or living together is common, especially with the viral forms of the disease, as it is spread via the faecal oral route with poor hygiene.

Preventative Measures

- Never drink untreated water
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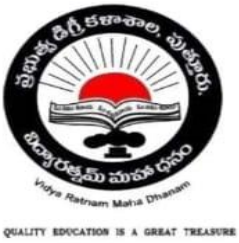

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Government Degree & PG College
Puttur

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CONTENTS

WATER QUALITY & WATERBORNE DISEASES

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ABSTRACT

The purpose of this document is to discuss water quality and different parameters to measure the water quality and suggested guideline standards from WHO and QI calculation for the Cauvery River from South India, and here we will discuss Waterborne diseases, Different types of water borne diseases, symptoms, prevention, management, treatment and interesting facts about each disease. Water is very important for the existence of all living environments, but this valued resource require careful usage to ensure sustainable ecosystem functioning well into the future. As population grow and demand more water, the management of aquatic high quality for domestic purposes and environments requires an understanding of the economic activities. Water abstraction for important linkages between ecosystem domestic use, agricultural production, mining, properties and the way in which human industrial production, power generation, and activities can alter the interplay between the forestry practices can lead to deterioration in physical, chemical and biological processes water quality that impact not that drive ecosystem functioning.

Water Quality

Water quality refers to the physical, chemical and biological characteristics of a water body. These characteristics determine how and for what water can be used and the species and ecosystem process it can support. To understand the quality of water, we can use the water quality index. The UN Environment programme had been tasked by UN water to lead on fresh water quality and aquatic ecosystem data and information inputs to the world Water Assessment programme.

Developing of a Quality Index:

The approach for developing an index for global source drinking water quality has three parts.

1) Selecting bench marks that are appropriate in assessing global water quality for human health.

2) Selecting parameters from GEMstat that have an appropriate bench mark and have reasonable global coverage.

Four by Four rule

Four by Four rule states that a water quality index should not be calculated for a station with any fewer than four parameters and four sampling visits per year. Data should be selected from stations that have measured a minimum of any four parameters per year, that each of these parameters is measured at least four times per year.

Types of Quality Index

The four by four rule led to three databases with parameters selected that had met all of the following criteria.

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Cholera is a diarrhoeal disease that is very sudden in onset. It is characterised by a massive loss of body fluids, through diarrhoea and vomiting leading to severe dehydration, which can be fatal. Infants and small children show the most rapid advance of the illness. Untreated cases of cholera can lead to death within 6hours depending on the degree of dehydration.

Prevention Measures

- Never Drink untreated water
- Water can be disinfected by adding 1 teaspoon of domestic bleach to 20 litres of water and leaving for at least three minutes.
- Proper personal hygiene and sanitation infrastructure should be installed and maintained.
- Cleaning drinking water containers should always be used. Recontamination of stored clean water should be avoided by not inserting the hands or dirty equipment when removing water from the container.

Gastroenteristis-Stomach Bug

Gastroenteritis is a disease where there is a sudden onset of vomiting and watery diarrhoea often accompanied by moderate fever and sometimes stomach cramps. The incubation period is generally short (8 to 48 hours). The disease is sometimes referred to as "gastric flu" or "Stomach bug". Gastroenteristis can be caused by a wide variety of microorganisms.

Transmission of the disease can occur by a variety of routes, such as eating contaminated food or drinking contaminated water, people sharing the same utensils or living together is common, especially with the viral forms of the disease, as it is spread via the faecal oral route with poor hygiene.

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RENAISSANCE IN SPORTS

Strategies, Challenges and Choices

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In association with:
Ministry of Youth Affairs & Sports, Government of India
NSS Regional Centre, Chennai, India
Young Indians, Trichy Chapter, India
NAPESS

CERTIFICATE OF MERIT

This is to certify that Mr./Ms./ Dr. P. Satyanarayana Reddy

participated / authored/co-authored/ presented a research paper entiled "Scope for Physical Education activity in the Schools of Public and Private Sector of Chittoor District of Andhra Pradesh" at the International Congress on Renaissance in sports - Strategies, Challenges and Choices, held at **National College, Thiruchirappalli, Tamilnadu** on **10th & 11th February 2017.**

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Organizing Secretary	President	Principal	Chair, Young Indians (Yi)	Regional Director
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National College				Govt of India

SCOPE FOR PHYSICAL EDUCATION ACTIVITY IN THE SCHOOLS OF PUBLIC AND PRIVATE SECTOR OF CHITTOOR DISTRICT OF ANDHRA PRADESH

Dr. P. Satyanarayana reddy MPEd, MPhil,PhD,
Physical Director, Govt. Degree College, Koduru (Rs) Kadapa(dt), AP.
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ABSTRACT

Every four years once the entire nation is high on emotions (furious, disgust, vexatious, sarcastic etc.) on the issue of the performance of Indian athletes in Olympics and in short period diverts to another current and burning issue. Being the professionals we the people must think of the means and methods to be at the top of the sporting performance. In the present study the scholar made an attempt to indentify the scope for physical education activity in the schools of public and private sector of chittoor district. To attain the purpose the data was collected by questionnaire method. The questionnaire was framed to obtain the information regarding facilities, professionals, budget and participation in regular activity and competitions. The data was collected by following cluster random sampling. The data collected was graded to four categories and analysed by following chi square method. It was identified that the private sector has less facilities when compared to public sector. In the schools of the public sector the budget allotment is significantly higher than the private sector. The percentage of students participating in physical activity is less in private sector. Recommendations: the schools should aim towards the improvement of mass participation by introducing variety of games and sports. As most of the schools does not possess the play fields the local bodies should develop community play fields with qualified professionals to impart physical culture in the students and society.

Key words; *scope, facilities, mass participation, community play fields, private sector.*

INTRODUCTION

Sport has historically played an important role in all societies, be it in the form of competitive sport, physical activity or play. Sport can no longer be considered a luxury within any society but is rather an important investment in the present and future, particularly in developing countries. Sport has a unique power to attract, mobilize and inspire. It stands for human values such as respect for the opponent, acceptance of binding rules, teamwork and fairness..

In the 2016 Rio Olympics India had its worst Olympic performance since 1992, causing a huge disappointment for India as the country's chances to win medals dwindles. India's dismal performance comes as a surprise for some since the country has more than 1.3 billion people and tens of millions of sports fans. Some of the reasons for India's poor performance are lack of sports culture, poverty and lack of education, infrastructure, lack of encouragement, less contribution to sports, corruption and less care, favouritism in choosing heads, genetic and nutrition etc.

Our athletes might not have bagged many medals but they sure are trying harder and doing better. In years to come with more attention towards sports culture, infrastructure and world class facilities for their training, these athletes will go ahead to make India proud. Among all inculcating sports culture at the early age is important. So the scholar formulated the current study to assess the scope for physical education activity in the schools of public and private sector.

METHODOLOGY

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to express our indebtedness

Editors

Contents

Chapter

10 Basic Principles of Marxism

Dr. G. Sreenivasulu*

What is Marxism?

Marxism generally refers to the ideas of the German philosopher, Karl Marx. But Marxism does not mean exclusively the ideas of Marx. It includes the ideas of Marx, Friedrich Engels and their supporters, who call themselves Marxists. Thus, Marxism refers to the body of ideas, which predominantly contains the ideas of Karl Marx.Marxism is a living philosophy. Marxist thinkers are continuously contributing to the philosophy of Marxism. Thus, it is said that Marx is dead, but Marxism is still alive.

Basic Principles of Marxism

The basic tenets of Marxism are the following: dialectical materialism, historical materialism, the theory of surplus value, class struggle, revolution, dictatorship of the proletariat and communism. Now, these principles will be discussed in detail.

1. Dialectical Materialism

Dialectical materialism is the scientific methodology developed by Marx and Engels for the interpretation of history. Here, Marx has borrowed heavily from his predecessors, particularly, the Geman philosopher Hegel. Dialectics is a very old methodology, employed to discover truth by exposing contradictions, through a clash of opposite ideas. Hegel refined it by developing the trilogy of thesis, anti-thesis and synthesis. It is popularly known as the Dialectical Triad. Progress or growth takes place through the dialectical process. At every stage of growth, it is characterized by contradictions. These contradictions induce further changes, progress, and development. The thesis is challenged by its anti-thesis. Both contain elements of truth and falsehood. Truth is permanent, but falsehood is transitory. In the ensuing conflict of the thesis and the

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anti-thesis, the truth remains, but the false elements are destroyed. These false elements constitute contradictions. The true elements of both the thesis and the anti-thesis are fused together in a synthesis. This evolved synthesis during the course of time becomes a thesis and so, it is again challenged by its opposite anti-thesis, which again results in a synthesis. This process of thesis, anti- thesis, and synthesis continues until the stage of perfection is reached. In this evolutionary process, a stage will come, when there will be no false elements. These will be destroyed at different stages of evolution.

2. Historical Materialism

Historical materialism is the application of dialectical materialism to the interpretation of history. It is the economic interpretation of world history by applying the Marxian methodology of dialectical materialism. The world history has been divided into four stages: primitive communism, the slavery system, feudalism and capitalism.

Primitive communism refers to the earliest part of human history. It was a propertyless, exploitationless, classless and stateless society. Means of production were backward, because technology was undeveloped. The community owned the means of production.They were not under private ownership and so there was no exploitation. Stone made hunting weapons, the fishing net and hooks were the means of production. The entire community owned these. Production was limited and meant for self-consumption.There was no surplus production and so there was no private property. Since there was no private property, there was no exploitation. Since there was no exploitation, there was no class division. Since there was no class division, there was no class struggle.

Capitalism succeeds feudalism. Technological development continues and so there is change in the forces of production, which leads to a mismatch between the forces of production and the relations of production, which is resolved through a bourgeois revolution. Thus the contradiction between the forces of production and the relations of production is resolved. The feudal mode of production is replaced by the capitalist mode of production.

3. Theory of SurplusValue

Marx has developed the theory of surplus value to explain the exploitation in the capitalist society. Here, Marx was influenced by the theories of classical conomists.He subscribed to the labour theory of value. The value of a commodity is determinedby the amount of labour consumed in its production. Labour is also a commodity. It can be bought and sold like other commodities. Out of the four factors of production, labour is

2018

THE REVIEW OF INDIAN CONSTITUTION

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INTRODUCTION

The Indian Constitution was created under extremely difficult circumstances. In the initial phases of the work of the Constituent Assembly it was not clear whether the Muslim-majority areas of the country shall remain within the Indian Union or not.After formalisation of the Partition of the country, the Assembly worked under the shadow of the chaos and violence associated with this climactic event in the history of India. This, along with the prevailing uncertainty about the position of the princely states, created fears about the unity and stability of the country.

Under the circumstances, keeping the administrative machinery intact became the main concern of the makers of the constitution. This perhaps was the major reason why the Government of India Act of 1935, under which the colonial administration was functioning, became the basis of the constitution of free India. The concern with keeping the machinery of colonial administration intact is strongly reflected in the debates that took place on those parts of the constitution which went beyond the Act of 1935, especially the parts relating to fundamental rights and federal structures. In the debates on these aspects of the constitution, the members seem to be constantly worried that granting various freedoms and rights to citizens and the states of the Union may weaken the administrative apparatus inherited from the colonial administration. They seem to be constantly hedging the rights of the individuals and the states with a variety of provisos and limitations.

Preamble of the Constitution

A constitution is not meant to merely create the legislative, administrative and judicial structures and establish the necessary balance between these institutions.The larger objective of a constitution is to remind the nation of its civilisational genius, urges and seekings. By thus reminding the nation, a constitution motivates the people to make the necessary effort so that the genius of the nation may find a forceful expression and the urges and seekings may be abundantly fulfilled in the present day world. The legislative, administrative and judicial structures that a constitution creates are mere mechanisms to facilitate such expression and fulfilment of the national genius and urges. This mechanism of course has to be made powerful and appropriate to the seekings of the nation. But the main objective of the constitution is to define the seekings and to give expression to the national resolve to fulfil these.

Citizenship

Citizens constitute the basic units of a nation. Constitutions of different nations expect those who would be citizens to have a certain commitment to and faith in the civilisational genius, urges and seekings of the nation, and to acquire virtues appropriate to the spirit of the nation. Most nations impart training in citizenship and patriotism to their young in diverse ways.

Soon after the promulgation of the Constitution in 1889, the Emperor of Japan issued a Rescript on Education, which sought to lay down the personal and moral virtues expected of a citizen of Japan. Issued in 1890 after much deliberation and extremely careful drafting, the Imperial rescript was soon enshrined at the core of moral education. Bowing before the Rescript and ceremonially reading it out became part of the morning ritual in the schools. The Rescript arouse such interest and devotion amongst the people of Japan that by 1940 there were as many as 595 book-length commentaries interpreting and explaining its intentionally terse and heavily meaning-laden phrases.

States of the Union

Just as the Constitution makes little attempt to define the specific virtue of being an Indian citizen, similarly it gives little recognition to the specific identity of the Indian states that together constitute the Union. As far as the Constitution is concerned the States of India are such amorphous entities that the Parliament has been given the right to increase or diminish the area of a State, alter its

boundaries or change its name. And for doing all this, the Parliament needs to only ascertain the views of the legislatures of the concerned State or States; their consent to the changes is not necessary. The Parliament can effect such far-reaching changes in the boundaries and names of the States under its normal legislative powers; such changes do not even have the sanctity of a constitutional amendment. (Articles 3 and 4).

At the time the Constitution was promulgated, it was perhaps necessary for the Parliament to be given such overriding powers concerning the States. After the princely states were merged into the Union, reorganisation of state boundaries drawn by the colonial administration and renaming of many states had become essential to accommodate the legitimate regional identities and aspirations. But,there is no justification for the Parliament to retain this untrammelled right to reorganise and rename States after fifty years of independence. There is a need to seriously review these provisions.

Provisions Concerning the Minorities

Every self-confident nation makes provisions for the protection of minority groups.Such protection is accorded so that the diverse cultural, linguistic and other capabilities of minority groups may contribute to and thus enrich the national mainstream, which naturally is constituted of the majority. Section 29 of the Constitution that guarantees protection of the minorities, however, almost invites diverse groups to claim special rights in the name of their distinct language, script or culture. The other provision regarding minorities, Article 30, gives the minorities the right to establish and administer educational institutions of their choice and thus creates an invidious distinction against the majority. The right to establish and administer educational institutions of their choice is a natural right of all communities, whether constituting a minority or a majority. The article does not in fact give any special right to the minorities, but takes away a valuable natural right from the majority.

Provisions Concerning Freedom of Religion

Article 25 grants "freedom of conscience and the right freely to profess, practise and propagate religion." Freedom to profess and practice the religion of their choice is of course a natural right of all citizens in a secular state. But, the freedom to "propagate" that has been included in this clause is highly unusual. No secular state guarantees the freedom to propagate and convert people from

other faiths. This freedom has been fortuitously circumscribed by the judicial interpretations of the term "propagate", which have held that "propagation" does not mean "conversion". But the phrasing of the original clause leaves much scope for intense proselytising

activity on behalf of various religions and sects.

The second clause of the Article makes two provisos to the freedom of religion. The first proviso gives the State the authority to regulate or restrict "secular activities"associated with religious practice, and the second proviso vests in the State the power to make laws for "social welfare and reform" of Hindu religious institutions.

Judiciary and Administration

The Constitution of India is perhaps the longest constitution in the world. This extraordinary length of the Indian constitution arises in large part from the detailed provisions it makes regarding the public services and the Judiciary. The Constitution records in great detail the structure of administrative and judicial institutions, and the rights, privileges and also the salaries and allowances of public and judicial officers at various levels. Most democratic constitutions of the world record only the fundamental principles of governance, and leave such detailed working out of the administrative and judicial arrangements to the wisdom of the Parliaments. Such institutions are almost always created by legislative acts of Parliaments, not by constitutional fiats.

The leaders of the Constituent Assembly deliberately chose to include detailed administrative and judicial arrangements in the Constitution of India. One reason for this decision was that in the prevailing circumstances, the leading founding fathers were keen to retain intact the administrative and judicial arrangements of the colonial administration. And therefore they found it necessary and expedient to provide constitutional guarantees to the high administrative and judicial officers that their domain of authority as well as their salaries, perquisites and privileges would remain unaltered in independent India. But perhaps even a more pressing reason was that many of the leading founding fathers had little faith in the wisdom and maturity of the people of India and the Parliaments chosen by them. They were afraid that Parliaments might chose to make drastic alterations in the administrative and judicial

structures of the colonial administration, which many of them believed were ideal for the governance of India.

REFERENCES

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2) The Constitution of the People's Republic of China, adopted on December 4, 1982,Foreign Language Press, Beijing 1983, p.1 and 6.

3) See, Carol Gluck, 1985, cited earlier, p.120-7 and p.146-8

4) Constituent Assembly Debates, VII, i.38.

5) For the history of this article in the Constituent Assembly, See, Dharampal,Panchayat Raj as the Baisis of Indian Polity: An Exploration into the Proceedings of the Constituent Assembly, AVARD, New Delhi 1962.